

ServDes. 2014

SERVICE FUTURES

Proceedings

Editors

Daniela Sangiorgi

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Lancaster University, United Kingdom

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Service Futures

Daniela Sangiorgi



ServDes2014 explores how Service Design is contributing to ‘Service Futures’ and how it is developing as a field of research and practice.

We have witnessed how the concept and role of services in the economy and society have come a long way since its first definitions and studies. Services have moved from being a peripheral activity in a manufacturing - centred economy, to an engine for growth and society driven innovation. This transformation has been fully recognised with a flourishing of service innovation and service research studies aimed at deepening understanding, and at supporting the development of services both as a sector and as a concept.

We suggest that Service Design is closely following this transformation. Starting from its initial focus on service interactions and experiences, Service Design research and practice have entered more strategic and transformational roles, dealing with issues of organisational change, system design, sustainability and social change, amongst others.

Increasingly, Service Design is considering ways to integrate and collaborate with other service related disciplines. Also, questions are emerging on the future of this field, considering the growing areas of application and the expansion of the concept of service itself. ServDes2014 has brought these recent discussions and transformations to the fore and offered an ideal place to collectively reflect on and imagine that future.

ServDes.2014 ran over three days:

- The first day was dedicated to practical explorations of Service Design with eight workshops led by both practitioners and academics;

- The second day was mostly focused on (long and short) papers presentations organised in three parallel sessions and two extra workshops;
- The third and final day was partly dedicated to papers presentation and came to an end with three parallel forums exploring the future of Service Design Research and Education and their relationship with Social Innovation.

Working at the boundaries of Service Design, Digital and Social Innovation, the keynote speaker Dominic Campbell (Futuregov), projected novel spaces and responsibilities for Service Design in relation to complex societal transformational challenges, while Prof. Pelle Ehn (Malmö University), positioned it within a historical retrospective of Participatory Design in a constant search for more democratic (service) design practices.

The conference was organised around five main themes which are reflected in the proceedings structure: Emerging Directions for Service Design; Design for Service Innovation and Transformation; Service Design and Implementation; Novel Service Design Frameworks and Tools; Service Design Across Organisations.

Thanks to everyone who contributed and participated to this conference, and we look forward ServDes.2016 further developments and ideas.



Our Keynote Speakers

DOMINIC CAMPBELL
FutureGov, London, UK

Designing for Change in Complex Organisations

Dominic Campbell is a digital government specialist and social innovator with a background in government policy, communications and technology-led change.

He is an experienced organisational change agent with senior management experience in implementing successful change initiatives within the local government sector, with a primary interest in emerging uses of new media, design and “social” strategies to deliver public service transformation and social innovation.

Having spent five years in Local Government in London, Dominic established FutureGov in early 2008. A team of 20, FutureGov supports government – particularly local government – in the UK, Europe and the United States to better understand new media and draw on social technology-based strategies and tools in the areas of business improvement and improved citizen engagement.



PELLE EHN
Malmö University, Malmö, Sweden

In Service of Things to Come?

Pelle Ehn is professor at the School of Arts and Communication, Malmö University, Sweden. He has for four decades been involved in the research field of participatory design and in bridging design and information technology. Research projects include DEMOS on information technology and work place democracy, UTOPIA on user participation and skill based design, ATELIER on architecture and technology for creative environments, and Malmö Living Labs, on open design environments for social innovation.

His publications include Computers and Democracy (1987), Work-Oriented Design of Computer Artifacts (1988), Manifesto for a Digital Bauhaus (1998), and as one of the voices of A.Telier Design Things (2011). Later publications include Agonistic participatory design (CoDesign), Design Matters in Participatory Design (International handbook on Participatory Design), Design Things versus Design Thinking (Design Issues), Utopian Design (Design and Anthropology) and What is the object of design (CHI).

Table of Contents

LONG PAPERS

Emerging Directions for Service Design

- pg 1. Service Futures: What is Expected from Customer Care?
Asbjørn Følstad, Knut Kvale, Joachim Bråthen, Ida Maria Haugstveit

- pg 11. Priority Setting For Service Design in Age-Friendly Cities: the City of Ankara.
Necmiye Savut, Halime Demirkan

- pg 23. The Identification of Innovative Customer Groups for Collaborative Design Activities.
Jakob Trischler, Don Scott

- pg 35. Starting a Conversation: the Need for and Application of Service Design in
International Development.
Ruth Edmonds, Mary Rose Cook

- pg 47. The Potential of a Design for Service Approach to Transform Voluntary
Community Sector Organisations.
Laura Warwick, Robert Young, Matthew Lievesley

- pg 57. Informal, Formal, Collaborative: identifying New Models of Services within
Favelas of Rio de Janeiro.
Maíra Joly, Carla Cipolla, Ezio Manzini

- pg 67. Brave New Worlds: Transitions in Design Practice.
Joyce Yee, Emma Jefferies, Lauren Tan

- pg 79. Design for Social Innovation: Building a Framework of Connection Between Design
and Social Innovation.
Marzia Mortati, Beatrice Villari

- pg 89. The Role of Service Design in the Effectual Journey of Social Entrepreneurs.
Gerasimos Balis

- pg 100. Borg-Human Interaction Design.
Claudio Pinhanez

- pg 110. The Service Ouroboros: Designing Persona Service Cycles.
Sune Gudiksen, Eva Brandt

- pg 122. Toward an Anthropology of Services
Jeanette Blomberg, Chuck Darrah

Design for Service Innovation and Transformation

- pg 133. Design Strategies for Human **Realtions** in Services.
Dirk Snelders, Evelien Van de Garde-Perik, Fernando Secomandi
- pg 143 Accessible Self-Service: a Driver For Innovation in Service Design.
Jenny Darzentas, John Darzentas
- pg 154. Servitization of Products as an Approach For Design-Driven Innovation.
Ehsan Baha, Aylin Groenewoud, Koert van Mensvoort
- pg 164. Design Legacies: Why Service Designers are not able to Embed Design in the Organisation
Sabine Junginger
- pg 173. Passing on, Handing over, Letting go – the Passage of Embodied Design Methods
for Disaster Preparedness.
Yoko Akama
- pg 184. Imagineering as Complexity-Inspired Method for Transformative Service Design.
Diane Nijs, Ir. Jo Van Engelen

Service Design and Implementation

- pg 194. Service Design as an Approach to New Service Development: Reflections and
Future Studies.
Eun Yu, Daniela Sangiorgi
- pg 205. Conceiving and Developing a Mainstream Consumer Service to Support Older or
Vulnerable People Living Independently.
Nikki Holliday, Gillian Ward, Darren Awang, David Harson
- pg 215. Challenges in Designing and Scaling-Up Community Services.
Nicola Morelli
- pg 226. A Design-led Complex Intervention for the Stroke Rehabilitation Service.
Alastair Macdonald, David Loudon, Anne Taylor
- pg 237. Experience-based Co design and Healthcare Improvement: Realising Participatory Design
in the Public Sector.
Sara Donetto, Paola Pierri, Vicki Tsianakas, Glenn Robert
- pg 247. Creating an Evidence-Based Research Methodology to Determine whether
Awareness-Based Practices Benefit Co-creation for Service Design within a
Multidisciplinary Social Innovation Community.
Pratik Vyas, Robert Young

Novel Service Design Frameworks and Tools

- pg 259. What triggers us?! A Close Look at Socio-Material Situations of Co-designing Services.
Mette Agger Eriksen
- pg 270. How to Get a Leader to Talk: Tangible Objects for Strategic Conversations in Service Design.
Simon Clatworthy, Robin Oorschot, Berit Lindquister
- pg 281. Using Information Visualisation to Support Creativity in Service Design Workshops.
Graham Dove, Sara Jones
- pg 291. Components of a Visual Language for Service Design.
Ragnhild Halvorsrud, Eunji Lee, Ida Maria Haugstveit, Asbjørn Følstad
- pg 301. Incorporating the Customer Experience along Different Iterative Cycles of Service Design.
Teresa Sarmento, Lia Patricio
- pg 313. Wearable Probes for Service Design.
Aaron Mullane, Jarmo Laaksolahti, Dag Svanæs
- pg 323. The Applicability of Online Communities in Health Service Co-Design.
Ander Altuna, Thomas Jun

Service Design across Organisations

- pg 333. Weaving Place into the Centre of Service Design: a Reflective Case Study.
Alison Prendiville
- pg 344. Resource Oriented Service Ideation: Integrating S-D Logic with Service Design Techniques.
Masanao Takeyama, Kahoru Tsukui, Yoshitaka Shibata
- pg 354. Fragile Liaison — Opportunities and Challenges in Cross Organisational Service Networks.
Jaana Hyvärinen, Jung-Joo Lee, Tuuli Mattelmäki
- pg 365. Design for Cross-Sectorial Service Innovation - Provisional Framework
Bettina Minder

SHORT PAPERS

Emerging Directions for Service Design

- pg 376. Transforming the Planning Process – Challenges for the Service Designer.
Lara Salinas, Sebastian Weise, Serena Pollastri
- pg 382. Transforming Basque Manufacturing Companies Through Service Design.
Showing the Potential of Service Thinking.
Ion Iriarte, Daniel Justel, Mikel Orobengoa , Ester Val, Itsaso Gonzalez
- pg 388. The Future of the Service Design Category: Authentic Adaption as a Way Out?
Eva Kirchberger, Mark Kennedy
- pg 394. Challenges and Perspectives in Service Design Curricula.
The Case of the Service Systems Design Master of Aalborg University in Copenhagen.
Amalia De Götzen, Nicola Morelli, Francesco Grani

Design for Service Innovation and Transformation

- pg 401. Positioning Service Design as Transformational Approach in Education for
Sustainable Development (ESD).
Ksenija Kuzmina, Tracy Bhamra
- pg 407. Transforming Student Services in Higher Education.
Heather Madden

Novel Service Design Frameworks and Tools

- pg 412. Customer Journeys: Involving Customers and Internal Resources in the Design and Management of Services.
Asbjørn Følstad, Knut Kvale, Ragnhild Halvorsrud
- pg 418. Service Archetypes, a Methodological Consideration.
Stefan Holmlid, Johan Blomkvist
- pg 423. A Research Framework for Service Evaluation.
Francesca Foglieni, Stefano Maffei, Beatrice Villari

Service Design across Organisations

- pg 429. Defining Values through Collaboration.
Karianne Rygh, Danielle Arets, Bas Raijmakers
- pg 434. Dead or Alive: How Municipalities Can Use Service Design Tools to Create Live Services that are Flexible, Mindful and Involving.
Fredrik Sandberg
- pg 440. Open Service Innovation Platforms and Experience.
Dimitra Chasanidou, Amela Karahasanovic
- pg 446. The Strategic Role of Design in Supporting Knowledge Exchange.
Jennifer Ballie, Suzanne Prior

WORKSHOPS

- pg 451. Networked Collaboration Canvas: How Can Service Design Facilitate Networked Collaboration?
Facilitators: Lilian Henze, Ingrid Mulder
- pg 454. The Appliance of Science — How Behavioural Science Can Help Create Better Services.
Facilitators: Ed Gardiner, Rupert Tebb
- pg 457. Published Research Vs. Business Reality
Towards a Common Understanding of Customer Journey Mapping.
Facilitators: Markus Edgar Horneß, Marc Stickdorn
- pg 460. Feely Touchpoints and Bouncy Journeys? Kinetic Materials for Service Design.
Facilitators: Robb Mitchell, Mette Agger Eriksen, Sune Gudiksen, Kirsikka Vaajakallio
- pg 466. Bedside Manners: Lessons learned from Design Practice in Healthcare.
Facilitators: Daniel Wolstenholme, Helena Sustar, Simon Bowen
- pg 469. CoCo Cosmos – Experiencing a New Visual Way to Develop Service Businesses.
Facilitators: Krista Keränen, Katri Ojasalo
- pg 472. Future Worlding for Service Design.
Facilitators: Sandjar Kozubaev, Chris Livaudais
- pg 475. What if the Service Design Industry Did Mozilla Open Badges?
Facilitators: Sarah Drummond, Andy Young, Valerie Carr, Lizzie Brotherston
- pg 477. Open Service Design? Exploring Customer Co-Creation in a Service Manufactory.
Facilitators: Julia Jonas, Angela Roth, Stefan Wolpert, Kathrin Moeslein
- pg 481. Designing the Agenda – Co-creation with Co-workers to Improve Services in the Health Care Domain.
Facilitators: Erik Hammarström, Johanna Thorell

FORUMS

- pg 483. Service Design and Research
Facilitators: Daniela Sangiorgi, Alison Prendiville, Lia Patricio, Don Allen
- pg 484. Service Design and Education
Facilitators: Lara Penin, Jodi Forlizzi, Beatrice Villari, Stefan Holmlid
- pg 484. Service Design and Social Innovation
Facilitators: Ezio Manzini, Adam Thorpe, Carla Cipolla

Papers



LONG PAPERS

Service futures: What is expected from customer care?

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Abstract

Customer care is a critical aspect of service provision. A customer-centric approach to the design of services depends on knowledge of customers' preferences and expectations for customer care. In this paper, we present a study on customers' near future expectations for customer care within selected service sectors. As part of a future scenario process, 151 participants contributed their perspectives on customer care for banking, telecom, and logistic services. The study findings highlight expectations concerning service value and service experience, and shed light on preferences for self-service vs. manual care. Furthermore, we find that, though the participants expressed a marked preference for service providers that add a positive experiential aspect to their customer care, the studied service sectors were not closely associated with experiential customer care. Consequently, the experiential aspects of customer care may represent an unrealized potential in these sectors.

KEYWORDS: Customer insight, customer care, service design, future services

Introduction

Excellent customer care is a hallmark of the customer-centric service provider (Cook, 2011). Customer care takes place in the interactions between the customer and the service provider, where the latter is represented through front-line employees or self-service channels, and depends on the service provider's empathic understanding of the customers' needs and expectations (Gorry & Westbrook, 2011). The quality of customer care is seen as critical for customer experience (Frow & Payne, 2007), customer retention (Cook, 2011) and for generating positive word of mouth (Gremler, Gwinner & Brown, 2001). Designing excellent customer care depends on a thorough understanding of customers' preferences and expectations, to facilitate service performance that is equal to or above these expectations (Cook, 2011).

To support service providers and designers in their efforts to facilitate excellent customer care, we present a study of customers' preferences and near future expectations for customer care in three important service sectors: banking, telecom, and logistics; all of these sectors are in the process of transforming towards servicizing (Baines, Lightfoot, Benedettini & Kay, 2009) their product portfolio.

In this study, we analyze customers' preferences and expectations according to Polaine, Løvlie, and Reason's (2013) distinction of service performance in terms of *service value*, which concerns objectively measurable service delivery relative to service cost, and *service experience*, which concerns the customer's subjective perception of the service. This distinction parallels other

frameworks that may be used to explore service performance, such as that of *service value* and *satisfaction* in the field of service research (Cronin, Brady & Hult, 2000) and *effectiveness* and *efficiency* vs. *satisfaction* in the field of human-centric design (Maguire, 2001). We chose the framework of Polaine et al. (2013) to ground our findings specifically in the field of service design.

The study contributes insight that is of relevance for the design of near future services in these service areas. It also contributes to our general knowledge of customer preferences and expectations for near future customer care.

Background

Customer care

Customer care is understood as customer service provided on the basis of a thorough understanding of customer needs and preferences (Gorry & Westbrook, 2011). Critical aspects of customer care, studied in the fields of service research and service design, include interpersonal relationships between customers and employees (Gremler et al., 2001), perceived characteristics of self-service solutions that lead to customer satisfaction and dissatisfaction (Meuter, Ostrom, Roundtree & Bitner, 2000) and the importance of the right clues provided by the service provider to build the desired customer experience (Berry, Carbone & Haeckel, 2002). The customer-centric organization needed for excellent customer care has been studied from, among others, the perspective of moments of truth (Carlzon, 1989), critical incidents (Meuter et al., 2000), and experiential service provision (Zomerdijs & Voss, 2010).

The service value of customer care

The value of customer care may concern objectively measurable outcomes such as efficiency, availability, and cost. Efficiency concerns the correctness and timeliness of service delivery and is closely associated with the structure of the back-stage processes of the service provider (Zomerdijs & Voss, 2010). The efficiency of service performance is also closely related to ease of use, in particular for self-service alternatives, where the usability of such alternatives may determine perceived service performance (Meuter et al., 2000). Availability concerns the how and when of service provision. Online self-service may indeed improve service availability, following the credo of 24/7 (Gorry & Westbrook, 2011). However, companies that provide self-service solutions only to achieve cost reduction may easily end in what Polaine et al. (2013) refers to as a "race to the bottom" (p. 2) where the customer-centricity perspective is lost along the way. Though cost is important to customers, other differentiators are needed to counter such a race to the bottom.

The service experience of customer care

The experiential outcomes of customer care may of course depend on the measurable outcomes of a service, but other aspects are also of importance. In their work on experiential services, Zomerdijs & Voss (2010) discuss how well-designed services may generate positive emotional responses in customers which, in turn, drive purchase, loyalty, and word-of-mouth. For this purpose, they highlight the importance of designing series of service encounters and clues, engaging with customers through front-line employees, designing a dramatic structure to services, and being aware of the sensory experience involved in the physical environment. Cook (2011) and Polaine et al. (2013) discuss how experience may depend on expectations; a

positive experience is generated when the service delivery surpasses the customers' expectations, whereas service delivery below expectation generates a negative experience.

The experiential performance of customer care may also depend on the competency and flexibility of the service provider. Competence concerns the ability of the service provider to advise and guide, and may be reflected both through front-line employees and self-service solutions (Gorry & Westbrook, 2011). Flexibility concerns service aspects such as customization (Holmlid, 2009) and personalization (Lee & Park, 2009), including the freedom to choose between self-service and manually served channels (Gorry & Westbrook, 2011).

Research objective

Many innovations in experiential services are driven by detailed insight of customers (Voss & Zomerdijs, 2007). The aim of this study is to provide customer insight that may be useful in the practical design of future customer care, and that may serve as a general contribution to the scientific field of service design. Such insight serves as a needed complement to trend report and foresight studies (such as James, 2011; Watson, 2011), which, typically, are based on contributions from leading service managers rather than direct customer involvement. To focus the gathered customer insight, we see it as beneficial to target near future services.

The research objective of this study is therefore to explore customer preferences and expectations for customer care in near future services.

Because the study was situated in the context of a research project concerning three particular service sectors, that is, banking, telecom, and logistics, the study findings mainly concern these sectors. However, the centrality of these sectors in current and near future service provision should make this selection of sectors of high general interest.

Method

To gather exploratory customer insight, we needed to engage customers in open-ended reports on their preferences and expectations to produce findings that were not foreseen prior to the study.

Polaine et al. (2013) distinguish between quantitative *market research*, where the objective is to reach a small number of objective findings on the basis of quantitative data from large amounts of customers, and qualitative *insight research*, where the objective is to generate a large number of insights on the basis of qualitative data from a small number of customers. Such small sample insight research may be exemplified by the observational studies of the empathic design tradition (Leonard & Rayport, 1997).

We wanted to explore customer preferences and experiences on the basis of an insight research approach, while improving the robustness of our findings by involving a somewhat larger number of customers than what is typically done in insight research. Our solution to this method challenge was to employ an online social platform for gathering customer insight, where customers were invited to contribute their insights as free text comments in response to a small number of pre-set topics. All customer comments were made available to all participants, and study participants and moderators alike could reply to, or 'like', any contribution made by others. The online social platform was originally established for user involvement in Living Lab

innovation processes (Følstad, 2008) and has previously been used for customer feedback in service innovation (Følstad, Fjuk & Karahasanovic, 2012).

The participants were recruited as a sample from an online marketing panel consisting of more than 50.000 individuals who were representative of the Norwegian population. Norway is arguably a suitable location for insight research by means of online social platforms due to relatively high levels of computer literacy and Internet penetration. To ensure the participants' interest in writing free text and engaging in online dialogue, we invited from the panel only those that stated agreement on two initial questions concerning their preference for expressing themselves in writing and their interest in debate.

In January 2013 the participants were asked to contribute in four study tasks. Task 1 concerned excellent customer care independent of service sector; Task 2–4 concerned expectations for near future customer care in the three service sectors of the study.

- » *Task 1: Examples of excellent customer care.* As a warm-up task, we asked our participants to contribute examples of excellent customer care from any sector. This was done to start with a topic that was very concrete and that invited participants to make engaged and detailed comments. This introductory topic also served the purpose of gaining insight in customers' immediate associations with excellent customer care, which could then be compared with the preferences and expectations concerning the three subsequent topics.
- » *Task 2–4: Expectations for customer care in near future banking (Task 2), telecom (Task 3), or logistics services (Task 4).* The participants were briefly reminded of the tremendous changes we have witnessed over the last few years in the given service sector. For example, in Task 2, they were reminded of how banking services have moved from physical banking offices to web-based and mobile platforms. The participants were then instructed to think four years ahead, to the year 2017, share their customer care expectations, and suggest what needs to be changed.

To stimulate conversation, the participants were notified by email if anyone replied to their comments and invited to return to the online platform by means of a direct link to the topic in question. Two study moderators (the first and forth author of this paper), monitored the participants contributions and made replies with follow-up questions, acknowledgements of valuable contributions, or, on a small number of occasions, challenges for controversial contributions. From previous studies, we know that such active moderation could improve the usefulness of the participants' contributions (Følstad, Hornbæk, & Ulleberg, 2013).

To explore customer preferences and expectations, we conducted thematic and content analyses of all answers (Ezzy, 2002). Firstly, we read through the answers in an open-minded manner, to identify themes within the data set. To allow for comparison of preferences and expectations, we established one set of themes to reflect the participants' answers for all four tasks. Secondly, two researchers coded the replies according to the emerging themes. The seven most prominent themes are presented as customer care preferences in Table 1. Inter-rater reliability was obtained through pilot coding (Cohen's *kappa* ranging between 0.6 and 0.7 for the themes of Table 1), indicating substantial agreement (Landis & Koch, 1977).

Results

A total of 151 participants contributed with comments in our study. The participants were divided nicely across gender (51% female) and spanned ages 21 to 80 years (mean age was 45 years). The participants contributed 555 comments across the four study topics. Comment length averaged 333 characters. Findings from our analyses of the material are presented below in terms of preferences and expectations respectively.

Preferences for customer care (Task 1)

The study participants' examples of excellent customer care, contributed in Task 1, provided interesting insights into a wide range of customer preferences. The preferences we identified may be grouped according to the distinction between service value and service experience made by Polaine et al. (2013). For a quick overview, the customer care preferences listed by the participants are grouped according to this distinction in Table 1.

Service performance types	Identified customer care preferences
Service value	Efficiency / availability
	Cost
	Ease of use
Service experience	Friendliness
	Benevolence
	Competence
	Flexibility

Table 1: The participants' customer care preferences mapped onto the service performance types of Polaine et al. (2013)

Service value was strongly associated with the efficiency and availability of customer care; in fact, nearly half (48%) of the Task 1 participant comments concerned such preferences. As stated by one of the participants:

"In my eyes, customer care should be to the point, speedy, and efficient. Nothing is worse than having to go through four departments to get an answer while the service personnel try to sell you other services."

However, several of the participants noted that efficiency should not compromise the willingness and ability of customer care personnel to understand the customer. Efficiency is expected, but not seen as incompatible with mindful customer care.

Not surprisingly, the participants highlighted a desire not to be kept waiting for customer care. However, when waiting occurs, excellent customer care requires that the service provider acknowledges the customer and reassures that she has not been forgotten.

"I find it to be good customer care when the customer is seen. For example, if a waiter, who is busy, gives you an eye and signals that he has seen you and will come to your table as soon as possible, this is very good."

Some of the participants also discussed the importance of expectation setting and noted that their perceptions of customer care may depend on such expectations.

"[...] The airline Ryanair has managed the small masterpiece of lowering our expectations. [...] I would not call the customer care of Ryanair particularly good, but I assume it is good customer care when you get as expected or what?"

Very few of the Task 1 comments (3%) concerned cost and ease of use. When asked about memorable examples of customer care, the participants clearly tended to focus on service values related to efficiency and availability rather than cost and ease of use.

Service experience was equally important as service value in the participants' examples of excellent customer care. The most frequently mentioned aspect of service experience was what we term *benevolence*. We defined benevolence as customer care that reflects in the service provider a propensity to have the customers' best interests at heart. In Task 1, one-third

(33%) of the participant comments concerned examples of customer care that appear to reflect benevolence in the service provider.

The prevalence of benevolence in the participants' examples of excellent customer care is highly interesting, in particular as it represents a marked opposition to service providers seeking to maximize short-term profit. In these examples, the participants showed their preference for service providers who act in a manner that reflects a long-term interest in their customers' wellbeing. Such acts of benevolence are presented as particularly indicative of excellent customer care when they hold a short-term cost for the service provider.

"Without us having complained, we were called by [our broadband provider] with a notification that they would compensate poor signal quality by a reduction in the oncoming invoice – this is what I think of as delivering above expectation – totally unexpected and highly confidence-inspiring."

Friendliness is another aspect of service experience that was markedly present in the examples of excellent customer care, mentioned in 32% of the Task 1 comments. *Friendliness* refers to customer care conducted in a pleasant, courteous, positive, trustworthy, and not too pushy manner. Several respondents noted that a lack in friendliness might be detrimental to the customer care experience.

Service provider competence was also highlighted as important to excellent customer care, mentioned in 14% of the proffered customer care examples. Though competence arguably can be important also in self-service contexts, the participants mainly addressed competence in the context of manual customer care.

"My search for new mountain boots ended at [a retail store] where I experienced both competence and good service. Sales personnel that radiate trustworthiness are my favorites. Then I buy."

Service flexibility was not mentioned in any of the examples of customer care. Clearly, our participants associated more closely excellent customer care with experiential aspects such as benevolence, friendliness, and competence rather than flexibility.

Near future expectations (Task 2-4)

In Task 2–4, the participants provided their expectations for customer care in the near future of banking, telecom, and logistic services. We applied the same set of themes for Task 2-4 as for Task 1. This made it possible to identify differences between customers' general preferences and their near future expectations for customer care in these three sectors.

Service value was strongly prevalent also for the participants' expectations concerning customer care. Across all three sectors, the aspect of efficiency and availability was by far the most prominent service expectation, reflected in 53% of the Task 2–4 participant comments. Efficiency expectations concerned response time, timeliness in delivery, and robust recovery from error. Availability expectations concerned working hours for manual service and physical location of offices or pick-up points.

Ease of use was somewhat more prominent in the customer care expectations of Task 2–4 than in the examples of excellent customer care in Task 1. In particular, the participants highlighted an expectation of easy-to-use self-service for online banking. It seems as if the importance of ease of use was readily present in the minds of the participants for sectors where they have had substantial experience in self-service solutions.

"[...] if I should make a wish for the future, it would be a simpler user interface for online banking. I often have problems in navigating, and which money that have/ should/ ought to be moved between which account [...]"

Cost was also somewhat more prominent for customer care expectations expressed in Task 2–4, in particular for logistics services, than was the case for the examples in Task 1.

Service experience in the comments for Task 2–4 mainly concerned competency and flexibility (mentioned in 28% of the Task 2-4 comments) in service provision rather than friendliness and benevolence (mentioned in 14% of these comments). This is strikingly different from the service experience aspects associated with excellent customer care in Task 1.

The prominence of competency as a customer care expectation was found across all the studied service sectors. The participants expressed an expectation both to be met with knowledge and for this knowledge to be used for advice rather than as part of marketing or sales initiatives. This use of knowledge was argued to increase customers' trust. Some highlighted the need to improve the training of frontline personnel to meet heightened competency demands.

"[...] in the future (as many of the services will be self-service) it will be important that the provider is accessible and that customer care personnel has thorough knowledge in their fields (invoice, technical, network, subscriptions, etc). [...]"

Flexibility was also a somewhat prominent customer care expectation across all the studied sectors. For telecom providers, participants highlighted a need for flexibility both in terms of channels for customer care and in terms of personally configurable service bundles. For logistic services, participants discussed flexibility in terms of choice in pick-up points as well as choice between self-service and manual customer care. This latter aspect of flexibility was also a particularly noteworthy customer care expectation in the banking sector.

"To me an online bank, and in particular a mobile bank, has become an important tool that resolves problems with opening hours, etc. I hope that these are continually improved. At the same time, I hope that advisors will still be available to help if one feels lost among all the products of a bank."

The balance between self-service and manual service in customer care seemed to be one of the more engaging issues for the participants and generated some emotionally charged discussion. In particular, participants disagreed about whether manual customer care was to be expected as a free option. Proponents of free manual customer care argued that such service is sufficiently beneficial to the customers' experience to be a justifiable cost for the service provider, as expressed in the following comment:

"@anon1: I am happy that your family is good with data. I am afraid not all are as good [...]. I think I would like to see the advisor in person when I am about to take up a loan [...]"

Conversely, opponents argued that manual customer care should be seen as a cost to be reduced as much as possible and reserved for premium customers, as expressed below:

"@anon2: Nothing is for free. For me, banks may have a lot of manned offices, personal customer care, [...], but I am not willing to pay the cost for this. [...]"

Interestingly, benevolence and friendliness in customer care were far less present in the participants' near future expectations for the given sectors than they were in their examples of excellent customer care. However, we may still learn something concerning the importance of benevolence and friendliness from the participants' expectations.

In the banking and telecom sectors, some near future expectations concerned products, subscriptions, and services being better fit to the actual needs of the customer, as opposed to being fit mainly to the revenue models of the bank or telecom provider. Such near future expectations arguably are associated with a wish for service providers in these sectors to make it clearer that they have their customers' best interest at heart. As one participant stated, when considering the telecom sector:

"Good customer care from the telecom operator would be to get help to find the right subscription plan based on one's own actual use, and not having to change operators to get the lowest price. This should be the operator's responsibility."

For banking and logistic services, some pointed out the importance of friendliness in the personal meeting between the customer and the frontline personnel.

"[...] a bank which cares and shows interest in my life situation, this is the bank I want."

Discussion

In her book on customer care, Cook (2011) states, "We have become a service economy. Yet few organizations are truly delighting their customers" (p. 1). The findings from our study provide some insight concerning customers' customer care preferences and near future expectations in key service sectors. In the following sections, we will discuss our findings in terms of their implications for (a) service providers and practical service design and (b) the scientific discipline of service design.

Implications for service providers and practical service design

The presented study findings hold several implications for service providers and practical service design. In the following, we will discuss three.

Firstly, excellent customer care requires attention to a range of aspects concerning both service value and service experience, something that is in line with the current state of the art (Cook, 2011; Polaine et al., 2013; Stickdorn & Schneider, 2011). Though efficiency is highly appreciated in customer care, the participants also expressed appreciation for the experiential aspects of service provision. Friendliness and benevolence, that is, having the customer's best interest at heart, are important in the personal meeting between customers and frontline personnel; these aspects also need to be addressed when improving the efficiency of customer care (Gorry & Westbrook, 2011). Furthermore, such experiential aspects can also be important in self-service solutions; an interesting service design challenge will be to transfer the friendliness and benevolence that is desired in manual customer care to self-service solutions.

Secondly, though experiential aspects such as friendliness and benevolence in service providers are highlighted in the examples of excellent customer care, the same aspects are nowhere near as prevalent in the customer care expectations for banking, telecom, and logistics services. Hence, we suggest that these service sectors may represent an opportunity for service designers in the future to augment these services with other experiential aspects than what are currently expected by customers, in particular by strengthening the impression of customer care as friendly and benevolent.

Thirdly, though we found that flexibility, cost, and ease of use were widely expected for near future banking, telecom, and logistics services, these aspects were not prevalent in the examples of excellent customer care expressed by participants in Task 1. Possibly, future service designers should work to raise customers' attention to the importance of some of these aspects, in particular flexibility; that is, to clarify for the customers the benefits they are offered by flexible customer service. In particular, the choice between self-service and manual customer care, or a combination of the two, may currently be underplayed as a service benefit.

Implications for the scientific discipline of service design

Our exploratory approach to customer care preferences and expectations gave us some new insights concerning what matters to customers. While the literature provides ample insight concerning the importance of experiential aspects in service design (Zomerdijk & Voss, 2010) and customer care (Gorry & Westbrook, 2011; Gremler et al., 2001), as well as how to achieve a positive customer experience (Cook, 2011; Polaine et al., 2013; Stickdorn & Schneider, 2011), less is written on the actual experiences that we want customers to have.

In this study, we established a set of concepts to analyse our data, presented in Table 1. While some of these concepts are well-established, such as *efficiency*, *availability*, and *competence*, others are less familiar, in particular the concept of *benevolence*. To understand the experiential needs and desires of customers, we may need to expand our technical vocabulary to be able to precisely point out and design for the experiences that we want to evoke in the customer.

We do not argue that the presented set of concepts is complete or adequate for understanding customer experience across service contexts. However, we believe that for such sets of concepts to be available in practical service design they need to be established within the science of service design. Possibly, our methodological approach of gathering customer insight through an online social platform may represent an interesting middle way, between what Polaine et al. (2013) discuss as insight research and market research, to establish such concepts for customers' experiences. In this approach, some of the in-depth character of, for example, the observational studies of empathic design is traded for the robustness of market research.

Conclusion

We have presented the findings from a study on customer preferences and near future expectations for customer care. We have discussed how the study findings may have both practical and scientific implications. Our study has its limitations; in particular, we focused on one single country and three service sectors. In consequence, the generality of the findings may be limited to service contexts that are sufficiently similar to those of this study. Nevertheless, our findings provide relevant insight for both practitioners and researchers in service design. We hope that this study motivates researchers to further explore customers' expectations and preferences for customer care and customer experience in service design.

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Priority setting for service design in age-friendly cities: The city of Ankara

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Abstract

The aim of the study is to develop a public service design framework as an innovative management tool to be used in decision-making in the urban areas for age-friendly cities. Based on the previous research on age-friendly cities, the relevant initiative priorities that are mainly shaped by the population of the city of Ankara are determined. A collaborative approach among the citizens and service providers is used as a basis for developing a framework for public service design. The self-assessment tool that is composed of 82 items categorized under eight themes of an age-friendly city was completed by 251 citizens. Results of the Principal Component Analysis method indicated that the primary factor was composed of the community support and health services features. The second factor was related to transportation; and, the third was the combination of civic participation and employment features with respect and social inclusion features.

KEYWORDS: age-friendly cities, collaborative approach, service design

Introduction

The increase in the aging population, who prefer to age in familiar environments, enhanced the importance of providing ‘age-friendly’ services to the senior citizens. As Morelli (2003) stated, the traditional focus of design disciplines were on the products, but lately the focus has been shifted to product-service systems. The potential shifts from product to public services forced the models to be designed for the delivery of services for the well-being of people.

Also, Bason (2012) recently stated that service design explores the public sector by focusing mainly on delivery of services to people rather than business models. Moreover, there is a change in the role of citizens in society from only describing the needs, desires and expectations in service design to acting as collaborative members in the design, production and provision of public services (Botero et al., 2012). This approach provides deeper levels of satisfaction and well-being among citizens who benefit from public services. Sangiorgi (2011) named this evolution as ‘design for services’ and described the transformative role of citizens from being a passive user to an active collaborator in the public.

In service design literature, the well-being of people is mainly considered in healthcare and educational settings (Bibby et al., 2009; Harari et al., 2007; Lin et al., 2011; Kimbell, 2009; Ostrom et al., 2010). This study focuses on the well-being of all citizens in ‘age-friendly’

cities. It aims to improve citizens' welfare while enhancing access, quality and delivery of sustainable services in urban areas. As Parker and Heapy (2006) stated, "the common challenge of service [is] in thinking about how to transform public services" (p. 8). Determining the appropriate tools, techniques and methods in identifying the characteristics of the citizens, urban environments and touch points are crucial for the satisfaction and well-being of citizens. Since the citizens have diverse physical characteristics and needs, expectations and desires as well as social status, a priority setting should be provided for the diverse population.

Innovation in the service sector firstly emerged in the product sector and the researchers mostly focused on the involvement of the customers in the design of technology-based products (Alam & Perry, 2002; Edvardsson et al., 2006; Kristensson et al., 2008; Kuusisto & Kuusisto, 2010). Innovation in the public sector also attracted the attention of the researchers who concentrated in various activities ranging from healthcare to software services (Kuusisto et al., 2013). The focal point in urban service design is the satisfaction and well being of the citizens. Therefore, collaborative approach is appropriate for designing age-friendly cities.

Age-friendly cities

One of the fast growing population groups living in the urban setting is the aging people. In the United Nations' *Report of the Second World Assembly of Aging* (2002), the aging populations in developed countries living in urban areas were projected as 82% of the total population whereas in developing countries less than half of the population will be living in rural areas by 2025. Based on these data, the governments' representatives decided to adopt *the 2002 Madrid International Plan of Action on Ageing* (MIPAA) during the assembly to promote the development of societies for all ages. The MIPAA required the societies to determine the needs of the aging population as: "older persons and development; advancing health and well-being into old age; and ensuring, enabling and supportive environments" (United Nations, 2002, p. 1).

As an execution of the MIPAA, the World Health Organization (WHO) conducted a research for developing the guidelines of age-friendly cities in 2005 at *XVIII IAGG World Congress of Gerontology and Geriatrics* in Brazil. After a series of meetings in different parts of the world, research was conducted by WHO in 33 cities with the support of both governmental and non-governmental organizations and academics (WHO, 2007). The research showed that there were 82 guidelines under eight main topics, including: outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, and community and health services. In conjunction with these findings, Plouffe & Kalache (2011) from WHO Headquarters developed the *Global Age-Friendly Cities Project*.

In 2010, *The WHO Global Network of Age-friendly Cities and Communities* was established to provide a medium where cities and communities could exchange their experience and learn from each other worldwide. Membership of this network requires a lifetime progress of the member cities in five-year cycles, since the needs and wishes of the citizens might change continuously with the innovations and applications in different aspects of life. Self-motivation and self-assessment are the main objectives of the local authorities to provide the needs of the population.

Recently, age-friendly community initiatives were developed in Canada, Spain, Brazil and Australia while deeply focusing on the successful implementations of the age-friendly city guidelines. As Plouffe & Kalache (2011) highlighted, the themes that were developed by WHO in the *global age-friendly cities guide* (WHO, 2007) should be the common denominator in all cities while the implementations of the policy tools should be determined by the local governments. As an example, Sao Paulo in Brazil, with a population over 9 million, has conducted a pilot study in a municipality for strategy development that served as a model for the other municipalities. However, two municipalities, as the basis for all, produced the strategy for development of Andalusia in Spain. Consequently, population of the cities is a major factor in policy development in determining the relevant factors.

Also, an age-friendly New York project where the academic coordination was conducted by the New York Academy of Medicine in close consultation with the Mayor's Office included an outstanding group of professionals from the fields of government, business, architecture, law, housing, technology, academia, and others (Age-Friendly NYC: A Progress Report, 2011). In order to make New York City an outstanding place in which to grow old, they have created examples of innovation that served as models for cities around the world. Findings of the collaborative groups indicated 59 initiatives to make New York more age-friendly in four key areas: community and civic participation; housing; public spaces and transportation; and health and social services.

In South Australia's age-friendly guidelines and practice measures document, there are links to the WHO Age-friendly Cities Checklist (Government of South Australia, 2011). Furthermore, this toolkit also identifies information sources and technical specifications. All these efforts have been directing the cities and communities to determine their developmental progress through service design not only with the physical environment but also the social environment of people of all ages.

Research approach

The focus of this study is to build a public service design framework as an innovative management tool to be used in decision-making in the urban areas for age-friendly cities. A collaborative approach is used as a basis for developing a framework for public service design that focuses on identifying, describing and prioritizing citizens' activities in the urban areas. This framework is built through the reflexive combination of the researcher's understanding and the perspectives given by all citizens in the urban areas. Firstly, the citizens of all ages completed the self-assessment tool that is based on the *global age-friendly cities guide* developed from the studies conducted in 33 cities by WHO (2007).

In this research, the aim is to develop a design framework while integrating human actors and their experiences for the satisfaction and well-being of the citizens in age-friendly cities. The users of the urban area are people at all ages and with different abilities. To ensure this variability is built into the model, user groups were formed from caregivers and service providers in the public sectors as well as academics (who develop the theories and enable knowledge transfer for implementation of services) and municipality employees who acquire the knowledge and implement the plan for the citizens. It is important to remember that the caregivers and the service providers are also the citizens, as long as they reside within the borders of the Greater Ankara Municipality.

The urban area is the built or designed environment where the public services are provided. A built environment can be a building or an open space. A transportation unit, furniture, fixture, fitting or a sign can be the designed space or the product. It is important to focus on the designed and built environments in terms of the services made available within them as well as how they interact with the citizens.

The touch points are the places and spaces where citizens experience the public services. Based on the WHO-conducted research (2007), the touch points are the eight areas of urban living: namely as outdoor spaces and buildings; transportation; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and community support and health services (see Figure 1). The research presented in this paper is based on these eight categories under two environments surrounding people: physical and social. Many of the guidelines defined under these touch points include both the physical and social environments.

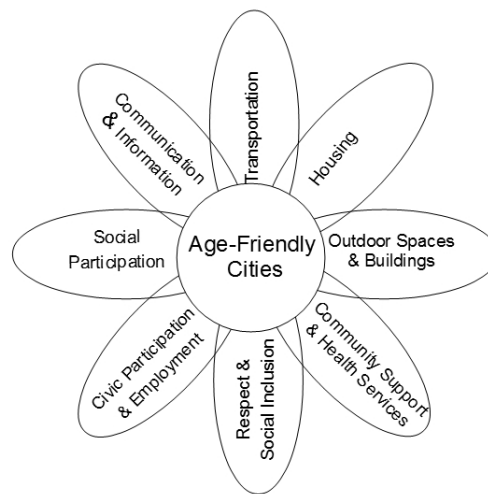


Figure 1 Age-friendly city touch points (Adapted from WHO (2007) Global Age-Friendly-Cities: A Guide, p. 1.)

Methods

Ankara is the capital of the Turkish Republic, accommodating approximately 4.8 million citizens according to the latest population research carried out by the Turkish Statistical Institution (2012). The ratio of 65+ age group living in different districts of Ankara to the total population of the city is 6.89 % (336 944 citizens). The Greater Ankara Municipality includes 25 municipality districts. The city center includes four districts and 61.3 % (206 542 citizens) of the total 65+ population of Ankara resides in those four districts. Each district municipality is directed by its own elected mayor and district parliaments, which are responsible for the services to the population residing within the district boundaries. The Greater Ankara Municipality, on the other hand, provides services where the budgets of the district municipalities are insufficient and/or where coordination among the districts is required. Most of the utility services as well as the main streets are under the responsibility of the Greater Ankara Municipality.

Ankara City Council is a civil organization consisting of all the *muhatars* (local authority for neighborhoods), the members of non-governmental organizations, non-profit organizations

and academia coming from all the districts of the Capital. The purpose of the Council is to make recommendations to the Greater Ankara Municipality about the needs and wishes of the citizens. One of the sub-groups working under Ankara City Council is the Elderly Parliament. Any member of Ankara City Council who is interested and/or related to older adults can become a member to Elderly Parliament. Finally, Ankara City Council has a Scientific Advisory Board consisting of college professors recommended to the Council from the different universities of Ankara.

The Greater Ankara Municipality also provides social services to the citizens. The Municipality has established cultural centers and Older Adult Care Centers all around the city. The citizens can become members of these centers without any fees or premiums and may attend many cultural and entertainment activities organized by the social workers of the Municipality.

The samples of this research were randomly selected among the members of the Elderly Parliament (26), the members of the Older Adult Care Centers and their relatives (113+51), the members of the Scientific Advisory Board (8) and the employees of the Greater Municipality of Ankara (53). The sample comprised 251 citizens of all ages. However, 87 (34.7.3%) of this sample group were also service providers of some kind to the citizens and 165 (65.3%) were non-service providers (see Figure 2.). Among the participants, 83 (50.6%) of the non-service providers and 51 (58.6%) of the service providers were female.

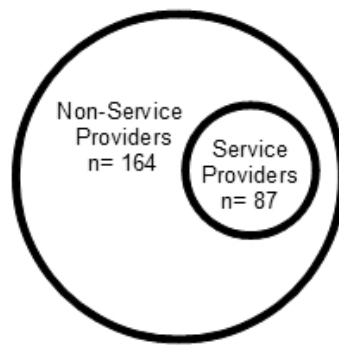


Figure 2 Samples (n=251) of this study. They were all citizens of Ankara and some of them were service providers.

Firstly, the subjects were asked to complete the self-assessment tool that is based on a checklist from the studies conducted in 33 cities by WHO (2007). The checklist entitled Global age-friendly cities: a guide was based on studies that were conducted worldwide with senior citizens, service-providers and academics in relevant fields determined in the 2005-2006 study (WHO, 2007).

The checklist is composed of 82 items under eight themes as the core features of an age-friendly city. The main idea behind these guidelines was to determine the overlapping features in different urban environments and WHO mentioned that these core values came up repeatedly. However their importance could change from community to community. Moreover, 82 items are too many for the local authorities to provide as a service to the citizens, all at once. Each local authority is expected to determine its most important core features among these 82 items and work on them with a five year strategic plan. Therefore, the objective of this study was to find out which core features were more important to

specifically Greater Ankara Municipality, as a case. The importance of each core feature was ranked on a four-point scale from no contribution to significant contribution (0 points = no/not at all; 1 point = limited/some contribution; 2 points = adequate contribution/satisfactory; 3 points = significant contribution). The scale was not as five, seven or eleven points because the guidelines determined by WHO in the 2005-2006 studies were common points for all cities and expected to be useful for developing an age-friendly city (WHO, 2007).

The initial challenge was to determine the features that can be evaluated as the components of an age-friendly city. The first step in simplifying the checklist was to find and exclude the features that were not depicting the core features of an age-friendly city for Ankara citizens. As Tabachnick & Fidell (1996) claimed when features are at the extreme ends of a scale, the actual variability in features may not be captured and their correlations are very low with the other features. Correlation matrix was used to determine if the strength of the correlations among the features were reliable for factor analysis. No feature was found to have correlation below 0.30 with all the other features. Therefore, all items were included in the analysis.

The second step was to conduct the Principal Component Analysis method for determining the number of factors that are important for an age-friendly Ankara city. Extraction of the principal component resulted in a variance maximizing (varimax) rotation of the original feature space because the criterion for the rotation is to maximize the variance of the new variable called the factor. The variances extracted by the factors are called eigenvalues. Features that had relationships 50% and above with the factor component were thought to best describe the factor and its related scale. The features that were loaded 0.50 or more were included in the final list.

Results

Principal Component Analysis on the 82 features showed that 12 factors had eigenvalues greater than 1.00. This analysis followed by varimax rotation resulted in 12 factors with eigenvalues greater than 1. Including factor loadings ± 0.50 , there were 7 factors after rotation with varimax with Kaiser normalization (see Table 1). The priority list involves independently the six touch points depicted in Figure 1. Only in the third factor, civic participation and employment is integrated with respect and social inclusion touch point. The key findings are detailed below:

Priority list (ranking from high to low)	No of features
1. Adequate community support and health services	12
2. Adequate transportation services	14
3. Civic participation and employment; and, respect and social inclusion opportunities	8 and 4
4. Adequate communication and information facilities	9
5. Available outdoor spaces and building facilities	7

6. Social participation opportunities	8
7. Sufficient and affordable housing services	7

Table 1 The priority list for the age-friendly city of Ankara

The primary factor (eigenvalue=39.29, 12.21% of total variance) is composed of twelve positively loaded community support and health services features.

- » The primary criterion for citizens is the accessibility to clear information about the health and social services for older people (0.816).
- » The next three criteria are about service accessibility as:
 - minimized economic barriers (0.802);
 - respectful and sensitive administrative and service personnel (0.792);
 - coordinated and simple service delivery (0.776).
- » The fifth criterion is related to emergency planning and care that includes older people while taking into account their needs and capacities in preparing for and responding to emergencies (0.772).
- » The following three criteria are also related to service accessibility as:
 - to all well-distributed health and social services in the city (0.747);
 - residential care facilities integrated to the services and larger community (0.728);
 - adequate access to the burial spaces (0.717).
- » The final criteria are related to the offer of services as:
 - the services are conveniently located and accessible by all means of transportation (0.717);
 - support and encouragement of services by voluntary citizens of all age (0.693);
 - provision of home care services including personal care and housekeeping (0.690);
 - provision of an adequate range of health and community support services (0.680).

The second factor (eigenvalue=4.98, 11.82% of total variance) is composed of 14 positively loaded transportation features.

- » The first four criteria are related to roads as:
 - well-maintained roads with covered drains and good lighting (0.766);
 - well-regulated traffic flows (0.763);
 - well educated drivers on roads; and, roads that are free of obstructions (0.743).
- » The fifth criterion is related to taxis that are accessible and affordable with courteous and helpful drivers (0.719).
- » The sixth criterion is related to driving competence that is provided to all drivers through education and refresher courses (0.708).
- » The following two criteria are related to parking and drop-off areas that are safe, sufficient in number and conveniently located (0.685); and, availability of areas for people with special needs is respected (0.682).
- » The ninth criterion is related to the availability of voluntary transport services where public transportation is limited (0.658).
- » The following criteria are related to design and organization of transportation facilities as provision of complete and accessible information to users about routes, schedules and special facilities (0.641):
 - stopping of drivers at designated transport stops and beside the curb to facilitate boarding and to wait for passengers to be seated before driving off (0.565);

- conveniently located, accessible, safe, clean transport stops and stations that are well-lit and well-marked with adequate seating and shelter (0.545);
- availability of specialized transportation for disabled people (0.532);
- accessibility to all city areas and services by public transport, with good connections and well-marked routes and vehicles (0.517).

The third factor (eigenvalue=4.05, 11.41% of total variance) is composed of 8 positively loaded civic participation and employment, and 4 positively loaded respect and social inclusion features.

- » The first criterion is related to the civic participation theme as the encouragement and facilitation in membership of older people in decision-making bodies in public, private and voluntary sectors (0.773).
- » The following seven criteria are related to the employment theme as:
 - providing training in post-retirement opportunities for older workers (0.769);
 - promotion and support for self-employment options for older people (0.768);
 - promotion of a range of flexible and appropriately paid opportunities for older people to work (0.732);
 - well-promotion of the qualities of older employees (0.710);
 - no discrimination on the basis of age in the hiring, retention, promotion and training of employees (0.706);
 - availability of a range of flexible options for older volunteers with training, recognition, guidance and compensation for personal costs (0.658);
 - adaptation of workplaces are to meet the needs of disabled people (0.644).

The following four criteria are related to the respect and social inclusion theme.

- » The ninth criterion is related to economic inclusion as older people who are less well-off should have good access to public, voluntary and private services (0.620).
- » The following criterion involves community inclusion as the recognition of older people by the community for their past as well as their present contributions (0.605).
- » The eleventh criterion involves public education with schools providing opportunities to learn about ageing and older people, and involve older people in school activities (0.565).
- » The last criterion involves inter-generational interaction in community-wide settings, activities and events that attract all generations by accommodating age-specific needs and preferences (0.502).

The fourth factor (eigenvalue=3.14, 8.63% of total variance) is composed of 9 positively loaded communication and information features.

- » The primary criterion involves printed information (including official forms, television captions and text on visual displays) that has large lettering and the main ideas are shown by clear headings and bold face type (0.795).
- » The second criterion involves wide public access to computers and the Internet, at no or minimal charge, in public places such as government offices, community centers and libraries (0.794).
- » The third criterion involves oral communication in public and commercial services providing friendly, person-to-person service on request (0.787).
- » It is followed by automated communication and equipment (such as mobile telephones, radios, televisions, and bank and ticket machines) that have large buttons and big lettering (0.754).
- » The fifth criterion involves people who are at risk of social isolation and their need to receive one-to-one information from trusted individuals (0.728).

- » The following four criteria are related to properties of information offer as:
- » regular and widespread distribution of information is assured and coordinated, centralized access is provided (0.690);
 - oral communication accessible to older people is promoted (0.687);
 - regular information and broadcasts of interest to older people are offered (0.649);
 - a basic, effective communication system reaches community residents of all ages (0.629).

Fifth factor (eigenvalue=2.74, 7.60% of total variance) is composed of seven positively loaded outdoor spaces and buildings features.

- » The primary criterion points the public toilets (outdoors and indoors) in being sufficient in number, clean, well maintained and accessible (0.846).
- » The second criterion is related to building features that are well-signed outside and inside, with sufficient seating and toilets, accessible elevators, ramps, railings and stairs, and non-slip floors (0.740).
- » The third criterion is related to service as the provision of special customer service arrangements, such as separate queues or service counters for older people (0.723).
- » The fourth criterion is related to roads where drivers should give way to pedestrians at intersections and pedestrian crossings (0.722).
- » The fifth criterion is about the situated together location and accessibility of service areas (0.681).
- » The last two criteria are related to safety of outdoor spaces by providing good street lighting, police patrols and community education (0.657); and non-slip pavements that are wide enough for wheelchairs and have dropped curbs to road level (0.558).

The sixth factor (eigenvalue=2.25, 7.09% of total variance) is composed of eight positively loaded social participation features.

- » The primary criterion is the ability to attend activities and events alone or with a companion (0.721).
- » The second criterion involves the wide range of events and activities that appeal to a diverse population of older people (0.674).
- » The third criterion is about providing good information about activities and events, including details about accessibility of facilities and transportation options for older people (0.668).
- » The fourth criterion is about affordability of activities and attractions, with no hidden or additional participation costs (0.663).
- » Also, events should be held at convenient times for older people (0.642).
- » The sixth criterion addresses isolation and points that there should be consistent outreach to include people at risk of social isolation (0.635).
- » Also, gatherings should foster community integration by including older people with events that are held in various local community spots, such as recreation centers, schools, libraries, community centers and parks (0.612).
- » The last criterion describes the facilities and settings for events and activities as venues that are conveniently located, accessible, well lit and easily reached by public transport (0.578).

The seventh factor (eigenvalue=1.94, 5.86% of total variance) is composed of seven positively loaded housing features.

- » The first three criteria describe housing as:

- being well-constructed and providing safe and comfortable shelter under all weather conditions (0.720);
- clean, well-maintained and safe public and commercial rental housing (0.708);
- with interior spaces and level surfaces that allow freedom of movement in all rooms and passageways (0.684).
- The following criteria of the seventh factor are about providing affordability and sufficiency in housing for frail and disabled older people, with appropriate local services (0.628); availability of home maintenance and support services (0.627); availability of affordable home modification options and supplies with providers that understand the needs of older people (0.594); and housing that is available in areas that are safe and close to services and the rest of the community (0.545).

Service design model for age-friendly cities

Considering the priority list as a basis, a large number and wide variety of decisions are required in designing and delivering service for age-friendly cities. First step for building a service design strategy, each item on the priority list has to be defined and how it drives design decisions for new and redesigned services should be collaboratively described. The definition of each item has to be clarified both for service providers and citizens of the city at the strategic level. This definition should not only involve the how and what of public service design for age-friendly cities, but also should ensure the integration between how and what (see Figure 3). Developing a service design strategy involves both process driven public services and product services.

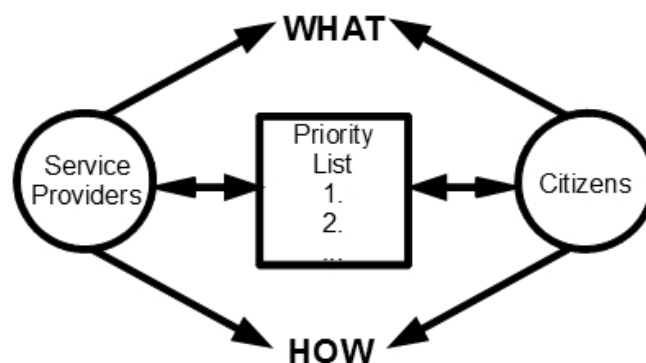


Figure 3 Building the strategy level in service design for age-friendly cities

Identifying the participants is an important issue both for service provider and citizen groups at the strategic level. Each group should be the representative of the general population. The semi-structured interviews should be conducted for each priority in the list. The primary questions should be addressed to the participants as an example “How do you access to information about health and social services within this neighborhood?” (priority 1, item1). Then follow-up questions as “Is information accessible, useful, easy to understand, difficult with automated systems, in print format and size?” should be asked. After the clarification of each item on the list, the delivery of services for age-friendly cities should be encountered. The priority list serves as the foundation upon which the components of the service delivery system are built. It also provides a framework for evaluating services on an ongoing basis as the list of services change (see Figure 4).

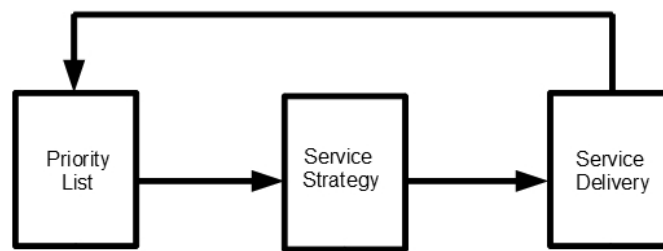


Figure 4 Proposed service design planning model.

Conclusions

Many age-friendly community models were developed on extensive research on older adults and their experience, as Lui et al (2009) concluded in their review of international literature on age-friendly communities. Many of them, such as the WHO global age-friendly cities project, used focus groups, interviews and surveys in identifying the essential features of an age-friendly city. Some others, like the age-friendly New York project, involved older adults as active participants in developing the initiatives for an age-friendly community and environments. All of these studies pointed out that involving older adults is a key issue for desirable community services and support. Furthermore, wide collaboration groups including service providers, voluntary organizations, and citizens of all ages are essential. Although there is a substantial variation across cities, local authorities (municipalities) have a major role in creating age-friendly cities. This study lies parallel to the extensive research that supports the role of local authorities in building an age-friendly city.

The literature supports the variations in the priorities of the initiatives, as the results of the characteristics of the cities are mainly shaped by the population of the city. While all of these models are useful benchmarks, we believe that each city needs to prioritize its development initiatives according to its specific needs. For the Greater Ankara Municipality, the primary factor was composed of the community support and health services features.

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The identification of innovative customer groups for collaborative design activities

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Abstract

This paper integrates relevant concepts from the literature to identify innovative customer groups for collaborative service design activities. It is proposed that the central concepts characterizing an innovative customer are innovation-related benefit, ahead of trend, use experience, and knowledge of the field. Measures are provided that underpin the integrated concepts and thus allow for the future testing and refinement of the proposed framework towards a more standardized customer screening approach. The need for open innovation platforms is identified to enhance customer participation beyond customer engagement behaviour. The paper contributes to the growing knowledge of the requirement to systematically select and involve specific customer groups in service design.

KEYWORDS: service design, user innovation, lead user theory

Introduction

Innovation and design theories and practices are constantly moving towards a more open process that allows firm-external stakeholders to contribute actively. This refers specifically to customers because it is increasingly recognized that they should be defined as informed, networked and empowered value (co-)creators rather than as passive recipients of value. Thus, recent concepts including ‘co-design’ (Sanders & Stappers, 2008), ‘open-innovation’ (Chesbrough, 2003), ‘co-creation’ (Prahalad & Ramaswamy, 2004), ‘user innovation’ (Lüthje, 2004), and ‘democratized innovation’ (von Hippel, 2005) share a common theme namely that of using customers more actively in innovation and design activities.

However, despite the increasing recognition of the value of active customer involvement, there remains a lack of understanding of what kinds of customers should be selected and systematically involved in service design activities. Specifically, research findings suggest that depending on the design task to be addressed, firms should clearly identify defined user groups rather than to randomly select customers as potential co-designers or co-innovators (von Hippel, 1988; Lüthje, 2004; Matthing *et al.*, 2006; Lettl, 2007; Magnusson, 2009; Schuhmacher & Kuester, 2012). Most studies have applied the lead user concept developed by von Hippel (1977; 1986) to identify innovative users (e.g. Lilien *et al.*, 2002; Franke *et al.*, 2006; Lettl *et al.*, 2006; Matthing *et al.*, 2006; Lettl, 2007; Oliveira & von Hippel, 2011). However, research findings suggest that the lead user concept does not apply in all contexts and is not exhaustive in defining the characteristics and measures of innovative users (Lüthje, 2004; Kristensson & Magnusson, 2010; Skiba, 2010; Schuhmacher & Kuester, 2012). Hence,

by integrating relevant concepts across disciplines we identify innovative customer groups for collaborative service design activities. This can assist firms to identify and subsequently to involve specific customer groups in service design projects.

The remainder of this paper is structured as follows. First, by drawing upon the user innovation, customer involvement, and relationship marketing literatures, relevant concepts are identified and discussed. This section additionally includes potential questionnaire items that can be used to measure the integrated concepts. Then, tools necessary for enhancing customer participation that will go beyond customer engagement behaviour are discussed. The paper concludes by highlighting limitations and providing directions for testing and refining the proposed concepts towards the development of a more generalized framework.

The importance of customer involvement in service design

Although earlier service design processes were based on particular perspectives, later developments have usually drawn on a service and marketing perspective as defined by service-dominant logic and the Nordic School of Services (e.g. Ostrom *et al.*, 2010; Stickdorn & Schneider, 2010; Meroni & Sangiorgi, 2011; Patricio *et al.*, 2011). A central assumption of these researchers is that the production and consumption of a service occurs in an open system in which the customer takes an active standpoint rather than in a closed production process where the customer perceives goods or services as outcomes (Gummesson, 2006; Maglio & Spohrer, 2008). Grönroos (2006; 2011; 2011) goes further by claiming that it is the customer who decides if value is created or not and that the firm can either take a supportive role as a value facilitator or an interactive role as a value co-creator. This means that the central aspect of value creation lies within the customer's sphere (Prahalad & Ramaswamy, 2004; Prahalad & Ramaswamy, 2004; Lusch *et al.*, 2008; Payne *et al.*, 2008), and customer information consequently should be a central aspect in the design of new services.

Noting the central position of the customer within the service system, service design and innovation are increasingly discussed as collaborative activities with customers rather than as firm-internal research and closed development processes that produce offers for customers (MacGregor, 2008; Ostrom *et al.*, 2010; Zomerdijk & Voss, 2010; Bogers & West, 2012). In this context, Ostrom *et al.* (2010, p.17), have defined service design as “... *a collaborative, cross-disciplinary activity*” and the required approach to it as “... *the orchestration of clues, places, processes, and interactions that together create holistic service experiences for customers, clients, employees, business partners, or citizens*”.

The focus on the orchestration of clues, places, processes, and interactions highlights that although customers are actively integrated within the service system, it is only a personal pathway or a so-called ‘customer journey’ through the service system rather than the whole system itself that is experienced by them. Still, service design requires that a user-centred design view be taken because customers can be active players in the value-creation process and can thus influence where, when and how value is generated (Wikström, 2008; Helkkula & Kelleher, 2010). The challenge for service design therefore is 1) to identify interactions through which customers can participate in value co-creation in different forms and different intensities (Morelli, 2009), and 2) to arrange the multiple interactions towards a holistic service experience without there being a separation from the overall service system (Gummesson, 2002; Gummesson, 2008).

Furthermore, taking a user-centred design view means that service design needs to begin with an understanding of the customer's value-creating processes (Payne et al., 2008). Yet, new innovations have often been suggested to fail due to so-called 'sticky knowledge', which refers to the argument that the information as to what the customer wants resides with the customer while the information that leads to a solution as to how to satisfy those needs lies with the firm (Thomke & von Hippel, 2002). It is for this reason that active customer involvement in the form of 'co-designers' or 'co-creators' is increasingly discussed as a critical factor for the effective design of services (Prahalad & Ramaswamy, 2004; Ramaswamy, 2008; Sanders & Stappers, 2008; Ojasalo, 2009; Steen *et al.*, 2011; Szebeko, 2011).

Concepts that underpin innovative customer groups

Despite the recognition that customer involvement can be an effective approach in service design projects, little guidance is given as to the specific groups of customers that should be targeted for such projects. Specifically, the question that arises is who is to be involved in design processes, since firms usually have access to a large and diversified customer base. This is an important question because research findings indicate that only certain users are able to develop and/or are willing to share new service or product ideas (Lüthje, 2004; Lettl, 2007; Witell et al., 2011). Addressing this gap in knowledge, we identify and integrate relevant concepts from the literature that can be used to systematically identifying and subsequently involving selected customer groups for service design purposes. In the following, we discuss the integrated concepts in detail and provide measures that underpin these concepts.

Lead user characteristics

The arguably most popular approach for identifying specific customer groups for innovation purposes is the lead user concept. Lead users are "*... users whose present strong needs will become general in a market-place months or years in the future*" (von Hippel, 1986, p. 791). Two central characteristics distinguish lead users from other customer groups, namely being ahead of trends and expecting high benefits from innovation (Schreier & Prügl, 2008). These characteristics typically refer to a small group of users, who have a strong ability and a need to identify novel product attributes and should thus be identified, supported, and integrated into innovation practices (von Hippel, 1986; von Hippel, 1988; von Hippel, 2001).

A number of studies tested lead user theory quantitatively and provided strong empirical support for the commercial attractiveness of innovations developed by lead users (Franke *et al.*, 2006; Schreier & Prügl, 2008; Schuhmacher & Kuester, 2012). Specifically, the high innovation-related benefit characteristic was found to be positively associated with innovation likelihood, while being ahead of trends was found to be positively associated with innovation attractiveness (Morrison *et al.*, 2000; Franke & Shah, 2003; Lüthje, 2004; Franke *et al.*, 2006; Schreier & Prügl, 2008). These findings hold true across different settings and markets, including diverse consumer goods (Lüthje, 2004; Franke *et al.*, 2006; Nishikawa *et al.*, 2013), information systems (Morrison *et al.*, 2000), software industry (Urban & Von Hippel, 1988), and technology services (Matthing *et al.*, 2006). Thus, particularly within unmanageably large user populations, the systematic identification and integration of lead users can be an effective approach, because this type of users typically have a strong ability to contribute to innovations that are commercially attractive as well as are driven by strong

intrinsic motivation in the form of a high expected benefits from their investment in an innovation activity.

However, no clear measurements that underpin lead user characteristics have been provided. For example, while Gruner and Homburg (2000) used a two-item measure for determining lead user characteristics, namely “customers’ benefits provided by the new product” and “customers’ recency of need for the new product”, Lüthje (2004) used a two-item measure for ‘innovation related core benefit’ and a four-item measure for ‘commitment to product field’. With the purpose of developing a more robust measurement, this paper distinguishes between users’ expectations of innovation-related benefits and the users being ahead of trends.

Firstly, innovation-related benefits is measured by modifying the items that were used and validated by Franke *et al.* (2006). As a result, the following five-item measure is proposed as a measure of lead users’ innovation-related benefits:

Table 1: Innovation-related benefits*

Construct items:	Direction of items
User is dissatisfied with the existing services or aspects of existing services.	Reflective
User has needs which are not covered by the existing services.	Reflective
User has approached the firm with ideas for improving existing services.	Reflective
User is dependent on the use of the services.	Reflective
User would benefit significantly from any improved or new service.	Reflective

*All items are measured with a five-point Likert item scales with “strongly disagree” (1) and “strongly agree” (5) as anchors.

Secondly, to identify users that are ahead of trends, a number of studies suggested the use of the technology readiness index (TRI) (Matthing et al., 2006; Skiba, 2010). Noting that the number of technology-based products and services have grown substantively (IfM & IBM, 2008; Ostrom *et al.*, 2010), Parasuraman (2000, p.308) defined technology-readiness as “... *people’s propensity to embrace and use new technologies for accomplishing goals in home life and at work*” and developed a refined multiple-item technology readiness index (TRI) to measure people’s readiness to embrace new technologies.

In the context of technology-based services, Matthing et al. (2006) used the TRI and found that technological readiness was positively correlated with propensity to actively seek new technologies and to solve problems related to them as well as a willingness to participate in the process of new technology-based service development. Following these findings and considering that service innovation requires users to be increasingly technology-advanced (IfM & IBM, 2008; Ostrom *et al.*, 2010), it is proposed that the TRI can be an effective measure for identifying service users that are ahead of trends also in services that go beyond technology-based services (see also Skiba, 2010). Hence, the following four-item measure derived from Parasuraman and Colby (2001) is suggested for the identification of users that are ahead of trends:

Table 2: Ahead of trend*

Construct items:	Direction of items
User enjoys thinking about novel technology-based ideas and solutions.	Reflective
User comes up with new solutions to problems he/she experiences with new technologies.	Reflective
User enjoys finding solutions to problems that accompany new technologies.	Reflective

User actively searches for updates and launches of new technology-based services and products.	Reflective
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*All items are measured with a five-point Likert item scales with “strongly disagree” (1) and “strongly agree” (5) as anchors.

The potential effects of the lead user characteristics are depicted in Figure 1. Whereas users with higher expectations of innovation-related benefit are more likely to innovate, users that are ahead of trend tend to contribute to the development of ideas that are more attractive (Franke *et al.*, 2006). Users that follow the trend (instead of being ahead of trend), on the other hand, might not lead to innovation attractiveness. These users can be referred to as ‘ordinary users’. Finally, users that are far ahead of trends but have hardly any benefit from innovating might be successfully integrated through incentive-related benefits such as idea contests or design competitions (cf. Füller *et al.*, 2007; Schuhmacher & Kuester, 2012).

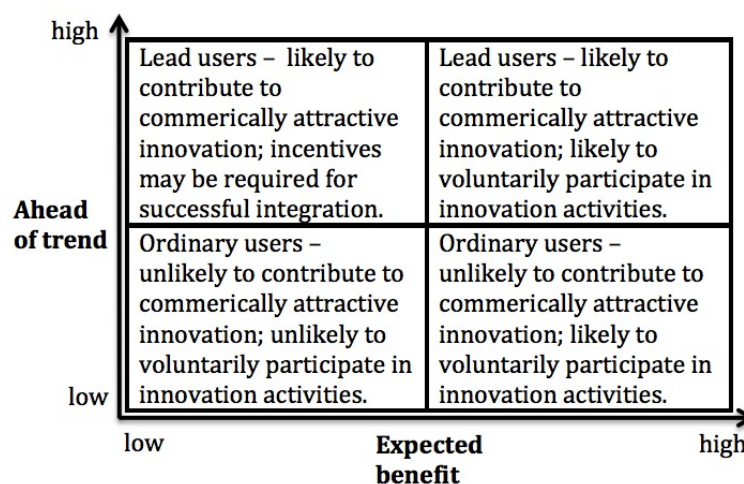


Figure 1: Potential effects of lead user characteristics; source adapted from Franke *et al.* (2006, p.311).

Use experience and knowledge of the field

In addition to lead user characteristics, use experience is seen as a critical component to be used to distinguish innovative users from non-innovative users (e.g. Gruner & Homburg, 2000; Lüthje, 2004; Matthing *et al.*, 2006; Lettl, 2007) because experience is essential in establishing a knowledge platform for mutual learning and innovation (Lundvall, 1993; Wikström, 1996; Ojasalo, 2009). This suggestion is supported by Grönroos & Ojasalo (2004), who proposed that through on-going interactions during a relationship the customer can gain more knowledge of the service provider and service processes, and the service provider can learn more about the customers’ competences as well as the customers’ specific needs. Hence, on-going interactions and relationship continuity between a customer and the firm can create an important source of collaborative knowledge and innovation.

Noting the importance of use experience, Lüthje (2004) included the item “intensity of use” into the construct ‘commitment to product field’, while Gruner and Homburg (2000) used a ‘closeness of relationship’ measure including the items “frequency of interaction with customers outside new product development project” and “duration of business relationship with customers”. This paper adopts the measure suggested by Gruner and Homburg (2000) because it allows the determination of both the intensity and duration of use. Thus, ‘relationship duration’ and ‘interaction frequency’ are included as measures for determining users with high use experience:

Table 3: Use experience*

Frequency of service use
Total period of service usage

*Frequency of service use is measured with a scale ranging from “daily” (1) to “never” (5).

Total period of service usage is measured by the total use duration of services in years.

An additional factor that needs to be considered when customers are to be involved in service design and innovation practices is knowledge of the field. Schreier and Prügl (2008) showed that consumer knowledge and use experience are only moderately correlated and thus should be seen as two independent concepts. While use experience refers to learning from experience and product/service usage, knowledge of the field stems from various sources beyond product/service usage (Schreier & Prügl, 2008).

Further, both concepts seem to impact the quality of the developed ideas differently. The positive impact of high use experience on idea quality has been empirically supported by a number of studies (e.g. Gruner & Homburg, 2000; Lüthje, 2004; Matthing *et al.*, 2006; Schuhmacher & Kuester, 2012). A high level of knowledge of the field, on the other hand, was found to negatively influence the novelty/originality of a developed idea (Matthing *et al.*, 2006; Magnusson, 2009; Schuhmacher & Kuester, 2012). This is because the development of radical ideas can be constrained by too much knowledge about technology restrictions and potential feasibility (Matthing *et al.*, 2006; Magnusson, 2009; Kristensson & Magnusson, 2010).

Knowledge of the field is measured by expanding Lüthje’s (2004) four-item measure for ‘commitment to product field’ through the integration of additional items suggested by Skiba (2010). As a result, the following eight-item measure is proposed as measure of knowledge of the field:

Table 4: Knowledge of the field*

Construct items:	Direction of items
User knows how services and requests are processed.	Reflective
User has profound knowledge of the used key-technologies.	Reflective
User knows about all details/facets/aspects of the offered services.	Reflective
User has a good understanding of which elements make up a good service.	Reflective
User knows about required resources to deliver a service.	Reflective
User has profound knowledge of the services and facilities that can be used.	Reflective
User knows how the existing services could be improved.	Reflective
User is well informed about the latest services.	Reflective

*All items are measured with a five-point Likert item scales with “strongly disagree” (1) and “strongly agree” (5) as anchors.

Similarly to the lead user characteristics, the potential effects of use experience and knowledge of the field are illustrated in Figure 2. First, a high level of use experience is suggested as an important selection criterion when customers are to be involved in service design and innovation activities (cf. Matthing *et al.*, 2006; Schreier & Prügl, 2008). Further, users that obtain high levels of knowledge of the field might be not be suitable for radical innovations but rather for incremental innovations such as service improvements or service line extensions. This is because radical innovations are unlikely to be developed by users with high knowledge of the field as they may be restricted in their innovative thinking by what it is that they know (Kristensson & Magnusson, 2010). Thus, the involvement of users with

high knowledge levels may result in more incremental ideas while the involvement of users with low knowledge levels may result in more radical ideas.

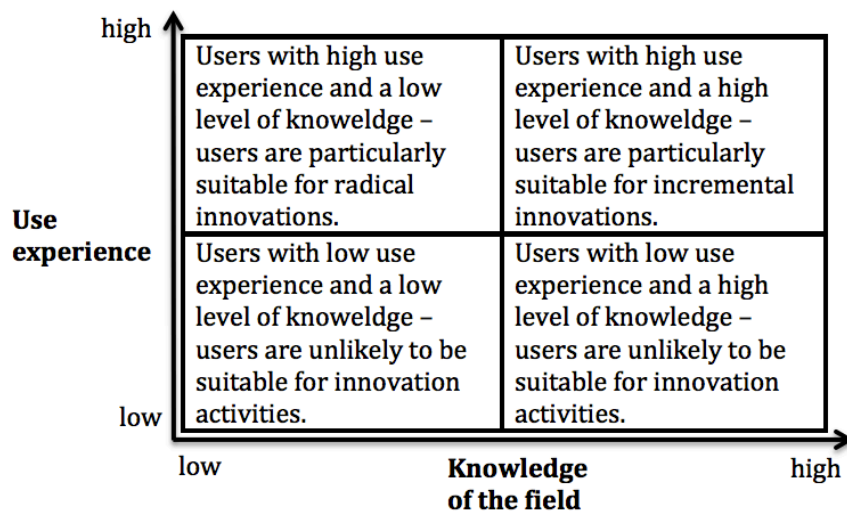


Figure 2: Potential effects of use experience and knowledge of the field; source adapted from (Kristensson & Magnusson, 2010, p.156).

Enhancing customer involvement through open innovation platforms

Apart from systematically identifying suitable customers, firms additionally need to enhance customer participation through the provision of open innovation platforms. For example, Füller et al. (2007) identified that within online communities not only the need for product improvement but also excitement seems to drive collaborative innovation. The authors found that a compelling co-creation experience, determined through a feeling of task enjoyment, competence and autonomy, is important for enhancing innovation as these factors can have a positive impact on the quality and amount of participants' contributed content and interest in future participation in online innovation platforms (Füller et al., 2011). Hence, firms might foster customer involvement by developing online platforms such as My Starbucks Idea, Dell IdeaStorm, and Ideasbrewery or by launching design competitions such as OpenIdeo and Challenge.gov.

On the other hand, Lüthje (2004) found that even when customers have ideas for innovations, typically only a marginal fraction share their innovation-related knowledge. This finding can be explained by customer engagement behaviour which suggests that customers who are voluntarily and actively participating in innovation and design activities are highly engaged in the firm's activities because they at times spend a large amount of time, effort and even money in their engagement behaviours (Birkinshaw et al., 2007; Van Doorn et al., 2010). As stated by Van Doorn *et al.* (2010, p.260) "... [h]ighly engaged customers can be a crucial source of knowledge, helping firms in a variety of activities ranging from ideas for design and development of new products, suggestions for modifying existing brands, and engaging in trial of beta products." This means that firms need to recognize that customers' willingness to voluntarily participate in service design does not merely include innovation-related or potential financial benefits but is additionally driven by consumer engagement, which may emerge at different levels of

intensity over time (Brodie et al., 2011). This underscores the necessity for developing open innovation platforms and within these platforms to actively identify and integrate the innovative users for design purposes (Lüthje, 2004; Birkinshaw et al., 2007).

Limitations and directions for future research

This paper discusses relevant concepts that can assist in identifying innovative customers for collaborative service design and innovation activities. However, it should be underscored that this paper is purely conceptual in its approach and thus our proposed framework needs to be tested, refined, and validated within different settings. User innovation research and specifically the identification of innovative customers are still underdeveloped in services research and largely lack theoretical underpinnings (Bogers *et al.*, 2010; Ostrom *et al.*, 2010). Thus, this paper takes an early step by conceptualising relevant customer characteristics that can for example be used in the future development of a standardized customer screening approach.

In addition, the proposed measures might not be applicable for all types of service design. It has been demonstrated that within unmanageably large user populations of a B2C setting particularly lead users are the most effective users to be incorporated in innovation and design activities (e.g. Matthing *et al.*, 2006; Schreier *et al.*, 2012; Schuhmacher & Kuester, 2012; Mahr *et al.*, 2013; Nishikawa *et al.*, 2013). Nonetheless, it should be noted that these studies predominantly examined lead users from a firm-external user innovation perspective. Therefore, apart from testing the proposed concepts, future research should additionally examine the relevance of the current framework for use in hybrid design modes where lead users work collaboratively with in-house designers (e.g. Schreier *et al.*, 2012) to assess whether the effects identified here also emerge in collaborative design activities.

Further, the effects of user characteristics or the impact of user integration into design might be different with increasing complexity of the design tasks. Although lead users are frequently observed to come up with attractive user innovations in more complex fields (e.g. Lettl *et al.*, 2006; Lettl, 2007), the benefit of actively integrating users into the design process is likely to diminish as the need for design expertise that is inherent to complex design becomes more central in achieving design success (Schreier *et al.*, 2007; Schreier *et al.*, 2012). Thus, alongside with the examination different forms of user involvement, future research should additionally investigate the influence of the design task complexity on innovation outcomes.

Conclusion

This paper adds to the current service design literature by discussing different concepts to identify innovative customer groups. It is suggested that future development of this framework can result in a standardized screening approach that will assist firms in identifying and subsequently involving specific customer groups in collaborative service design projects. As such this paper recognizes that design practices should include the identification of clearly defined user groups rather than the random selection of customers as potential co-designers.

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Starting a conversation: the need for and application of Service Design in International Development

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Abstract

International Development is concerned with the provision of public services and development programmes in contexts where resources are scarce and states are often fragile. Service design has much to offer the kinds of problems faced by International Development organisations. In this paper, we open a conversation about the need for, and application of, Service Design in International Development, focusing on two of its core principles, collaboration and user-centeredness. We also unpack some problematics that need attention when applying a Service Design approach to International Development programming.

KEYWORDS: Service Design, International Development, collaboration, user-centred, social innovation.

Introduction: A conversation opener.

“What we are beginning to see all around us – at the UN, at the World Bank, in national capitals, in research centers and universities, and in field offices – is that new opportunities for creating design space at the nexus between knowledge and action are in fact opening up. When we say ‘opening up’, we don’t mean they are naturally spreading apart like rose petals after a spring rain. We mean to imply, rather, that if you wedge a crowbar between problems and planning and exert enough force, you can just about make space for the idea of design to slip in past bureaucratic defenses to make some kind of furtive trouble.” (Miller & Rudnick, 2011, p. 14)

International Development is concerned with the provision of public services and development programmes in contexts where resources are scarce and states are often fragile. Service Design has much to offer the kinds of problems faced by International Development organisations. This is because design can fill the space between knowledge (or ‘evidence’) and action (or ‘programmes’). As the quote above illustrates, the opportunities that a design approach might create for addressing ‘wicked’ problems in International Development are slowly becoming apparent. Despite this, the need for, and application of, Service Design in particular in International Development remains relatively unexplored.

Service Design has grown in recognition and practice over the past decade. Its origins lie in being a specialism that is fundamentally concerned with the creation, development or adaptation of services to improve the customer’s experience, and their interaction with service providers. The Service Design process has become recognisable in its own right due

to its strong principles in collaborative and user-centred design approaches to create outcomes that are useful and desirable from the user's perspective. The process and its core principles often result in a programme, an initiative, or a body of research, rather than a classic service. In this paper, we refer mainly to the use of Service Design principles, processes and thinking and their application to International Development.

In light of this, we explore what Service Design might offer the International Development sector and unpack some problematics that need attention when applying it to development programming. Our thoughts here are intended as a 'conversation opener', and are framed by our complimentary perspectives on the issue. With a background in Ethnography and participatory action research, Ruth Edmonds is a Director of Keep Your Shoes Dirty, a consultancy concerned with delivering collaborative and people-centred approaches to the generation of 'local knowledge'¹ to inform the design of International Development programmes. Mary Rose Cook is a Founder of Uscreates, a socially-focused design consultancy delivering social value. The authors began working together in 2010 on a project for the Girl Effect (www.girleffect.org) to explore how new connections around the world might add value to girls' daily lives. Based in rural Uganda, our girl-led peer research approach brought together our respective experiences and skills in collaborative and Ethnographic research, co-creation and user-centred design.

In this paper, we outline how Service Design, in particular its user-centred and collaborative principles, might usefully be applied to International Development. We recognise that user-centred and collaborative approaches are not new in International Development contexts. However, we believe that when applied as part of a Service Design process, involving phases of insight gathering and iteration, there are benefits. This paper is divided into three main sections. First, we provide a picture of the International Development sector and the current lack of space for design approaches in typical development programme cycles (through which development programmes are planned and implemented). Second, we discuss how Service Design might contribute to creating social innovations in International Development contexts. Third, we explore some potential challenges Service Design faces when applied to International Development. Finally, we conclude by offering ideas for how to continue the conversation and take action.

Setting the scene: International Development & the space for design.

The term 'International Development' is used to refer to a multi-disciplinary and multi-organisational approach to the development of so-called developing world states, which is focused on improving the quality of life for citizens. International Development is generally associated with implementing long-term sustainable solutions to problems (e.g. social, environmental, economic) through building necessary capacity, therefore, differing from shorter-term approaches offered by 'humanitarian aid'.

International Development is a diverse and challenging arena in which to work. First, organisations operate across a multitude of geographical contexts culturally, socially, politically and economically, not to mention across a vast rural to urban spectrum. Second,

¹ Local knowledge', originally coined by the Anthropologist Clifford Geertz, refers to the "understanding of understandings not our own." (Geertz, 1983). Simply put, generating local knowledge means to develop an understanding of a place, a practice and so on rather than about it.

there are a huge number of themes and agendas in current development policy and practice, for example, fragile states, conflict resolution, peace and security; good governance and aid effectiveness; gender issues; environment and climate change, resources, energy and environmental sustainability; public health (especially HIV/AIDS and malaria) and; water and sanitation.² Finally, the network of development organisations is diverse, including those variously concerned with the funding, planning, and delivery of development programmes, and with different operating structures, systems, practices and politics for getting the job done, for example, Non Governmental Organisations (NGOs) and Community Based Organisations (CBOs), Foundations and Corporate Social Responsibility (CSR) initiatives, and other large development actors such as the World Bank, the UN, DFID and so on.

Within this vast and complex arena, Service Design is not widely recognised or valued as an approach for solving problems and challenges. This is evidenced by the fact that there is currently little or no space for using design tools in the programme cycle. This is because the International Development system is not typically characterised by a structure, framework and culture that is amenable to innovation. Rather, development programmes are generally planned (rather than designed), based on existing programme typologies in which standard programme approaches for commonly identified needs and problems are applied (rather than designing them specifically for the user or ‘beneficiary’).³

Figure 1 presents the typical programme cycle that exists in International Development from identifying a need or problem to addressing it in practice. Whilst this varies from organisation to organisation and place to place, the overall process is similar. First, a need or problem is identified, followed by attempts to understand it usually through assessments or baseline surveys that provide indicators for evaluating the impact of programmes subsequently implemented. For example, if the problem is poor nutrition amongst children, an assessment is conducted to learn about its extent and frequency, in other words for whom and where it is a problem (e.g. which kind of children and which geographics) and, occasionally, why it is a problem (e.g. economics, lack of education, poor agricultural methods). A programme is then planned, typically borrowing or building from existing programme models and informed by assessments and surveys. Programme typologies popular in International Development mean that a ‘plug and play’ approach to solving development problems is often the most expedient. Prevalent development problems are addressed through a formulaic approach in which tried and tested programme models are applied to common problems. Some which might be more familiar include a sponsorship approach to addressing poor school attendance (e.g. ‘sponsor a child’ type campaigns), a community sensitisation approach to tackling sexual health issues such as HIV/AIDS testing and awareness (e.g. community campaigns and bill board advertising), or a training and capacity building approach to help socially excluded individuals re-enter mainstream society (e.g. vocational skills training and apprenticeships for street children and ex-combatants). In a ‘plug and play’ approach, knowledge generated through assessments and surveys is used not as a basis for innovation, or even a design process, but to adapt existing programme models for target communities and locations (although such adaptation processes generally lack specific methods, tools and techniques). This is an ‘at best’ scenario. At worst, programme models may be applied with little attention to local cultural and social nuances, something that can make the difference between programme failure and success. In stage three, programmes are implemented. Monitoring and evaluation (M&E) takes place at

² This is not an exhaustive list. The UN Millennium Development Goals are a good starting point for understanding current themes and agendas (<http://www.un.org/millenniumgoals/>).

³ The term ‘beneficiary’ is typically used to refer to programme recipients. However, it is problematic if such programmes are viewed as public *services* in which users exert agency in a design process.

strategic points, usually programme mid and end points (Laybourn, n.d.). Evaluation approaches are overwhelmingly driven by structured, quantitative methods which do not typically elicit the kind of qualitative information which is helpful for assessing impact and informing the (re)design of programmes. Finally, best practices are gleaned through programme evaluations and serve as a basis for the development of future models.

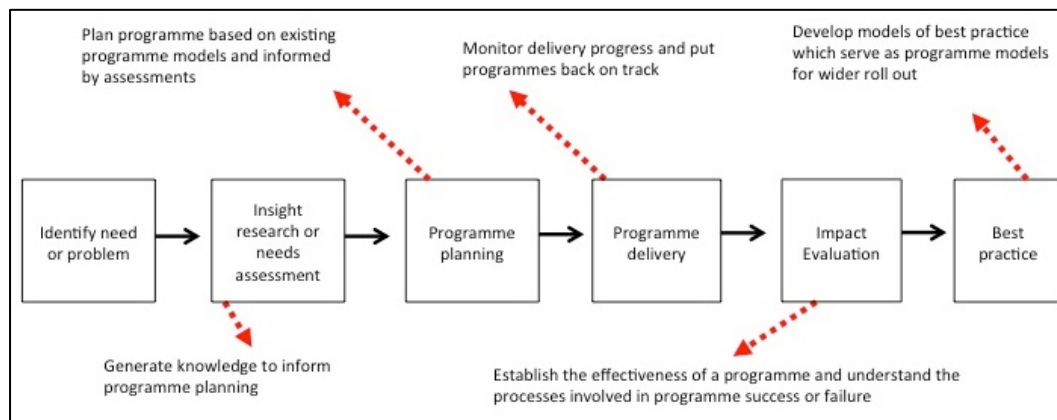


Figure 1: Typical programme cycle in International Development (adapted from Bell and Payne, 2010)

When considering the space for design in International Development, and the role of Service Design in particular, it is useful to look at how the Service Design process might be applied to this programme cycle. Like many problem solving processes, the Service Design process consists of identifying and understanding a problem, generating potential solutions, testing potential solutions, implementing the most successful ones and evaluating the outcomes. Within the Service Design community there are many visualised models of the process, including some that emphasise collaborative and user-centred principles. For example, a Design Council model presents the process as largely collaborative (Figure 2). In reality, few projects are truly collaborative at every stage, but many remain user-centred.

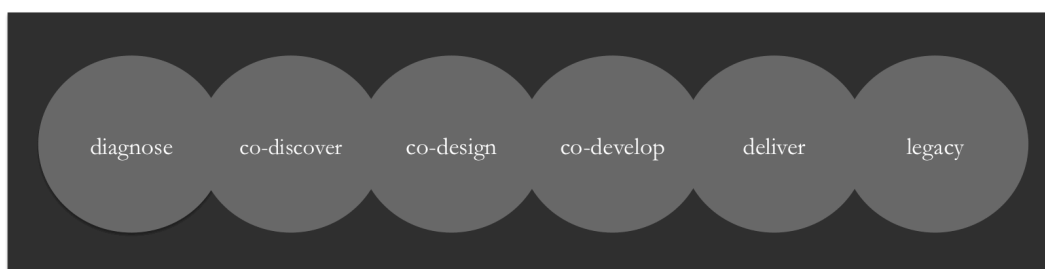


Figure 2: Design Council's Dott Methodology (Design Council, 2011)

The first stage is '*diagnose*', in which the problem or challenge is identified. The '*co-discover*' stage is when insight into the needs, motivations and barriers of the end-user in relation to the service is gathered. Service Design often involves the end user and other project stakeholders in gathering data themselves, from producing video diaries to becoming peer researchers. '*Co-design*' sees the combination of expertise from project stakeholders, including the end user, with that of the designer, to produce innovative ideas and solutions. Resulting ideas are developed as prototypes during the '*co-develop*' phase and iteratively tested and refined until they are proven to work, or not. Prototyping products and services quickly and cost-effectively is championed in Service Design. The final outcome is '*co-delivered*' and its '*legacy*' evaluated.

Delving deeper into any one of these stages it is possible to show how particular aspects of Service Design can be practically translated into an International Development setting. For example, a typical ‘*co-discover*’ phase includes Service Designers using tools such as shadowing techniques (borrowed from Ethnography), cultural probes (such as video diaries, journals and cameras) and contextual interviews to capture insights. These tools provide information about the ‘why’ something is how it is, rather than ‘what’ the situation is, which is typically the focus of an ID ‘needs assessment’ stage. The information gathered during this phase provides rich insights upon which to build interventions.

Despite the fact that Service Design is not widely recognised as having application in International Development, there has been growing interest in applying design thinking to problems in International Development. As Miller & Rudnick (2011, p.14) observe ‘the tide is turning’. Some prominent recent examples where the concept of design is making an entry into International Development practice include:

1. IDEO’s Human-Centred Design toolkit provides the International Development community with innovation tools. It has been downloaded over 100,000 times (IDEO, 2011).
2. Miller and Rudnick’s work on ‘strategic design’ at the UN, where they are piloting an evidence-based design approach to programming on Disarmament, Demobilisation and Reintegration (DDR) with the United Nations Development Programme (UNDP) (Miller & Rudnick, 2012).
3. Nesta’s work to produce the Development, Impact and You (DIY) Toolkit supporting the creation of social innovations in International Development. (NESTA, 2014)

Despite the new and exciting emergence of design in International Development circles, the key principles of a Service Design approach, collaboration and user-centredness, are not new to the sector, nor are they completely absent in current International Development practice. In the 1980s and 1990s, Ferguson (1990), Escobar (1995) and Chambers (1994, 1997) called for more locally led and defined grassroots approaches to development and Ethnographic research to understand and inform development programming. Indeed, many approaches to International Development research and practice have their origins in Robert Chambers’ seminal work ‘Whose Reality Counts: Putting the Last First’ (Chambers, 1997) which emphasised the importance of ‘handing over the stick’ and placing people at the centre of development processes. From Chambers’ (1994, 1997) work developed various notions of action research. Rapid Rural Appraisal (RRA) (Chambers, 1983), first used by Chambers in 1983 to talk about a ‘reversal of learning’, Participatory Rural Appraisal (PRA), Participatory Learning and Action (PLA) and Participatory Action Research (PAR) all have their origins in a collaborative people-centred approach where the goal is to involve programme stakeholders and beneficiaries in research and programme planning (Chambers 1994, 1997). The central notion in all of them is that people have the capacity to analyse their own reality and a continual dialogue enables a cyclical process of researching and learning towards social change (Boog *et al.*, 2001).

International Development practice is hugely varied in terms of the extent to which it can be viewed as ‘designerly’ (e.g. collaborative, user-centred and innovative) and is not exclusively about planning and bureaucracy. Examples of collaborative and user-centred processes and innovation are often (but not always), and most easily, found at the level of the ‘grassroots’. Here, programmes can benefit from the personal touch, or flexibility in the way they are

implemented. For example, a programme supporting children heading households might ostensibly be focussed on material support (according to donor funding streams and organisation policies) whilst, in reality, households might equally benefit from the advice and ‘parenting’ that comes with the delivery of aid by ‘caseworkers’. However, innovative work and learning in programme delivery at the grassroots is less successfully translated upwards to inform broader practice and policy. Simultaneously, there is not enough emphasis at the level of policy (e.g. amongst donors and policy-makers) on innovation and the scaling of best *processes* that can be used to adapt programme designs to suit different cultural and social contexts and logics (Miller & Rudnick, 2008).

Collaborative and ‘user-centred’ action research approaches continually evolve and inform how needs and problems are identified, and solutions are planned in International Development. Service Designers can contribute to these processes and practices, and help the move from *planning* solutions to *designing* them but they will need to be specific about where they add value to what already exists in current practice. The next section explores how Service Design could be made useful for International Development users, and what value it can bring to their practices, especially in terms of the different stages of the programme cycle.

Contributions of Service Design: creating social innovation in International Development.

As a collaborative and user-centred problem solving process, Service Design has addressed challenges and created social innovations across multiple topic areas, with a wide range of people in developed world contexts. For example, commercial projects, socially focussed projects and community development projects. In this section, we explore how it might do the same for International Development, by identifying what Service Design can offer, in terms of processes and methods, how these might be best applied, the need for them from an International Development perspective, and where and why they can benefit International Development users.

Service Design has many ‘offers’ for International Development, most of which stem from its inherent principles and that it can enhance what already exists in the sector. First, being *user-centred*, it can generate services that provide users with positive experiences, in turn creating a service that the user will continue to use and promote. This is important for International Development because the buy-in and use of a new service or programme is key to its success. Community ownership of development programmes is increasingly considered a crucial factor in their success. Early post-Independence forays into International Development were generally paternalistic: programmes were planned and delivered to the developing world by developed world ‘experts’. However, high levels of community involvement are now viewed as necessary to promote ‘sustainable development’.⁴ Consequently, working with experts in the developing world and beneficiaries in programme planning is recognised to achieve greater impact because stakeholders ultimately care more about programmes they deliver and use. This is fertile ground for applying Service Design processes and tools that maximise a user-centred approach.

⁴ “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (UN, 1987).

Secondly, Service Design is *collaborative*. The process involves collaboration between stakeholders to understand challenges and develop solutions starting with the users' perspective. A user-centred process brings stakeholders together (i.e. the end user, the provider, supporting organisations) to collaboratively gather insight into challenges faced. With this knowledge, those leading the Service Design process facilitate innovation-focused activities to generate solutions. These activities are supported by tools such as service blueprinting, which describes, plots and understands the interactions of people and processes within the service offering, and customer journey mapping, which diagrams users' experiences with the service. The goal of such activities is to examine users' "quantitative and qualitative decisions, identify touch-points and pain-points, and identify and eliminate bottlenecks as they engage with the service" (Development Post, 2013). This process is useful to ensure that International Development organisations challenge their assumptions about what beneficiaries need and want, and provide a programme that is relevant and suitable whilst ensuring resources are used effectively and sustainably.

Whilst collaborative approaches to programme planning exist in International Development, they are not unproblematic. Notions of participatory development have become synonymous with being collaborative and people (or 'user')-centred when, in fact, these are distinct concepts and require their own tools and techniques. Moreover, although participation is a buzz-word in International Development, participatory approaches have been criticised as tokenistic, and responsible for producing unjust and illegitimate exercise of power (Cooke & Kothari, 2001). Consequently, there are benefits of bringing Service Design and International Development thinking together develop useful tools for supporting collaborative and people-centred processes in development programming. However, applying Service Design approaches should not be viewed as a panacea to making International Development practice more participatory. Blyth & Kimbell (2011) have critiqued some design thinking in the International Development sector for their rhetoric of 'empathy with the individual' and an associated lack of attention to the wider social issues affecting end users. Service Designers will need to interrogate their own understanding and application of a participatory approach if they are to offer anything new and useful to the field.

Finally, the Service Design process creates *social innovations*. Social innovation is "the development and implementation of new ideas (products, services and models) to meet social needs" (Mulgan 2007, p. 9). New ideas are always required to meet social needs until there is a one that clearly demonstrates success in addressing a challenge or, better still, eradicates it. Given tendencies towards programme replication in International Development, innovation is not widely valued. Moreover, because M&E is largely driven by impact assessment against programme indicators identified through baseline surveys, there is little scope to be innovative during the programme delivery stage through rapid prototyping and testing. Finally, skills associated with being innovative are not common amongst International Development organisations, perhaps because they are not deemed useful and, therefore not recruited as such, and because the sector itself is dominated by a system in which programmes are planned along formulaic lines using existing programme typologies. There is also a perception of working within tight timeframes and that engaging in innovation processes is too time-consuming and vague in terms of outcomes.

Whilst Service Design has much to contribute to International Development, the question of how best to apply it remains. By this, we mean applying it in a manner which achieves the greatest impact in terms of addressing development needs and problems through programme design, delivery and evaluation. Service Design has the potential to fill pertinent gaps in

existing tools, techniques and skill sets. However, it must be accompanied by knowledge about the challenging and unfamiliar social and cultural contexts into which it is stepping, understanding of the International Development 'system' in terms of politics and agendas at play, and respect for what already exists and works in terms of collaborative and people centred approaches. Consequently, in order to make a responsible and useful contribution, a number of problematics require attention (by designers, International Development actors, policy makers, academics and so on). These problematics, and how Service Designers can contribute to addressing them, are the subject of the next section.

Challenges of applying a Service Design approach: Attending to the problematics.

Applying Service Design to International Development requires attention to a number of problematics. Whilst many of the challenges we outline in this section are applicable to any specialism wanting to work in International Development, we focus here on how Service Design can help tackle them to ensure its contributions are useful and responsible. Where possible, we offer initial ideas for how Service Design might directly address challenges, and identify where further work is needed amongst the Service Design community.

First, whilst Service Design has been building recognition over the past decade within commercial and public sectors in Europe (UK, Scandinavia, Holland and Italy), the USA and Australia, it is yet to be applied in a developing world context in any significant way. Moreover, although there is a need to progress how collaborative and people (or user)-centred approaches are used in International Development, there is still relatively little demand for them from policy-makers, donors and practitioners. In order to create better awareness about the value of Service Design, opportunities must be created for conversations between designers and International Development stakeholders. Such conversations could usefully generate understanding amongst Service Designers of the International Development sector, explore how Service Design tools can be of use, and identify what changes need to happen at a systemic level within the sector to create the kind of space needed for design and innovation to 'slip in', (Miller & Rudnick, 2011, p. 14).

Second, the ethics of applying Service Design in developing world contexts need to be carefully considered. Even when applied in the developed world, ethical application is rarely a consideration. Being ethical in settings where cultural and social codes are unfamiliar, and gender, racial and religious politics are complex, is challenging, especially where the practices of a collaborative approach may even put designers and participants at risk. For example, working in a post-conflict environment can throw up tensions and sensitivities that need to be deeply understood before an appropriate and safe way of engaging stakeholders in a collaborative process can be developed. In addition, there are politics of participation to consider. Involving stakeholders in collaborative design activities is challenging when they represent different parts of the International Development system and come with competing agendas, and vastly different skills and abilities. For example, bringing illiterate beneficiaries together with NGO staff running a programme, or donor staff together with staff from a donor recipient organisation can produce unequal power relations that inhibit participation.

The notion of ethics in International Development practice is a huge area which requires greater attention than can be given here. However, understanding what is locally considered 'ethical' is an important first step to developing a co-operative approach to ethics in which

locally situated notions of what is ethical can be used to inform guidelines (Miller & Scollon, 2011; Payne, 2009). Service Designers can extend their user-centred approaches (used to design and implement services) to the domain of ethics to promote understanding about ethical considerations from a local perspective. This includes both imagining scenarios, something that Service Designers are experts in, to explore 'what's ethical', and directly exploring local cultural and social concepts which have a bearing on what is considered ethical from a local perspective. It is important that such activities are included at the beginning of the Service Design process and returned to throughout: after all, an understanding of what is locally ethical can change during the course of a design journey.

Third, the accessibility of approaches and tools in developing world settings is a key challenge. For example, how to make tools and techniques (a) user-friendly in terms of speaking the language of International Development actors and able to work within the operating structures and systems of International Development organisations; (b) understandable from a local perspective and sensitive to gender, racial, cultural and religious politics; and (c) accessible to organisations which may be challenged, for example, in terms of access to electricity, computers and the internet, or have staff with low levels of education and literacy. Designers have a special ability to visually communicate messages, approaches, concepts and strategies. This is a key component in making new tools and approaches user-friendly for the audience. Designers' visual communication skills can provide a common language (Vanderbeeken, 2011) that translates the strategic language of organisations (International Development organisations in this case) with the emotional language and experiences of the public:

Often, more complex problems can be attacked only by teams of specialists, speaking their own professional jargon. Industrial designers, who are members of such a team, find that, besides fulfilling their normal design function, they must act as a communication bridge between other team members. Many times the designer may be the only one able to speak the various technical jargons; because of his educational background, the role of team interpreter is forced upon him. So we find the industrial designer becoming the team synthesist, a position to which he has been elevated by the default of people from the other disciplines (Papanek, 1971, p. 28).

Fourth, despite the fact that many International Development programmes focus at the local level, programming in International Development is rarely informed by 'local knowledge'. (Geertz, 1983). Creating space, and using approaches to generate 'local knowledge', means that social innovations can be locally situated, in turn making programmes more locally effective. Although Service Design typically views the practice of Ethnography as a set of methods and tools which can be used to generate insights (e.g. case studies, participant observation and so on), it is actually an approach to research, underpinned by some key principles (e.g. observing, participating, listening, reflexivity) which inform how certain choice methods and tools are employed, allowing systems of meanings within (sub)cultures to be revealed and understood.

Consequently, Service Design needs to be properly informed and framed by 'local knowledge' to ensure it can offer social innovations which are locally situated and thus socially and culturally appropriate. Service Design has evolved as a specialism in developed world contexts and, as such, been largely applied in broadly familiar cultural and social settings. Assumptions that Service Designers hold about people's behaviours and practices naturally inform the way their processes (e.g. tools and techniques) are used in projects, the nature of the insights gathered, how they are interpreted, and the way they are used to inform designs. For example, assumptions about how different genders will participate in a

group activity gleaned from developed world project experiences may not hold true in developing world settings. Instead, Service Designers need to suspend these assumptions and replace them with deep understanding about the local cultural logics at play, enabling their processes to have greater impact and, ultimately, success.

Fifthly, the network of development actors variously involved in the funding, planning and delivery of International Development programmes makes for a complex chain of ‘end users’ and other stakeholders. Moreover, the focus of programme planning is not necessarily driven by the needs and demands of the end users (usually known as ‘programme beneficiaries’). Rather, donor budgets, targets and timelines and the broader political structures and systems of the agency delivering the programme are paramount in programme planning activities. However, Service Designers are very aware of working within tight budgets, big targets and short timelines. In fact, these elements are seen as part of the innovation challenge. The collaborative nature of the Service Design process can lead to co-delivered interventions which tap into existing resources available which can release pressure on budgets whilst reaching targets. When starting with the end user and their perspective, designed solutions can not only benefit them, but also the network of International Development actors.

Finally, the question of who is best to apply a Service Design approach to International Development is important. Some platforms now exist which have packaged Service Design tools and techniques with the aim of supporting ‘non-designers’ to use them, such as books, for example *This is Service Design Thinking* (Stickdorn & Schneider, 2012), websites, such as the Design Council’s service design resources (Design Council, 2013) and toolkits such as the Service Design Toolkit for public services (Namahn, 2014). The theory is that such platforms and toolkits can equip those working in International Development to use the approach, presuming large barriers such as ethical practice, accessibility and local contextual understanding (discussed above) have been resolved. However, the success of using Service Design is partly due to the qualities that designers inherently bring such as the way they connect with commissioners, front-line staff and the public. They communicate visually, encourage risk taking and always prototype ideas. This engages and empowers those they are working with, helps develop creativity, and produce innovative solutions. Non-designers who also have these qualities may apply a Service Design approach successfully. For those who do not, it is unlikely that simply providing Service Design tools will create innovation. Instead, building the practice of Service Design within International Development through a partnership approach between International Development stakeholders and Service Designers would be helpful. Those working in International Development would benefit from shadowing Service Designers delivering projects: observing, learning and building capabilities in the principles, tools and processes. For the Service Designer, an experienced expert eye and opinion on the complexities of working in International Development would help ensure Service Design thinking is applied in the most strategic way, maximising impact and value.

Conclusion: Continuing the conversation and taking action.

In this paper we have opened a conversation about the role of Service Design in the International Development sector, in particular the need for it and how it might be best applied. Perhaps most pertinently, we have explored some of the potential challenges that need addressing when considering how Service Design can make both a useful and

responsible contribution. We have outlined what Service Designers, and their particular skills sets and abilities, can offer in terms of addressing these challenges, and where more work is needed amongst the Service Design community. Some specific areas we would like to take forward include:

- » Bringing an Ethnographic approach and a Service Design approach together to explore how 'local knowledge' can be generated and used in the design of International Development programmes and policy.
- » Exploring the network of development actors to better understand how a Service Design approach might 'slip in' and be best applied to different actors in this network and at key junctures in the International Development programme cycle which can most benefit from more collaboration, user-centredness and innovation (e.g. the programme planning stage, process and impact evaluation).
- » Re-examining and re-thinking the role of 'beneficiaries' in programme design to find new ways of actively engaging them as collaborators in programme design processes.
- » Understanding how Service Design techniques and tools might be usefully applied to different aspects of the programme cycle.

We believe the conversation started in this paper should be continued, and action taken. Conversation may be continued through further papers focussing on specific aspects raised here, or based on open discussions from interested parties, and we invite such people to contact us. Action can be taken through practice, particularly that which is based on collaborations between Service Designers and International Development actors, be they organisation staff, practitioners, think tanks or academics. It is essential that thinking developed in print is observed, applied and developed through practical work, which is well informed and monitored. Such work will provide the most insightful thinking about the full potential of the role Service Design can play in International Development. There are exciting and challenging times ahead as Service Design thinking is applied more comprehensively to the International Development sector and we look forward to seeing, and being part of, this journey.

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The potential of a Design for Service approach to transform Voluntary Community Sector organisations

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Abstract

This paper presents the findings from a case study where a designer worked within three Voluntary Community Sector (VCS) organisations using a Design for Service (DfS) approach. The authors identify four organisational features that enable transformational change in this setting: understanding the role and remit of DfS; being receptive to change; valuing both process and outcomes; and the affinity between the existing organisational culture and DfS approach. These findings are discussed as a precursor to establishing the capacity of a DfS approach to effect transformational change in the development of public services in the VCS. It is hoped that this will help to influence the development and design of public services in the VCS in the future, whilst also informing the future practice of service design practitioners operating in this sector.

KEYWORDS: design for service, transformation, charity, public services

Introduction

The Government defines the Voluntary Community Sector (VCS) or Third Sector as “non-governmental organisations which are value-driven and which principally reinvest their surpluses to further social, environmental or cultural objectives” (HM Treasury, 2007, p. 5). This sector has been increasingly involved in the delivery of public services on behalf of statutory organisations; a significant proportion of the sector’s growth over the past decade has been the result of this increase in state funding and contracts (NCVO, 2012). However, following the UK Government’s Comprehensive Spending Review in 2010, the VCS has suffered a significant contraction in statutory funding leaving the sector in a fragile state (New Philanthropy Capital, 2010). The volatile fiscal climate has had a considerable impact on VCS organisations’ capacity, yet the community is also trying to respond to a sizeable increase in service demand (VONNE, 2011). Coupled with this, the UK Government’s Putting People First policy (2007) signaled a complete revision of the existing adult social care model, asking service deliverers to place more emphasis on ‘relational’ rather than ‘transactional’ approaches to delivery (Needham & Carr, 2009, p. 3). The VCS is therefore faced with the challenge of meeting these altered expectations of the services they deliver, and how they are offered, in dynamic conditions. However, with no prescribed model for organisational change, it remains unclear if the sector has the capacity or capability to innovate at pace to accurately respond to the demands of their various stakeholders (New Philanthropy Capital, 2010).

Modern design discourse has started to recognise the transformative powers of service design, with texts exploring design's role in inciting change in both organisations (Burns et al., 2006; Junginger & Sangiorgi, 2009) and communities (Manzini, 2011; Design Commission, 2013). Recent design programmes such as Dott 07 (Tan, 2012) and Public Services by Design (Design Council, 2010) have demonstrated that design can have a transformational outcome; acting as a catalyst for change (Tan, 2012) on a personal, organisational and societal level. These transformational powers of design are also being utilised at national and international levels in the development of policies to “address societal challenges and as a catalyst of societal and economic change” (European Commission, 2009, p. 70). Kimbell (2011, p. 49) therefore proposes that professionals talk about “designing for service”, as the term recognises that what is being designed is not an end result, but rather a platform for action with which diverse actors will engage over time. In this approach, designers draw on an arsenal of dedicated tools to act as facilitator and provoker (Tan, 2012, p. 167), to both enable actors to co-create, and support the visioning process by prompting more radical thought (Manzini, 2011). It is therefore of significant value to understand the extent to which Design for Service (DfS) could help the VCS community to transform their traditional approaches and deliver better public services.

Despite this growing recognition of the role of DfS in enacting meaningful transformation, the relative youth of this area of practice means that there is little theory on how designers can affect change on an organisational or societal level (Pacenti & Sangiorgi, 2010; Sangiorgi, 2011). It is therefore vital to understand the factors that can impact on achieving transformational change in a sector such as VCS. Although literature does still debate what constitutes a ‘transformational outcome’ (Sangiorgi, 2011; Wetter-Edman, 2011, p. 69), for the purposes of this research, the authors have used Warwick, et al.’s (2012) four criteria; awareness, community, capacity and new organisational standards, as indications of a transformational outcome to a DfS engagement.

This paper presents the findings from a cross-case study undertaken as part of a Doctoral inquiry, where a designer worked within three VCS organisations using a DfS approach, each over a 2 month period. In each organisation, the principal author acted as reflective researcher-practitioner, henceforth referred to as the Designer, supported by the other authors as research supervisors. These findings are discussed as a first step in understanding how a DfS approach can effect transformational change in the VCS. It is hoped that this will help to influence the development and design of public services in the VCS in the future, whilst also informing the future practice of service designers operating in this area.

Methodology

Action Research (Lewin, 1946) conducted through a case study (Yin, 2003) was chosen as the predominant methodology, in order to produce context-specific data that could also result in the development of practice and theory (Kellock Hay et al., 2001). Action-reflection cycles (McNiff & Whitehead, 2006) were used in three project settings; each forming part of a single exploratory case study (Robson, 2002, p. 181) where common features were studied and compared within and across settings to provide a more general overview.

Project settings were selected using theoretical sampling to “replicate previous cases or extend emergent theory” (Eisenhardt, 1989, p. 533). Selection criteria required the host organisation to be a registered charity or other formally constituted VCS organisation with an income from charitable activities between £200,000 and £500,000 per year; an indicator

that an organisation will be at risk as statutory support diminishes (Community Foundation, 2011). Project settings had to be currently offering public services and looking to evaluate, change or expand these in some way in the future. They also had to have differing charitable aims and customer bases, in order that the Designer's practice was not guided by previous engagements (Lewin, 1946). In each case, an initial meeting between the Designer and CEO explained the research aims and introduced the DfS approach in more detail using past projects as illustrative examples, before both parties made a final decision to progress.

In each of the three charities engaged in this study, the Designer worked with a variety of stakeholders; staff and volunteers who administer services directly to clients, middle management, and executive leadership. The design activity was tailored to the organisation's particular area of expertise, and used appropriate design methods and tools to address the specific issues that arose in each context. A brief summary of each charity, the design activity undertaken, and the resulting impact is described below:

Charity A is part of a UK federation; providing mental health and wellbeing services across three boroughs in North East (NE) England, many of which are on behalf of a local council. Here, the Designer was asked to help the organisation consider what services they should provide in a new geographical area. Tools, i.e. personas, idea generation, service blueprints and touchpoint prototyping, were used to co-design a new recovery-focused service that engaged service users differently. Following the Designer's contribution, Charity A successfully applied for a grant of £425,000 from BIG Lottery Reaching Communities, to roll this service out across the region. Charity A's national federation commissioned a service design pilot with three other federation members following the successful use of the practice.

Charity B is also registered with a national federation. Operating in one borough in NE England, they provide community education services to all ages. Here, the Designer was engaged to help improve earned income, particularly how the charity could improve its membership system, which offered discounts on fitness, arts and children's services to the local community. Tools, i.e. visual customer journeys, staff surveys and co-design workshops, were used to co-design a new membership system that simplified the cost structure and reduced the price for those in receipt of benefits. Furthermore, the Designer helped to undertake engaging user research that formed an application to BIG Lottery, and they were awarded £190,000 as a result. Charity B has since contracted continuing service design support after the project to support their customer communication.

Charity C is a national charity based in NE England that aims to engage children in reading, both directly through various public services, and through educational institutions. Here, the Designer considered how the customer experience provided by the charity's public services could be improved. Tools, i.e. observation, reframing the problem area and idea generation, were used to co-design and prototype nine concepts to improve the customer's experience. As a direct result, Charity C saw a 300% rise in their annual pass upgrade rate, which equates to an extra £52,500 a year for the organisation. Consequently, the organisation committed to using the DfS process again, enlisting service designers to support an upcoming project around the user experience they provide for people with cognitive and sensory impairments.

Data Collection

Data collected was predominantly qualitative for two reasons: it aims to "understand why things are happening", in keeping with the action research methodology (Easterby-Smith et

al., 2002, p.3); and it helps to elicit “well-grounded, rich descriptions of processes in identifiable local contexts” (Miles & Huberman, 1994, p.3).

The qualitative methods collected data from project stakeholders, who held the knowledge of the projects’ inherent values. These methods were used consistently across the case-study to capture the design object, the Designer’s activity and the project stakeholders’ responses and opinions in each setting. The data collection methods were broadly split into three sections: action research design activity, semi-structured interviews, and reflection-on-action. The plan for data collection in each project can be seen in Figure 1.



Figure 1: Data Collection Plan (*CDG = Co-Design Group)

Action Research Design Activity can act as a probe and a way of capturing rich data (Zimmerman et al., 2010). Accordingly, outcomes from the Designer’s activity were captured to provide an insight into the potential outputs of the design process in context, and also, the possible responses to them. Thus, project meetings held to capture and improve the emerging design activity were audio recorded and proved useful to capture how the Designer described themselves, the activity, and the responses of project stakeholders over time. The Designer’s photographs, sketches, visuals and models from each collaboration were also retained and aided the coding of the unstructured interview data. It is advocated that a designer should gain feedback about the tools, methods and practices they employ in a timely manner (Sanders & Stappers, 2008), therefore, both formal and informal feedback was captured to add to the richness of the data available for analysis.

Semi-structured Interviews were conducted by the Designer at the commencement of the project to gauge perceptions and expectations of the design process. At the end, key members of staff (the CEO, and a maximum cross-section of four project stakeholders) were interviewed by an independent expert to: capture and probe insights made by stakeholders; gain an understanding of if and where, a design approach has made a difference; and gather unbiased responses to the Designer’s engagement. This independent review ensured critical feedback was obtained from participants and provided data for triangulation.

Reflection-on-Action documentation was made to allow the Designer to engage in a process of continuous learning (Schön, 1983). Participants produced daily diaries of the actions and observations made during the action research cycle. These served to capture unseen and

unrecorded conversations with the project stakeholders, as well as note the Designer's activities, process, personal thoughts and feelings. Evernote¹ software recorded and securely stored the diaries, enabling data input in mixed media from various devices (see Figure 2).

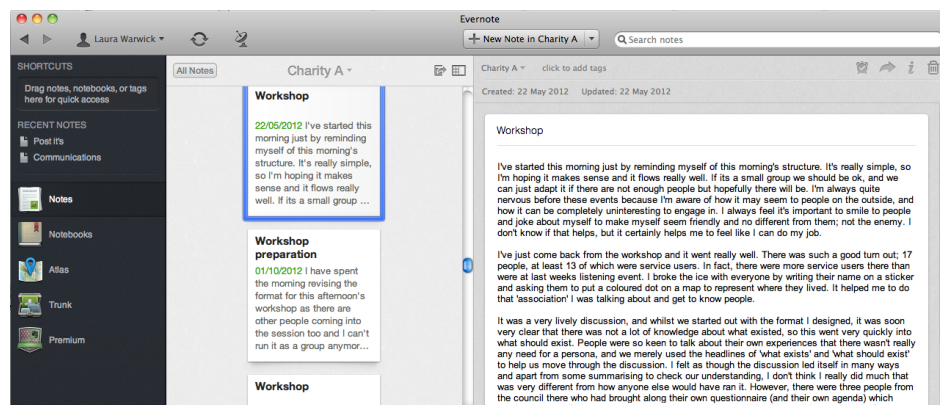


Figure 2: Screenshot of reflection-on-action logs for Charity A

The reflection documentation helped to evidence the Designer's influence on the study, systematically alternating between performing 'on stage' and reflecting critically 'back stage', which are key tenets of action research (McNiff & Whitehead, 2006).

Analysis

A general inductive analysis process was used to note the frequent, dominant, or significant themes inherent in raw data, independent of guidance or structure from the researchers, in order to derive theory (Patton, 2002, p. 55). The designer's engagement at all three project settings was completed before any formal analysis commenced (Robson, 2002, p. 181), ensuring that later collaborations were not influenced by analysis of earlier ones.

Each project setting was analysed in turn in a four stage process, to ensure that emergent themes were grounded in specific cases and their contexts before being compared across the case study (Glaser & Strauss, 1967). Firstly, during several close readings of all collated data, that which related to the question '*how the DfS approach has an impact on organisational activity in the VCS context?*' was isolated and encoded accordingly. Secondly, these isolated quotes or sections of text were copied onto Post-It notes, which were then organised in a matrix that placed time (project set-up, project activity, and post project reflection) on the horizontal axis and stakeholder (Designer, Chief Executive, Service Manager, etc.) on the vertical axis. The excerpts of data were then manually grouped by meaning, to create multiple-coding collections based on stakeholders' perspectives at specific moments in time. Thirdly, these coding collections were assigned a title summarising the category; where similarly entitled multiple-coding collections existed, this was taken as an indication of a critical detail or attribute related to the Designer's activity. Fourthly, these categories were then triangulated across the different stakeholders' perspectives and across the timeline to find the most cogent groupings and patterns (Silverman, 2006, p.290). Finally, these patterns were compared and contrasted across the project settings to help build theory.

¹ Evernote is software that is accessible on web, computer, phone or tablet that allows you to make time-coded notes. You can also attach images, web links, documents or emails to create multi-layered logs.

Findings

High value project impacts were reported by each charity - noted in the Methodology section of this paper - and the DfS approach generated several tangible service interventions and many strategic changes in each. However, the analysis found that whilst positive service innovations were observed in all three project settings, the collaboration only had a transformational impact in Charities A and C. To consider this disparity in outcomes, this section of the paper presents the findings in relation to the four key organisational features found to be required for DfS to effect transformational change.

Understanding the Design for Service approach

All three charities received the same information about DfS before the collaboration commenced and the Designer spent time initially introducing and demonstrating the different tools and methods of the approach to the various stakeholders. Despite this consistency, analysis shows that the understanding of the DfS approach was different in each setting, which influenced the trajectory of the project.

In Charity B, the CEO stated in their pre-collaboration interview that they saw the DfS approach relating to the marketing of services. Stakeholders' close association of DfS with marketing was evident throughout the project, with the Executive Management Team (EMT) consistently linking the two approaches in project meetings. Although stakeholders' lack of knowledge about DfS was expected, their preconception became a barrier to the design activity when the outcomes being generated were seen to extend beyond traditional 'marketing communications'. The initial interviews with the EMT suggested that all anticipated outcomes were related to effective *communication* of services. When the Design work also challenged fundamental policies and structures in the organisation, for example interrogating the way that prices were set, EMT responded by reinforcing the need to focus on communication of services rather than question the practice of how they were delivered.

In contrast, stakeholders in Charities A and C who had also not previously engaged in a DfS programme, did anticipate that the approach might challenge some of their current practice. Conversely, as well as not anticipating that the DfS approach could challenge Charity B's current organisational practice, the analysis shows that the EMT did not see this as a desirable role. Although in one meeting the CEO did suggest that there is permission to challenge the organisation, the project meeting data shows that this is something that they did not encourage. This is indicative of their perception that the Designer's role was to provide capacity to help them to reach their pre-defined outcomes, rather than question any of their aims. It is clear that in Charities A and C there was both an expectation and desire that the Designer would operate across the different levels of the organisation and challenge their existing processes, which was lacking in Charity B. As such, the roles that the Designer was allowed to play in setting B were greatly restricted.

Receptivity to Change

A pre-requisite for each collaboration was that the charity should identify that they want to review or change existing or planned service offers, however analysis shows that the organisations had different levels of receptivity to change.

In Charity A, the organisation-wide appetite to try new processes and be open to the outcomes that they presented, provided an ideal environment for the design activity to progress. Likewise, Charity C's stakeholders identified that they were at an opportune moment in their development for external input, and stakeholders also reflected that they

were comfortable with the concept of transformation. In contrast, a recent period of organisational restructure in Charity B meant that front-line staff exhibited a reticence to change, which posed a significant barrier to the Designer's activity. Although stakeholders engaged in co-creation activities, the organisational fragility decelerated the project momentum, thus reducing the impact it was possible to achieve in the given period.

Similar disparities in receptiveness to change can be seen in Charity B's responses to proposals made throughout the collaboration that impacted on their current business model. Although the Designer demonstrated how improved customer-focused offers could help to increase income, their current financial difficulties limited the stakeholders' ability to see how the services could be offered differently. Although Charity A and C also highlighted the volatile fiscal climate as a driver for change, they viewed the Designer's engagement as an opportunity to explore ways of increasing or diversifying income in order to become more sustainable, and were therefore more responsive to alternative business models.

In part, this inconsistency between Charity B's feedback to proposals that impacted on their current business model, versus the positive reactions of settings A and C, can be directly correlated to the previously discussed perceptions of DfS and the function it would play in the organisation. However, analysis shows that it can also be linked to the organisation's desire for change to occur. The readiness for change observed in Charities A and C, in comparison to the apparent fragility felt by front-line staff in Charity B, had an impact on the way the Designer was able to engage with stakeholders and how their proposals were received. Moreover, the lack of appetite for change at an executive level in Charity B ultimately restricted the work of the Designer to incremental rather than strategic outcomes.

Valuing Process and Outcomes

The difference in outcomes across the case-studies can also be linked to the value that the stakeholders in each setting placed on the DfS process, in comparison to tangible outputs.

Analysis of the pre-collaboration interviews shows that Charity B's executive stakeholders were focused on the results of the project from the outset. In week two of the project the CEO remarks; "what I want are the solutions". This pattern continues throughout the project activity data as the Designer was asked, "what's the answer?" or "what's the solution to it?" on several separate occasions after presenting design research findings. This emphasis on results in the data overwhelms any discussion of the value in the process itself.

Conversely, in Charity A, analysis shows that stakeholders placed huge value on the design process. At the beginning of the collaboration, stakeholders identified that they wanted to do things differently but lacked the knowledge of how to do that. Their desire to understand how to enact transformation meant that as stakeholders recognised DfS process as a potential vehicle for change, the Designer's input was increasingly valued. Their appreciation of the approach is also evidenced by the organisation's request for a service design toolkit in order to provide a legacy to the collaboration, which demonstrated their commitment to embracing the approach long-term. Similarly, in Charity C the stakeholders recognised that their current service development processes were not effective, with the CEO stating that; "we have a process for testing ideas but not developing them". Like Charity A, stakeholders in Charity C also valued the different perspective that the DfS approach brought. In a meeting at the end of the project, the Programmes Manager said; "the process is as valuable as the results... the process is gold dust", further reinforcing the value that they placed on the approach itself. As such, the charity also pledged to continue using the DfS approach; "we're absolutely committed to using these methods again".

Although data from post-collaboration interviews suggests that all stakeholders valued the DfS process, it is clear that the desire to adopt a new approach was fundamentally lacking in Charity B. As such, Charity B placed emphasis on the tangible outcomes of the engagement, resulting in the restriction of the Designer's influence to front-line services, and preventing a transformational outcome.

Compatibility between existing organisational culture and DfS approach

Further insight can be gained into the absence of transformation in Charity B by comparing the organisation's existing approaches to service development and the DfS process.

In encouraging the use of the DfS process in each setting, the Designer advocated co-creation at every stage. However in Charity B, current service development policy dictated that ideas should go through EMT, who would then decide whether they should be implemented. It is clear that this practice did not facilitate a culture of co-creation, for example; the Memberships Coordinator was also reluctant to engage members of all departments to help co-create a new membership structure, saying; "that these structures need to be set at management level". Data collated across the collaboration timeline shows that Charity B's existing organisational policies dictated that finance was at the centre of the service development process, whereas DfS approach places the users at the centre (Burns et al., 2006). Although DfS can address income as part of the creative work, the approach focuses on understanding what will be valued by users, in order to create viable income generating opportunities. Without a strong desire to alter the existing service development practice, the conflict between user-focus and finance-focus proved to be a barrier to the project progression and the extent to which design could influence the organisation.

The findings suggest that in the case of Charities A and C, the principles of a DfS approach aligned very much with the requirements of the organisation; analysis shows that focusing on user needs to build desirable, efficient and effective offers was both an expectation of the organisations, as well as being an aim of the DfS approach. In Charity A, stakeholders were clear throughout that they wanted to design services based on customer need; "we really do need to find out what the needs are... and the gaps". In Charity C, the CEO said that their outlook aligned with the Designer's work, stating that; "the motivation and culture of the organisation were there and right for [the collaboration]". The data demonstrates that during conversations in both settings, the Designer and members of staff recognised this common perspective, which strengthened their relationship and their ability to co-create.

In both settings A and C, the symmetry between the existing organisational attitude and the DfS approach allowed the Designer to adopt the roles of facilitator and provoker much more successfully. However, in Charity B, there was a distinct disparity between the DfS approach and the incremental service development approach preferred by EMT. With such a discrepancy, the design process was not sufficiently valued to permeate the strategic levels of the organisation and create transformational outcomes as it had in the other two settings.

Conclusions

Charity A and C's willingness to fundamentally challenge the way they operated was a key factor in the resulting transformational outcomes that the stakeholders observed in both project settings, as design was allowed to permeate all aspects of the organisations, and was not limited solely to a service-interaction level, as it was in Charity B.

Findings from the case-study analysis suggest that there was a receptivity to change at the level of both policy and delivery in Charities A and C that was absent in Charity B, and thus prevented the Designer's work from pervading the systems level of the charity as it had done in the other two project settings. Charity B's reluctance to change can be linked to the EMT's strong vision for the organisation, which acted as both a barrier to the design outcomes, and created an unsuitable environment for co-creation. This was compounded by Charity B's preconceptions about DfS, and their desired outcomes from the collaboration. Without permission to co-create a new vision, it was impossible for the DfS approach to have any significant impact on the fundamental structures of the organisation in the eight-week project period.

This research provides significant learning for DfS practitioners, as it shows that an external driver for change is not enough to enact transformation in an organisation; there needs to be an internal rhetoric for engaging in significant change. Where possible, this openness to change needs to be present at all levels in order to co-create new organisational standards in a timely manner. Although it is not necessarily possible to ascertain this desire pre-collaboration, this paper has presented four organisational features that indicate if DfS could have a more transformational effect. In practice, a designer should ensure that the stakeholders have *accurate expectations of both the DfS approach and the anticipated outcomes*. Predictably, *measuring the charity's receptivity to change* prior to collaboration could help anticipate if transformational outcomes would be possible; however, the findings suggests that *looking for a new approach as well as new outcomes* would indicate a degree of openness that is necessary for radical change. Furthermore determining the charity's existing organisational culture and *assessing how well it aligns with the tenets of the DfS approach* (a focus on user value rather than cost of delivery) would also help to establish if the Designer's activity would be welcomed and embraced by the organisation.

Further Research

As this paper presents a first comparison of all project setting data, further qualifying research needs to be undertaken. It is anticipated that the completion of the Doctoral project will add detail to the features of a VCS organisation that enable DfS to have a transformational outcome. In particular, correlation with literature that focuses on DfS in private and public sectors to ascertain which of the features are peculiar to the VCS.

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Informal, Formal, Collaborative – identifying new models of services within favelas of Rio de Janeiro

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Abstract

Favelas in Rio de Janeiro are places characterized by the lack of infrastructure and access to services. Nevertheless, when looking more closely at these communities, it becomes apparent the power that their social fabric has to create solutions, opening field for the emergence of social innovations. In fact, preliminary research suggests a set of cases where people are already imagining and conceiving a new generation of services within these communities. This article introduces a research about services that arise from social innovations initiatives within favelas of Rio de Janeiro. More precisely, it describes how locals, using social networks connections inside favelas, can design services and how service design can be inspired from these cases to suggest ideas of new service models. In order to illustrate that, a study case about Favela Orgânica is presented, a service born in the Favela of Babilônia that promotes new ways to deal with food.

KEYWORDS: service design, social innovation, creative communities

Introduction

Underserved communities are complex social ecosystems characterized by, on the one hand, the informality and density of their social networks and, on the other hand, the lack of basic services and the marginalization of a system that fails to meet their local needs. Traditional ties - made inside family, neighbourhood and village - can be the source of positive strength, knowledge and powerful social cohesion for them.

These communities are usually, but not exclusively, placed on informal settlements, which are defined as urban areas that operate at the limits or beyond the regulations that govern cities. Brazilian favelas, South African townships, North African shantytowns, Indian slums or the problematic neighbourhoods of towns in northern countries: altogether a billion of people are estimated to live in such places today.

Looking more closely at this complex reality, it is apparent that the social and human capital that exists within underserved communities could be used to solve problems of everyday life faced by this population, in a more open, flexible and transparent manner. As a matter of fact, preliminary research suggests a set of promising cases of people that are already imagining and conceiving a new generation of services within these communities. We

identify these services as being born from social innovation initiatives, since they expose new ways of doing and thinking, motivated by the goal of meeting common goods, in order to satisfy unmet local needs. They are also based on the active participation of those who benefit directly from them, what shows their potential to be collaborative services.

This article introduces a research about services that arise from social innovation cases within favelas of Rio de Janeiro. More precisely, it describes how locals, using social connections inside favelas, can design services and how service design can be inspired from these cases to suggest ideas of new service models. For that, a literature review is presented about service design, social innovation and the concept of favela. The idea is to expose, first, how creative initiatives can arise in a place that suffers from a lack of basic services, expressing new tendencies of living together, and second, how service design can collect ideas for new service models, understanding the project created by the own community and through a human-centred perspective. In order to illustrate that, a study case about Favela Orgânica is presented, a service born in the Favela of Babilônia (south zone of the city of Rio de Janeiro) that promotes the total use of vegetables and fruits to cook and to fertilize home gardens.

Favelas in Rio de Janeiro

Favelas in the city of Rio de Janeiro are popular worldwide. This happens because of their aesthetics (formed mostly by self-built houses), the informality that permeates their social/work relations, their poverty and lack of access to services that are already provided in the rest of the city. It is common to represent favelas as something homogeneous, identifying these spaces by the “strong socio-spatial stigmatization, specially inferred by the residents of the other parts of the city.” (Silva, 2009, p. 22-23). For IBGE, the *Instituto Brasileiro de Geografia e Estatística*, “a favela is a settlement of 50 housing units or more located on public or private property and characterized by disordered occupation without the benefits of essential public services.” (Dymski, 2011, p. 10). This author identifies, through an economical view, the contrasts between the favela and the non-favela urban economy. He analyses the differences between the formal and informal spaces in the city, which includes:

Homes that have numerical addresses, and those without them; homes built by trained architects and certified contractors, and those built by the eye; places where the roads are maintained by municipal or state governments, and places without maintained roads. (Dymski, 2011, p. 10).

This definition is based on dichotomies, i.e., what is and what is not a favela. However, when we analyse the favelas more closely, regarding the context of the city of Rio de Janeiro, each one has its own history and local identity. Even the aesthetics aspects change; there are favelas placed in lower class buildings, for example. Therefore, a favela may be defined by specific characteristics. Firstly, favelas are visibly different from the rest of the city (lack of infrastructure and access to basic services); secondly, they are formed by poor people, but most of them are workers, who sustain their families by formal and informal jobs; and finally, they have their own culture (their own formation history).

Briefly, favelas are places that suffer from the lack of access to a structure already provided to the rest of the city. Thus, the stereotype associated with them is the idea of lacking: “under this perspective, the favela is defined by what it is not or by what it has not.” (Silva, 2009, p. 16). Since 2008, the creation of the Pacifying Police Units (Unidades de Polícia Pacificadora, 2014), a project from the government of Rio de Janeiro, has been contributing

for the states' increasing participation within some of these communities, especially against the drug and gun traffic, what has been resulting in improvements for their infrastructure. Nonetheless, despite of these improvements, people within favelas search for new alternatives to better their daily lives.

In fact, it is precisely the stigma of lack within these communities that makes people to come together to work collaboratively, aiming for common social and economic benefits. Under the perspective of service design, a study about social innovations that emerge from favelas is interesting, since designers could search for potentialities of new models of services within these communities.

Creative communities and social innovations within favelas

The favelas in Rio de Janeiro are commonly referred to as communities ('comunidades'). Different social networks form these spaces, what facilitates the relations among their actors, in the search for individual and common benefits. Larissa Lomnitz (2009), a Latin-American thinker who researches about the central role of social networks within urban studies, claims that organisations that arise from informal communities use traditional institutions to survive. These institutions are "family, friendship, membership of an ethnic group or system of beliefs", that base themselves on their "cultural definition of trust and loyalty, which are central elements to the work of informal networks". (Lomnitz, 2009, p. 19). To this author, "a social network is a field of relations among individuals", that establishes "complex relations within a specific social space." (Lomnitz, 2009, p. 19). These relationships allow the formation of solidarity networks, what "implies in an exchange system of goods, services and information that occurs within the sociability". (Lomnitz, 2009, p. 19).

New arrangements of social actors are formed from these networks, what permits them to find new ways to solve their daily problems. These groups of people can be identified as creative communities (Meroni, 2007), because "they are deeply rooted in a place, they make good use of the local resources and, directly or indirectly, they promote new ways of social exchange." (ibid, p. 14). Several cases reveal this reality. On the one hand, we have neighbours that share contracted services of Internet, teenagers that get together to create blogs to write about events happening in their community, and people that organise themselves to cook and sell meals locally. On the other hand, there are women that, together, take care of the community's children, while parents are working; people that, with the assistance of external actors, create radio station inside the community; children and adults who find new ways to direct garbage to handicraft practices or organic waste as fertilizer to plants.

In all of these cases, it is clear the importance of social networks and relationships within these communities. Social connections like those constitute a true social capital, according to Lomnitz (2009). These new arrangements of social actors generate opportunities for the emergence of social innovations. Identifying social innovations in favelas means recognizing new activities or new ideas, that were generated by novel strategies to form social relations among actors, motivated by the goal of meeting common goods to satisfy unmet social needs (Cloutier, 2003; Mulgan, 2007; Phills, 2008). This promotes the local empowerment (Cloutier, 2003; Mulgan, 2007) and a process able to be replicated in other communities (Manzini, 2008). Designers that want to identify social innovations in these communities must understand the way their local actors organise themselves, in order to find alternative tactics to design activities that promote income generation, proper waste disposal, education

and care activities for children, and so forth. The focus would be the generation of shareable benefits, according to the local reality.

Values such as trust, reciprocity, mutual aid and reputation are highly valued within favelas, because of the fact that people depend on their social relations to reach their goals. For this reason, many of the services created within these communities are distinguished as being relational (Cipolla, 2009). This opens a promising field of action for service design, which can collect new ideas for business models, implementing them with its tools and methods.

Service design

The area of service design arises because of the increasing importance of the service sector to the world economy. Manzini (2009) states that “in recent decades the focus has progressively moved towards services, while products have been increasingly seen as ‘service evidences’, i.e. physical elements that make services possible”. (Manzini, 2009, p. 47).

Vargo & Lusch (2004) believe that this transition occurred because of changing paradigms. These authors describe a shift from a good-dominant logic to a service-dominant logic. Before, human activity was based on natural and physical resources and, because of that, the ownership of tangible goods was an indication that a person was rich or not. With the industrial revolution and the consequently standardization of durable goods, products’ differentiation started to be considered as valuable, that is, the skills, knowledge and ways of distribution associated to them. From this point on, the importance of services started to grow.

This movement towards an economy of services reflects in new research in areas such as marketing, management, engineering, computing and behavioural science (Meroni & Sangiorgi, 2011). Consequently, the research and practice in design also searches for new directions, from the production of tangible products, to the development of product-service systems (Manzini & Vezzoli, 2002), capable to provide systemic solutions not only to the people, but also to the economy and environment in which they are. Thus, service design provides a holistic approach to create and implement services, addressing “functionality and form of services from the perspective of the user.” (Mager, 2009, p. 34).

Coming back to the context of favelas and the social innovations identified within them (e.g. caring services for children, services for garbage reuse, alternative communication networks and communitarian cooking services), we can say that there are services in informal settlements that arise from social relations based on the need to solve daily issues. Based on their interests, people may get involved in a process of designing services, where a whole system of supply, production and distribution is planned. In other words, from the case of women that organise places where parents can leave their children during the workday, to people that buy vegetables and fruits to cook and sell them as a food service: all those actors are involved with some kind of creative community. They service their neighbours, friends and relatives, in order to benefit financially and socially from that.

This opens our eyes to important issues. First: those people inside favelas, even being marginalised from the system and with less access to public resources when compared to the rest of the city, succeed in organising themselves and designing their own solutions to their problems. This reminds us the concept of silent design (Gorb & Dumas, 1987), which can be entirely applied here. Gorb & Dumas (1987), when examining the aspects of business

where design is utilized, argue that many design activities that go on in organisations are not called as design. The authors say that those activities are “carried out by individuals who are not called designers and who would not consider themselves to be designers. We have called this 'silent design'.” (Gorb & Dumas, 1987, p. 3). They base their design definition on the well-known concept of Herbert Simon (1982) that defines design as “a course of action aimed at changing existing situations into preferred ones.” (Simon, 1982 cited in Gorb & Dumas, 1987, p. 2). Likewise, the intention of changing an existing reality is present in favelas, where people use the available resources to create collaborative ways to achieve individual and common benefits. This calls our attention to show how the recognition of the local identity, the need to solve problems, and the collaborative capacity of certain human groups motivate people’s ability to design. Second: people within favelas could be successful with their plans, because the local social fabric supported them. With their families, friends and neighbourhood association, they could amplify their networks, to activate external institutions to support them to achieve their own goals. For that, they used their social capital, that is, the values that they could count on: reputation, moral, confidence, and relationships within the local network. This shows how the services that arise from this kind of initiatives are inherently relational, based on collaboration and shared benefits.

In these cases, services can be identified, according to Manzini (2009), as collaborative services. In the same way, many of the services that arise from favelas are relational services (Cipolla, 2009), those “in which participants need not only to be operationally active and collaborative, but also well-inclined and willing to relate with other in a personal manner.” (Cipolla, 2012, p. 35).

Finally, thinking in service design that meets demands coming from social innovations cases, opens field to research about service design for social innovation.

Service design for social innovation

The research and practice in the areas of social innovation and sustainability also contribute to the area of service design, because of the possibility of dematerialization of products (Manzini & Vezzoli, 2002), and the appreciation of services that were born inside creative communities. In the case of product-service-systems, it is possible to offer the value that a product would offer without the need of its possession. Here the central idea is that “users are not really wanting a product or service, but rather what these products and services enable a user to achieve” (Manzini & Vezzoli, 2002, p. 05). Now, when talking about design for social innovation (Manzini, 2008), it is possible to describe the collaborative services that may arise from these types of initiatives, since to happen they “ask for the direct and active involvement of all the interested actors, final users included”. (Manzini, 2009, p. 50). Work performed on projects like EMUDE - Emerging User Demands for Sustainable Solutions - (Meroni, 2007) demonstrate the potential that social innovation has in creating new forms of social organisations, in order to solve demands for services that are not offered by the market or the government. There is, therefore, a possibility of interface between the areas of service design and social innovation, where services could be drawn or implemented from social innovation initiatives. This may be referred to as service design for social innovation.

In order to report how service design could be inspired from social innovation cases to suggest ideas for new models of services, aiming the improvement and replication of their values, this article describes the case of Favela Orgânica. This project is developed within the Favela of Babilônia, Rio de Janeiro, and focuses on the total use of vegetables and fruits

(including their peel, which is their most nutritional part) to prepare food and to incentivise the creation of home gardens.

Favela Orgânica project - context

Favela of Babilônia is located between the neighbourhoods of Botafogo, Urca and Leme, in the south zone of the city of Rio de Janeiro. In 2010, the population of Favela of Babilônia was estimated in 2,451 people, installed in 777 residences (IBGE, 2010). The study developed by FIRJAN – *Federação das Indústrias do Estado do Rio de Janeiro* – shows that, in a population of 2,162 people, 26.9% are poor - the household income is R\$ 235.08 per month, approximately 98.05 US Dollar - and 6.4% are indigents - the household income is R\$ 117.54 per month, approximately 49.03 US Dollar – (FIRJAN, 2010). In spite of the fact that favelas are characterised by informality in several aspects, about 54.3% of Favela of Babilônia's population has a formal job (FIRJAN, 2010).

Regina Tchelly, after years working as a house cleaner, decided to start her own project, based on buffet services and cooking workshops using all parts of vegetable and fruits, including their peel, which is their most nutritional part. With her expertise about cooking, she started to teach people how to prepare recipes as pies, snacks and cakes made with banana peel, the talus of the broccolis, watermelon skin, etc. In the same way, she started to teach how to create small gardens inside home, using the rest of the vegetable waste as fertilizer for plants.

Favela Orgânica as a social innovation case

In order to study the case of Favela Orgânica as a social innovation initiative, informal interviews were made with Regina Tchelly and pictures were taken from her project. The focus was to identify which new ideas, generated by novel strategies to form social relations, were empowering the local community, as well as which new models of services could be imagined from that.

From all the information collected, Favela Orgânica is concluded as a social innovation case because:

- » It stimulates a new way of cooking, which is focused on the total use of vegetables and fruits;
- » It promotes new social interactions between people from the favela and outside of it, since most part of the clients is external. This is strategic to reduce the favela's unfair stereotype and to present its services as also competitive in the market;
- » The service promotes the transmission of a traditional knowledge, what teaches people new ways to deal and appreciate their food;
- » As the initiative goes against the food waste, it is in agreement with a low environmental impact, preventing further formation of organic waste;
- » It regenerates the social fabric, as it generates jobs especially for women in the region.

In figure 1 we can see a picture from the Favela of Babilônia, where the project is developed. It is also possible to see who is Regina Tchelly and some of the local and external actors (Slow Food Brazil) that work for the project to succeed.



Figure 1: Collection of pictures that illustrate the Favela Orgânica project.

Favela Orgânica as a service

When analysing the Favela Orgânica case under the service design perspective, it is possible to highlight the main actions during the service journey (Figure 2).

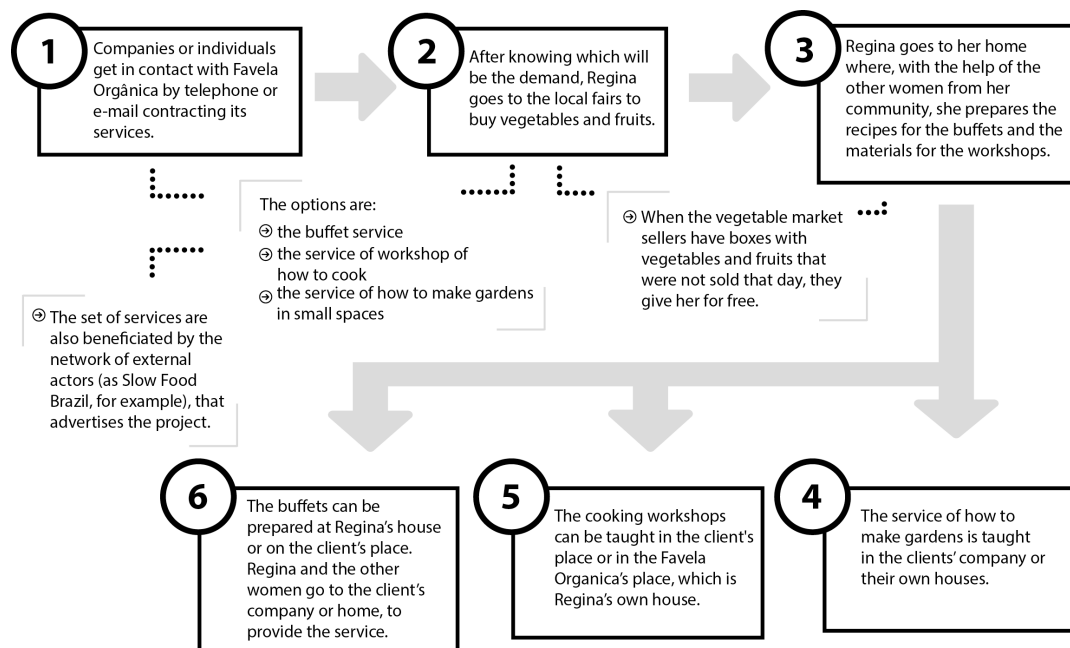


Figure 2: Favela Orgânica's service journey.

From this analysis and the information already presented, it is possible to explain why Favela Orgânica may serve as inspiration for new models of services:

- **Service's origin:** the idea to get the most from all parts of vegetable and fruits was something that was taught by Regina's family and has been improved by experimentation. This indicates a source of potential ideas to create original services – the culture identity.

- **Service model:** the implementation of Favela Orgânica started with Regina and friends; it expanded to the local neighbourhood association that helped it to call external attention of partners, as Slow Food Brazil, what finally led it to become a micro-business. This shows that new models of services can be prototyped from informal basis, what permits them to get adapted according to the situations that arise, until the moment they get mature enough to be formalized.
- **Supply system:** local vegetable sellers provide vegetables and fruits. When they have vegetables that were not sold and that may be spoiled, they give to Regina for free. This creates a relationship of fidelity, since Regina keeps going to buy with the same sellers. This also could be improved by creating a connection with organic farmers that could deliver the vegetables periodically and directly to Regina's house.
- **Service delivery:** Women in uniforms go to the customer's location (company, house, etc.), where usually the service is provided. This strategy makes service delivery more practical for clients that do not have to go until the favela to be served. Besides, Regina teaches courses at her house or at the neighbourhood's association, what can be a differential for people that have curiosity in visiting the favela.

Therefore, Favela Orgânica can be analysed as a collaborative service, since it is based on a system of collaborative social connections. They are local vegetable sellers that sell their products and give Regina the ones that were not sold; the local community helps her to prepare buffets and workshops, and the external supporters, like Slow Food Brazil, that gave to the project material resources to improve its processes and advertise its services. Favela Orgânica is based on trustful relations among those actors, and Regina Tchelly, with all her effort to make the project succeed, is the main actor, whose personal reputation advertises its services outside the favela.

Suggesting new models of services from Favela Orgânica social innovation's case

After analysing Favela Orgânica as a social innovation and a service, it is possible to recognize the values presented by the project, in order to use them to suggest ideas for new models of services. The following values are identified:

- » New ways of cooking;
- » New social relations among actors within a community and between the community and external actors, based on confidence, loyalty and reputation;
- » Transmission of traditional knowledge;
- » Generation of employment and income within the community;
- » Prevention of food waste;
- » Regeneration of the local social fabric.

These collected values are clues to imagine a new set of services models. The services that could be developed from these seeds are rooted in a local context and based on social relationships within a community, which means that they are better adapted to people's reality and likely to create better conditions of life. Thinking about the values proposed by the case of Favela Orgânica, the following ideas were suggested in a design for social innovation course of the Graduation Program of Production Engineering at the Federal University of Rio de Janeiro, in 2013:

- » **My vegetable market seller, my friend:** Service based on the relation between customers and vegetable sellers. People that go to the local vegetable markets to buy fruits and vegetables can take home that ones that will not be sold that day. With that, people can prepare less expensive recipes and sellers earn people's loyalty to buy always with them.
- » **Cooking for learning and learning for cooking:** Service where people from the same community get together to cook and to teach other people from different generations how to cook. While cooking together, people talk and learn about the nutritional value of the food being prepared, as well as having a convivial space within their community.
- » **Decentralized home garden:** A group of people, where each one is responsible to produce one type of vegetable/spice/tea in his own home, in order to share his production in exchange for other products. This would stimulate people to learn about home garden practices and the nutritional/medical value of the species they are planting.
- » **A systemic producing-preparing-eating food service:** An extended partnership among agriculture producers, a group of cooks from the same community and local companies, integrating a whole system of providing organic food, preparing dishes and selling them on-demand for people that work and do not have time to prepare their own food.

All these ideas refer to the possibility of creating services based on already existing social relations. They were not implemented, but they can serve as inspiration to be. They would strength chains of social networks, promoting values as reputation for one side and loyalty for the other. Briefly, they are all win-win relations: all collaborates and all profits from them.

Conclusions

Favelas in Rio de Janeiro are places where it is possible to see great creativity to solve daily problems. In order to work and find new ways of livelihood, it is common that people organise themselves in groups of friends and relatives, so they can collaborate and achieve sharable benefits. The power of these communities comes from their social capital, which increases the chances of finding social innovations cases among them. When service designers face this type of reality, they recognise different ways that people can relate to each other, creating new ways to serve and provide services, already being prototyped in real life. These ongoing experimentations of different ways to collaborate may represent a new generation for services. The presented case of Favela Orgânica demonstrates how an innovation in the way of cooking linked with new partnerships among actors can converge to the creation of a mix of services that empowers the local community and advertises the favela for the rest of the city. The ideas of new service models presented in this article indicate that it is not difficult to innovate, since this can happen by only articulating new forms of partnerships and using the social relations that already exist within a community.

This article demonstrates preliminary results of a research promoted by DESIS network, which is creating a new cluster named Informal, Formal, Collaborative: designing within underserved communities (IFC). The purpose of the IFC cluster is to identify potential ideas for a new generation of services that could be designed from the underserved communities' perspective.

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Brave New Worlds: Transitions in Design Practice

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Abstract

This paper describes transitions currently happening in design practices engaged in service innovation, service design and service futures. It is the result of an empirical research investigation into how design practice is changing and offers insights into four key transitions that have emerged arising from the research. The research imperative is to understand how the roles of design and designers are responding to shifting societal, economic, political and ecological needs. The research investigation involved interviewing and drawing insights from three different communities. In total we interviewed 25 design agencies, five organisations embedding design and 12 design academics. Nine out of the 25 are service design companies, ten are working in the related field of strategy and design innovation and the rest are in other related design disciplines. Although service design companies only form a third of the case studies, it is important that service design looks outside its (blurry) professional boundaries to inform how their own practices can remain relevant to our times. The originality and richness of the research investigation lies in investigating transitions happening in innovative practices that are diverse in terms of disciplines, geography and their approaches, in order to capture how design is changing within different contexts. This research is significant in that it highlights four key transitions happening in both developed markets as well as in emerging markets. These transitions are: 1) The expansion of the designer's role to include new positions as facilitators, educators/capability builders and entrepreneurs. 2) More prominent collaborations by designers with end-users, other designers and professionals from other disciplines. 3) The diversification of business models of a design practice away from a consultancy model. 4) The expectation and requirement of designers to externalise and demonstrate value quickly, clearly and convincingly. The case studies have been compiled into a book, *Design Transitions*, recently published in 2013. The focus of this paper is to articulate these four transitions in more depth and explore their implications for service design practice.

KEYWORDS: changing practices, roles of designers, design value, design management

Introduction

The most interesting creative opportunity for design today is to redesign the very nature of design itself. Tim Brown – foreword to Design Transitions (2013, p. 7)

We live in interesting times – designers are expanding their professional boundaries, moving from designing objects to designing services and experiences, to designing for positive social change. Examples of design operating beyond its traditional boundaries have been discussed and covered extensively in contemporary literature (for example Buchanan, 2001; Burns et al., 2006; Thackara 2007; Brown, 2009). Designers (particularly those involved in designing services) are increasingly expanding their roles (Tan, 2012) and becoming facilitators of creativity, conversation and

collaboration among multiple stakeholder groups (Han, 2011). Design thinking and approaches are also slowly permeating through larger organisations, and many designers now adopt entrepreneurial models where they co-own outcomes and develop and implement ideas with partners. While designers are still very much drawing upon their fundamental skills, their changing roles are witnessing these skills being used in different ways, with different people and in different contexts. But how are design practices changing exactly and what does this mean for service design? What are the drivers of these changes? And where will this ultimately lead service design in the future?

Historically design has undergone several expansions, from craft-based design, to applied aesthetics, to applied (human and social) science, to a more complex science (Findeli, 2001, p. 7-9). This on-going reframing of design practice and the expansion of societal roles for designers is often discussed anecdotally but rarely researched or documented due to its transitory nature. Hence the aim of the original research was to document current transitions experienced through the eyes of the design practitioner and to use these personal reflections to a) understand how the discipline is evolving, b) identify areas of transition, c) uncover emerging areas of innovation and d) reveal gaps in our current understanding of design practices. This paper draws upon insights gained from the research to discuss and speculate on the implications for service design practice.

What are Design Transitions?

John Heskett (2002, p. 6-7) argues that the history of design can be seen as a process of layering:

... in which new developments are added over time to what already exists. This layer, moreover, is not just a process of accumulation or aggregation, but a dynamic interaction in which each new innovative stage changes the role, significance, and function of what survives.

This research posits that design practice is continually changing, adapting and expanding in order to respond to societies' current needs, to maintain economic relevance, or to exploit new technologies. Design transitions (as a term used in this research) are moments when commercial design practices evolve to explore new design trends to maintain economic relevance, to meet societies future needs or to work with new technologies. William Bridges, an organisational consultant in his 2009 book *Managing Transitions* differentiates between changes and transitions. Transitions are when something no longer fits or is inadequate and the transition begins with letting go of this held idea. He suggests that a transition happens when it is "time to let go of an idea or an assumption, a self-image or a dream... A transition concludes when something new emerges from your inner neutral zone" (pp. 97-98). According to Bridges, organisations going through a transition period experience three stages. We have interpreted how these three stages relate to design practices in brackets:

1. Endings (letting go of existing practices and models)
2. Neutral zone (working out their new focus and purpose)
3. New beginnings (forming a view of new practices and models)

Each transition results in designers' creative practices evolving and focusing on different elements of their expertise, and usually involves designers reframing the boundaries in which they operate in and the value of their skills. These transitions are fluid and often not outwardly obvious, hence the need to uncover and document these changes. A transition may result in: an expansion of the core skill-set of a designer; an application of a core skill in a non-traditional manner; an expansion of professional boundaries into management, strategy and policy; changes in outputs and value; and changes in the role of a designer. In each case study, the authors have tried to identify instances where the individual or practice has moved from one state to another by asking them to use project examples to illustrate their perceived transition of practices. The process of collecting stories using

the method of ‘episodic narratives’ (Flick, 1997) helped the study identify individual experiences of change and to connect it to a more abstract, generalised understanding of organisational transitions.

Research questions

In order to capture and consider the current transitions happening in design practice, we captured three different viewpoints from the community. The *first viewpoint* documents designers’ reflections on how their practices are changing. A collection of 25 case studies brings together some of the world’s leading innovative design practices that are challenging the traditional notions of designing and are operating in new design spaces. The authors then explored the working processes of the selected 25 practices, uncovering how they have transformed their practice, and documenting their reflection on these transitions in order to identify the factors driving them. The *second viewpoint* focuses on organisations aiming to introduce and embed design approaches into their core practices and operations. These 5 cases illustrate how design thinking and methodologies are moving beyond the boundaries of design practices and have a new presence inside organisations such as large corporate and government departments. When questioned, the organisations described the context in which design-led approaches are being embedded into their organisation: how this is being done; why they have done so; and what has been its impact. The *final viewpoint* features interviews with 12 leading design academics, aimed at offering additional insights and a critical perspective on the key themes that have emerged from our case studies and interviews. We asked these individuals to share their reflections on how they perceive design as a discipline to be evolving, what factors are driving these changes, and where they see design moving next.

Research process

The research is focused on design fields experiencing the most observable changes, that are challenging their professional boundaries. This led us to focus our research study around the fields of service design, design innovation, creative digital practices, design futures and social design. To select and study examples of how design practices are changing, we used a snowballing sampling approach, a technique for collecting research participants through the identification of initial subjects who then recommend the names of other possible participants (Lewis-Beck et al., 2004). We identified a set of initial criteria, selecting organisations that:

- » Are design-led – meaning that an organisation does not need to consider itself as a design practice or to function as a design consultancy, but it does need to be using design-led approaches in its core philosophy.
- » Are considered by the design community to be ‘innovative’ and ‘pushing boundaries.’
- » Have experienced significant transitions (as defined earlier in the paper) in their practice.

In addition to these criteria, we also wanted case studies to represent a cross section of different design fields, located in different geographic regions, operating in different markets (developed and emerging) and to consist of smaller to more larger, established practices. We began with a long list of suitable practices based on our own research, supplemented by crowdsourcing (by asking the design community to suggest names through social media channels) and finally through a snowballing approach. The initial list consisted of 85 practices subsequently narrowed down to a shortlist based on the criteria set out above. Practices in the shortlist were contacted and asked if they would be interested in being interviewed for the research. We also asked participants to recommend other suitable individuals for us to speak to, as part of the snowballing sampling process. The final list of 42 participants (divided into design practices, non-design practices and design academics) is listed in Table 1 below.

<p>List of design practices (in categories)</p> <p><u>Products/Design Futures:</u> Droog (NL), BERG (UK), Superflux (UK) / <u>Design Art:</u> PHUNK (SIN) / <u>Design of Services:</u> Fjord (UK), live work Brazil (BR), User Studio (FR), WorkPlayExperience (GER) / <u>Social Design:</u> thinkpublic (UK), FutureGov (UK), We Are What We Do (UK), Snook (UK), Uscreates (UK) / <u>Design Research:</u> STBY (UK & NL), Hakuhodo Innovation Lab (JPN) / <u>Strategy/Design/Innovation:</u> DesignThinkers Group (NL), Idiom (IND), INSITUM (BR), Optimal Usability (NZ), frog Asia (CHN), designaffairs Shanghai (CHN), Claro Partners (SP), Asilia (UK & KEN), Zilver Innovation (NL), Ziba (US)</p>
<p>List of organisations looking to embed design-led approaches</p> <p>Novabase (PT), ISVOR (BR), Radboud Reshape (NL), InWithFor & The Australian Centre for Social Innovation (TACSI) (AUT), Minas Gerais Office of Strategic Priorities (BR)</p>
<p>List of design academics interviewed</p> <p>Robert Young (UK), Tom Inns (UK), Banny Banerjee (US), Paul Rodgers (UK), Mike Press (UK), Lucy Kimbell (UK), Carlos Teixeira (US), Ezio Manzini (Italy), Cameron Tonkinwise (US), Andrea Siodmok (UK), Xin Xiangyang (CHN) and Adam Greenfield (US).</p>

Table 1. A list of the range and geographic location of practices and individuals interviewed for this research

A majority of the interviews (65%) were conducted remotely over Skype to save costs, a smaller percentage of the interviews (25%) were conducted face-to-face and the rest through email questions (10%) over a period of 12-months. In most cases we tried to arrange the interviews with the design practices first but due to participants' schedules, there was no fixed sequence in which the interviews were undertaken. In the majority of cases, we interviewed one key individual who has either been a founding member or part of the executive team. In five cases, we interviewed more than one representative from each of the practices. Interviews were recorded and fully transcribed. The transcripts were used as the raw data to confirm if a practice has experienced Bridges' three stages of transitions (2009) and if so to uncover recurring themes (which were coded) and to use these insights to inform the identification of commonly experienced transitions. The research team then shared the written report with the participant(s) to ensure that our narrative interpretation was an accurate reflection of the practice's story. In some cases, it took further discussion to clarify the points made but in a majority of the cases, the practices made minor comments and clarifications, suggesting robust interpretations. Following analysis of the transcripts, we then used the interviews with leading design academics to triangulate and offer critical commentary to the key themes that had emerged in our interviews with the design practices. The result of the study is the identification of four key transitions, which we will now discuss in the next section.

Transition 1: Expanding roles

Today's designers are engaging in a plethora of activities that are redefining the discipline's core practices, taking on new and varied roles beyond that of a form-giver. Some of these new roles have surfaced and become more prominent due to the emergence and establishment of service design projects over the last 13 years (since the first service design company, live|work started in 2001) and the increasing recognition and adoption of design-led approaches in service and product innovation projects. It is not suggested that these roles are new, simply that they are now being performed increasingly by designers due the expansion of design into service, strategic and innovation sectors. Various researchers and design commentators have attempted to identify what these new roles are. For example, Valtonen (2005) maps the changing role of the Finish industrial designer from the 1950's – moving from being the sole creator of primarily products, to working within multi-disciplinary teams to tackle technological complexities, to becoming end-user experts,

to roles in design management, to creating experiences and brands, and finally to that of “pushing innovation” in a national context. In 2007, at the InterSections 07 Conference, conference Chair Jeremy Myerson identified four new roles of the designer as *strategist*, *co-creator*, *storyteller* and *rationalist* (Myerson, 2007). Since then, other initiatives, such as the Victoria & Albert Museum’s think tank, The Future Designer, have also debated the role of the designer as *celebrity*, *collaborator*, *accelerator* and *synthesizer* (V&A, 2008). In 2009, a consolidation of interdisciplinary design projects for the Designing for the 21st Century Research Initiative identified more roles of designers, which included the designer as *negotiator*, *facilitator*, *visualiser*, *navigator*, *mediator* and *coordinator* (Inns, 2009: 24-6). More in-depth research has been conducted on specific roles, for example Han’s doctoral study in 2011 explored how service designers manage multiple stakeholder involvement in complex projects. Following on, another doctoral study by Tan (2012) identified seven roles of designers based on the Dott 07¹ public design commission projects: *facilitator*, *researcher*, *co-creator*, *communicator*, *strategist*, *capability builder* and *entrepreneur*. While this raft of roles are now acknowledged to be part of a designer’s repertoire, the three most often discussed and present in our case studies are the roles of *facilitator*, *educator/capability builder* and *entrepreneur*.

Han (2009) suggests that Service Design projects should be perceived holistically as a process of knowledge generation and diffusion in a social context, involving a complex network of stakeholders. In our case studies the importance of managing this process via the *facilitator* role was frequently discussed, with designers recognised as being the “translator between all other parties...to bridge the different languages of the disciplines and to find common ground” (Futuregov). In project work around customer experience, the designer’s role as facilitator was particularly important due to the numerous channels through which users and customers can now interact with their service providers, and their increasing demands for consistency and clarity across those channels. A key differentiation between the role service designers play as facilitator in contrast to say, management consultants involves the adoption of co-creative approaches to ensure that the needs of the stakeholders are addressed. Designers, unlike management consultants, do not take the position of being the expert on issues, rather as facilitators of stakeholder knowledge and experience. In the *Alzheimer 100* project, thinkpublic had a facilitation role to help shape ideas and encourage confidence in people’s creativity enabling them to make meaningful and significant contributions to the final outcomes. In this role, thinkpublic opened up the design process to enable the public to design as much as possible:

Our role as facilitators started to become quite important here. At that point we were quite purist in our co-design stance, and we were not going to push our own concepts. Instead we would take the role of ‘opportunity spotter’ by supporting people’s ideas and making them happen. This made Alzheimer100 a transition project for us, because we were gradually stepping further away from our position as designers who shaped final ideas.

Facilitating between different internal departments of a company has also become an important role for designers as discussed by the DesignThinkers Group:

We realised from our previous work that companies had a need for innovation facilitators, because they were struggling to collaborate internally. Organisations generally work in silos, and those silos are organised around market-driven efficiency....as facilitators we bring in an outside viewpoint, reinventing collaborations internally to create a culture of trust.

The importance of the designer’s role as *educator* and *capability builder* is most clearly demonstrated within the in-house design teams or large corporations, as evidence by the case studies from Novabase, Portugal’s largest IT company, and Radboud ReShape, a programme run by one of The

¹ Design of the Times 2007 (DOT07) was a programme of public design commissions situated in the North-East of England, co-sponsored by UK’s Design Council and the regional development agency OneNorth East. Its aims were to demonstrate how design and designers could tackle social issues in five broad areas of: health, education, transport, energy and food.

Netherland's largest medical university. For these in-house teams the biggest challenge is not so much up-skilling their fellow employees on design methodology and toolsets, but in changing the mindset and culture of an entire organisation. A common thread emerging from these case studies is the need to develop a training programme that will introduce, familiarise and embed design approaches throughout the organisations in a step-by-step and relevant manner. Pedro Janeiro from Novabase recognises the challenges he faces:

We know it will take time to really embed the culture of Design Thinking into Novabase. To overcome all of the challenges will require a lot more change management than design knowledge, and so we need to combine a lot of the well-proven techniques of change management with Design Thinking approaches.

Carlos Teixeira, Associate Professor at Parsons The New School of Design highlighted that while there is a huge need for design, there is currently a lack of design capacity in emerging markets. For example the population of Italy, around 60 million, would fit in the south Indian state of Karnataka which itself makes up only 5% of the entire population of India. So if the entire design capacity of Italy were brought into India, it would serve only a small fraction of the population. Since it is unrealistic to expect the existing number of designers to meet current needs, especially in the emerging markets, it makes sense for designers to adopt an *educational* and *capability building* role. For the design practices trying to take on this role with clients, this is often best achieved by letting these clients experience the design process for themselves. For example, in Uscreates' case, it is about showing them "how it is done, rather than doing the work on their behalf, thus enabling them to replicate the process (for themselves) in future projects". 'Educating' in this sense is not so much about formal training, but rather embedding a culture of design approaches (through doing), supported with specific tools that can be easily used by organisations without requiring further support from the designers. For example, it is quite common to see toolkits and manuals developed and deployed for this purpose, as demonstrated by Novabase's 'Do-it-Yourself' manual, which explains how Design Thinking can be applied, with details, photos and clear descriptions of the approaches.

The role of the designer as *entrepreneur* – and more recently, as social design entrepreneur – was also a common theme throughout the case studies. Social change through design is not a new phenomenon, there has been a participatory/cooperative design movement in Scandinavia as early as the 1960s and these approaches have continued to be developed throughout the 1980 and 1990s (for example Bjercknes et al., 1987; Greenbaum & Kyng, 1991). This focus on social change has been discussed as one of the key tenets of service design, for example 'transformation design' (Burns et al., 2006) which focuses on public and third-sector context; and practices operating as 'design strategy' and 'social design' (Szebeko & Tan, 2010). However, what distinguishes the transition in practice between the past and current context is that designers are the ones initiating and leading the change. These individuals and practices are also explicitly positioning their practices as social design, and in most cases taking the initiative to conceive, develop and implement new socially focused services. This entrepreneurial aspect coupled with a social agenda is evident in the examples from thinkpublic, FutureGov and HakuHodo Innovation Lab, as they are moving away from the commissioning model to a focus on developing new services and platforms of innovation. For example, thinkpublic realise that if they can design a service for an organisation, they can also design an enterprise – which affords them ownership and steer over the final service and ensures a legacy beyond the project phase. Examples of social enterprises initiated by thinkpublic include the *Relative Friends* and the *After Work Club* services. For thinkpublic, the key challenge in starting a social enterprise is to ensure that the service provided is able to sustain itself. FutureGov is taking a similar approach as they begin to develop and run accelerator programmes in which they share their expertise in creating new products and selling them to the government. In Japan, HakuHodo Innovation Lab has recognised the importance of nurturing innovators through the development of

an innovation ecosystem. They have set up the Japan Innovation Network (JIN) which intends to promote innovation and create a platform for both Japanese and global institutions to actively discuss the reinvention of corporate and social cultures of innovation.

Transition 2: Greater Collaborations

As design moves into a more fundamental, strategic role it has become essential to collaborate with disciplines and groups of people which have historically been outside of a designer's sphere. Robert Young, Professor of Design Practice at Northumbria University, sees this as the real opportunity and growth area for design education, and for designers "to act as interpolators for commercial companies, managing the cross-fertilization of disciplines in order to connect the dots, and bring products and services into being." The term 'wicked problem' has been used to describe problems that are highly complex and multifaceted, with no clear single discipline solution, and in response to this examples from the case studies indicate that designers are seeking out new collaborations with users, professionals from other disciplines, and networks of like-minded individuals to address these issues.

Designers and users

The realisation that the true drivers of change are often the end users, rather than the designer or their client organisation, has precipitated a need for designers to develop a better understanding of user and customer contexts. The move from designing *for* users to designing *with* users (Sanders, 2002) is not new, however what was once seen as a 'best practice' approach is now seen to be absolutely crucial for the success of the project, particularly in a service design and service innovation context. Tim Brown notes in his foreword to the Design Transition book (2013) that the rise of designing *by* users highlights how the democratization of many steps in the 'design supply chain' are forcing designers to reconsider their relationship with the users. As such, designers cannot simply pay 'lip-service' to the needs of users but must fundamentally change the way they perceive and collaborate with users. Users are not just there to 'test' and validate results, but are increasingly used to identify design opportunities and to help shape design briefs. At Idiom in India, design is used as a catalyst for radical innovation through their DREAM:IN project. The DREAM:IN project is a radical innovation project using an 'inside-out' process to change the focus from needs to dreams. It is an attempt to get people to think about sustainable ideas by creating new value and new meaning. Idiom's process uses collaborators, or 'Dreamcatchers' (trained field researchers), to connect with people and understand their dreams. The process then involves using insights gained from these 'dreams' to drive investments to help fulfil these needs and aspirations. The success of the DREAM:IN process has led to a DREAM:IN Brazil version that ran in 2012 and the creation of DREAM:IN Next Gen, which serves as an incubator space for new enterprises emerging from the project. Treating users as partners in the design process is particularly evident in Radboud REshape's example. Radboud REshape programme is part of the Radboud University Medical Centre, a teaching hospital, based in Nijmegen, The Netherlands. The programme was set up in 2010 in order to change the way healthcare is delivered by focusing on patient-centred care and bringing healthcare innovation into practice. All their projects are based on co-creation by involving the patient.

Our goal is to treat patients as our partners, and we would like to be partners to our patients. This means that we are no longer trying to change the workflow of patients to suit our system. It is not simply about changing the doctor's processes to suit the patient, rather that we need to design a process that will benefit both sides. (Lucien Engelen, founding director of Radboud REShape programme)

Designers and other professionals

The culture change required before design can create genuine value within organisations (Design Council, 2013) has triggered recognition of another form of collaboration, between designers and the field of change management. Design practices including Optimal Usability, Claro Partners, STBY, FutureGov and thinkpublic, along with IT organisation Novabase, described in their stories the need for designers to “get better at change management” (Novabase) in order to “influence organisational cultures” (Optimal Usability). The challenge faced by Optimal Usability in enacting systemic change in large organisations like telecommunication companies or government agencies is their ability to influence organisational cultures. To do this effectively, requires working with change management professionals to support the changes that need to take place in these projects. In contrast, Claro Partners takes a different approach by offering their clients tools to enable them to manage their change, since they recognise that they are not change management experts. Novabase realised that to truly embed design thinking into any organisation as part of its core philosophy involves changing ways of working and change management is required to manage this long-term transition.

For FutureGov, the need to bring together other professionals, technology and design was essential in their project, *Patchwork* to embed the changes required. The *Patchwork* project was a response to the ‘Baby Peter’ incident, in which a 17-month old boy died in London after suffering more than 50 injuries – despite having repeated contact with social services over an eight-month period. This tragedy highlighted serious failings in the UK’s child protection services, failings indicating a lack of coordinated thinking across agencies working with children. As a result, FutureGov put out an open call for support from a diverse group of practitioners, parents, technologists and researchers to find ways of improving the coordination and sharing of information. With a number of collaborators and partners, they worked on developing a secure web based platform aimed at joining up the teams responsible for supporting families, in order to enable earlier interventions and better outcomes.

Designers and networks

Although design practices tend to remain small, reflecting a desire to maintain flexibility and preserve their innovative cultures, they are also seeking ways to address larger scale problems by collaborating with other practices. Carlos Teixeira is adamant that one way to address the problem of scalability is by designers working together through the use of networks. For example, DesignThinkers Group, FutureGov, INSITUM, Superflux, STBY and User Studio rely on their global networks of associate designers on a regular basis. STBY call this ‘networked collaboration’, and their REACH Network (a global design research network) is a prime example of this collaboration in action – allowing small local design companies to retain their lean approaches while participating in complex international projects. The REACH network (consisting of eleven partners located around the world) was created to address the needs of clients interested in finding a balance between a general global service offering, and bespoke customised offerings for specific contexts. The power of networks is also evident in the number of communities built and driven by the DesignThinkers Group. Bringing people together and building communities is a key enabler of the DesignThinkers Group innovation facilitation role and they do this in a number of ways: through the DesignThinking network; Designers DNA; StartUpLab; and the DesignThinkers Academy. DesignThinking network is an open network of professionals engaging with Design Thinking, while DesignersDNA is a closed platform to help clients from large organisations build partnerships with each other and co-develop services.

Transition 3: Diversifying Business Models

This transition connects with the first transition of expanding roles, specifically relating to the entrepreneurial role of the designer. While the attribute of being entrepreneurial is often discussed about in the context of an individual, the diversification of business models can be more closely linked to organisational transition. A majority of the design organisations interviewed for this research started as a consultancy, where design expertise was offered to meet the needs of the client. Almost all of these organisations have since diversified into a range of different business formats designed to better respond to their particular clients' needs and external environmental demands. As we moved from an industrial to post-industrial age, the relationship between design and industry also changed, and this is manifested in how designers are changing their modes of operation.

In the social space, FutureGov have transitioned their business model “away from change consultancy [and towards] a wholehearted commitment to using consultancy to generate ideas for products that can transform the sector at scale”. Their work on the *Patchwork* project and the *Cassorole Club* have been self-initiated and self-sustaining, where the traditional ‘client’ and ‘designer’ relationship does not pertain. Instead, they applied a more entrepreneurial approach, and sought initial partners and funding to build a credible prototype before approaching councils to trial the system. Similarly, thinkpublic have taken the initiative and launched social enterprises such as *Relative Friends* and the *After Work Club* to tackle the growing challenge of social isolation. All of these design practices have identified, and then responded to, unmet needs in the marketplace and in society.

A discernable change to design's traditional business model is that increasing number of design companies are now launching their own products and services into the marketplace. Optimal Usability created a spin off company, Optimal Workshop, to act as a product development company which licenses research tools that have been developed in-house to organisations. Increasingly, design practices are developing their own internal R&D departments in order to experiment and test out new ideas. At BERG, Droog, Superflux and User Studio these are distinct areas of the business where their designers can pursue personal projects, developing new product and service ideas while allowing individuals to drive creativity, expand their own horizons and push business boundaries. At PHUNK, commercial and personal work have run side by side since the company was founded, with a simultaneous focus on creating new revenue streams for the practice while maintaining a strong personal voice in their work. However, it is the work emerging from BERG's own R&D work that has resulted in perhaps one of the most extreme transition emerging from our practices thus far. BERG is a well-respected and globally known design company best known for their work with companies like the BBC, Google and Intel. In parallel with their consultancy work they have also been developing their own product, *Little Printer*, a web-connected printer which enables people to use their mobile phone to configure the type of online information that they wish to receive and print (for example tweets, news, calendar notifications). The *BERG Cloud* platform was created to support the use of *Little Printer* and is designed to function as an operating system for connected products. As a result of its popularity and the huge interest in the product, BERG announced in October 2013 that it is repositioning itself, moving away from a digital product design company in an agency/client model, to a product-based start-up with the launch of their *BERG Cloud* platform to the wider public.

The diversification of design business models has demonstrated designers' abilities to respond to external forces as well as to embrace the opportunities offered by networked technologies and the increasing affordability of manufacturing processes. BERG's example illustrates the move from a design consultancy, to abandoning this model altogether to concentrate on being a product-focused technology start-up. While this is an extreme example, the general trend indicates that designers are

moving away from acting solely as consultants, to also acting as entrepreneurs, partners and collaborators. This diversification provides designers with fresh opportunities to engage in long-term change projects, while increasing their flexibility and giving them the freedom to explore new business areas in challenging economic times.

Transition 4: Externalising Approaches and Demonstrating Value

As design moves from styling, to process, to strategy roles (Danish Design Centre, 2003) it has become ever more important to make explicit the value of design, to isolate and evidence the field's distinctive impact. Many of the practices interviewed for this research discussed changing their approaches in order to demonstrate the value of the design process as quickly as possible. BERG, Fjord and thinkpublic all discussed about an increasing demand from clients for an earlier engagement in prototyping. This has enabled designers and their clients to start “trying things out rather than imagining” (Fjord), and to “find out as fast as possible what works, what does not” (BERG). Despite an increasingly widespread understanding that design can add significant value to organisations of numerous types, design is still a hard sell in many of the emerging markets, as confirmed by the experiences of INSITUM, Idiom, frog Asia, designaffairs Shanghai and live|work Brazil. These practices have all had to work hard at educating their clients on the value design can bring, and its role in innovating products, services and systems. Most of the ‘educational’ activities take the form of co-creation workshops to enable clients to experience first hand how design works. Frog Asia reflects on why they prefer to work this way:

We prefer to be working closely with our clients, not only to ensure that we are working from the same page but also because our clients like to roll up their sleeves and get their hands dirty. They want to learn how we do what we do... as we are not a university we do not teach them in the usual way; instead we transfer our knowledge by working with them.

Practices also recognised that without initially building up the trust and understanding of what a design approach can offer, it would be difficult to progress to larger more strategic projects. Here INSITUM talk about the need to educate as a way of building client relationships.

In emerging markets we have to carry out a lot of educational activities with our clients. Companies are used to market research, but they are not familiar with innovation consulting. As we work with them, we help to develop their teams and make them more sensitive to innovation and Design Thinking approaches.

Conclusion

Having identified and discussed the four key transitions that are evident in a diverse and broad range of design practices, we conclude by briefly discussing how these transitions will impact on the practice of service design from three perspectives: designer, design educators and organisations. A significant challenge faced by today's service designer is the need to communicate to external audiences the full range of their skillset, beyond the more obvious and tangible craft skills. This is especially important since the design of services involves (rightly or wrongly) the design of human behaviour in an explicit manner. The designer's ability to empathise, visualise, synthesise and bring about resolution are the skills that are driving their transition into new and expanded roles. These skills also influence the way they collaborate with their users, partners and peers, and are particularly important in light of the new opportunities being presented for designers to build design capability within organisations. This leads to the question of whether designers have the leadership skills required to facilitate change in an organisation. Only a rare few designers have demonstrated the capability to take on this role (a prominent example is of course, Jonathan Ive at

Apple) but for the majority of designers, this requirement would be a huge challenge to their current practice. It is also important to note that while the designers interviewed have at some point taken on a new role, it was often done so subconsciously and out of necessity. In a majority of the cases, these roles are merely a by-product of what they set out to achieve. It is important that service designers learn to recognise the situations that require them to take on a particular role.

For design educators, the time has come to move beyond the educational models previously defined by the industrial revolution. In a post-industrial era educators must balance the nurturing of core skills such as sketching, and visualisation, with the development of new softer skills and traits such as facilitation, collaboration and empathy, especially important in the management of stakeholder involvement in complex projects. Students need to be able to identify the value they have to offer as service designers, and also the value they have to gain through interacting with other disciplines. The challenge for educators is to work out what to include in (and exclude from) the curriculum in order to equip their students to act effectively as managers, facilitators, educators, entrepreneurs and communicators. The disciplinary silos that continue to exist within education – while important to the development of the student's identity as a designer – may also prove a hindrance in an age of multi-disciplinary team-working.

And finally, for organisations looking to embed service design in their practice, the challenge is to adapt design's toolkit and methods to ensure relevance to their needs. Companies like Novabase have shown that simply applying a prescribed process or method will not work; rather a process of translation and adaptation is required, in order to make those methods relevant to the given context. Design leadership will also be key, since the successes seen in our five non-design case studies all rest on the work of strong individuals and teams championing the value of design in a transparent and simple manner, with the support of senior management. These insights echo Bailey's (2012) findings that maintaining management support is crucial to how effectively design thinking and practices are disseminated across the organisation.

This research has wide implications for design as a whole but in this paper we have tried to highlight ones that are of particular relevance to Service Design. It is important to note that these insights are derived from observations taken at a specific moment in time in a fast evolving discipline. As we conclude this paper, we are already beginning to observe further transitions on the horizon waiting to be explored.

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Design for Social Innovation. Building a framework of connection between Design and Social Innovation.

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Abstract

The paper discusses the connections between social innovation and design practice/research outlining possible challenges for innovating in the service field. Social Innovation is one of the most promising frameworks for delivering service innovation that is receiving increasing attention from governments, academy, and businesses alike. Design is described as a privileged path to innovation, because it can establish a link with creativity and outline more efficient processes. The paper aims to provide a platform for discussion and learning that can ground a connection between the two topics. Moreover, it offers a critique of what has been achieved while highlighting the main questions for future development.

KEYWORDS: social innovation, service innovation, collaborating, participating, networking

Social Innovation: definitions and descriptions

The international debate on innovation demonstrates that the technology-oriented paradigm characterizing the industrial society does not include the wider range of innovations depicting the transition from an industrial to a knowledge and service-based society (EU, 2010). This means that innovation requires also societal changes and the inclusion of key social concerns in the wealth of innovation approaches. Further, it implies opening up and revising the innovative process to connect differently needs and resources, and to re-assign roles and responsibilities to companies, institutions, universities and citizens. This is argued by scholars (Franz et al., 2011) as well as governmental institutions (Nesta, 2010) to strengthen the emergent debate and connect design and social innovation further on a theoretical level. In line with these perspectives, the present paper considers innovation beyond the social aspects recognized in the Oslo Manual (OECD, 2005). To recognize social innovation as a field of investigation in its on right, it argues that diverse perspectives need to be acknowledged resembling the variety of innovation fields – from product and

marketing innovation to psychological innovation (Mortati, 2013). Social innovations are driven by a social mission, and create value that is at once social and economical. BEPA differentiates them in *social*, *societal* and *systemic*, according to the scope. Social is defined as “social demands that are traditionally not addressed by the market or existing institutions and are directed towards vulnerable groups in society” (BEPA, 2011, p. 43); societal is defined as “societal challenges in which the boundary between ‘social’ and ‘economic’ blurs, and which are directed towards society as a whole” (ibid., p. 43); systemic is described as “reshaping society” (ibid., p. 42) “in the direction of a more participative arena where empowerment and learning are sources and outcomes of well-being” (ibid., p. 43).

Social innovation thus refers to the capacity of improving social outcomes and creating value for people, places and organizations. In particular, it focuses on new ideas aimed at provoking a positive transformation for the society and its infrastructures (people, relationships, collaborations) thus improving society’s capacity to act (BEPA, 2011). A widely shared definition describes it as new, more effective and/or more efficient social practices with social ends and social means (Franz et al., 2011) open to the territorial, cultural, and historical variations it might take. The social side is both in the how - the process of innovation - and in the why - the social and societal goals to be reached. Institutions, universities, researchers and companies are exploring these issues to find new solutions to pressing social needs, in response to current challenges like sustainability, health, wellbeing, education, training, urban development, energy consumption, jobs and quality of life. For example an interesting approach refers to kick-starting collective and collaborative actions to enhance places and create value for people (Manzini, 2014; Villari, 2013). Social innovation solutions are centred on: citizens and communities devising and promoting different ways to answer to social and local needs (services like heyneighbor.com, connectaid.com, sharesomesugar.com, etc.); municipalities and governments activating participatory processes to involve the public in urban planning and public services improvement (initiatives such as Collaborative London, and Creative cities); organisations and networks that leverage on local capacities to create new jobs and to promote new ways of producing and distributing (initiatives like sfmade.org, and innovetionvalley.com).

Social innovation is particularly relevant to service innovation, where a more systemic attention is given to changes. As the world and the economy move increasingly out of an industrial mind-set, products need to be understood and designed as parts of larger service networks. These encompass people, technology, places, time, objects, and organisations that together create the service ecology (Polaine, 2013). The idea of devising interacting and interconnected parts of a system rather than single elements, and the focus on intangible things as well as tangible ones, is at the centre of the connection between social innovation and service innovation. We argue that this represents one of the most interesting contributions design can make to current challenges, that is by participating to reshaping big issues like the transformation of transport systems, sustainability, governments, finance, communication, healthcare, and so on. The growing number of current experimentations on these topics witnesses the value of this connection. However, not all initiatives and projects bare a real value for transformation. Moreover some of them are pilot projects that struggle to find a proper viability plan to move forward. The shared intent is to raise awareness around social concerns and the value of participation/collaboration to awake the spirit of citizens, and lead them to step forward for renewing places and practices bottom up, and to suggest new ways to put local resources at the core of the reconstruction. Initiatives like San Francisco Made (SFMade - www.sfmade.org) signal the importance of giving citizens tools and platforms to participate in the development of their city as well as in the creation of a thriving local community through the values of manufacturing and the support of local

companies. This includes encouraging entrepreneurship and innovation, creating new job opportunities for the local workforce, contributing to establishing a sustainable local economic system, offering diverse educational opportunities, and raising public awareness on the importance of local craft practice and of the role of craftspeople in the local community.

The connection between design and social innovation is becoming relevant to describe both an alternative practice-based model for new prosperity and growth, and a theoretical framework to orienteer and envision the societal challenges for 2020 (EC, Horizon 2020). The description of this connection is the main topic of the paper, to start a discussion on how design could contribute to social innovation not only on a phenomenological level, but also from a theoretical perspective.

Connecting social innovation and design

Traditionally, design has been linked to industry to devise objects as mass produced goods. This attention has included services as less tangible objects enlarging design concerns also to interactions. Service Design and Design for Services have initially contributed understanding of technological interfaces and their relationship with final users to then move further toward non-technological and community oriented approaches and topics. The duality between technological and non-technological is still unresolved within the discipline, and raises a very interesting debate useful to understanding both the roots and the future of service design as well as the connection between design and innovation in general. Although the intention of this paper is not to provide an overview of the evolution of service design and design for services, it is interesting to notice how design practices linked to the service field have recently paid increasing attention to social issues and human-centred concerns, to the importance of devising relationships, to the development of practices to aid citizen participation, and to systemic interventions. Design seems to be moving closer to social innovation linking with its key characteristics at multiple levels. In particular, shared interests encompass systemic solutions that integrate products, services and interactions/relationships to respond to social needs, and multidisciplinary as a key approach to make sense of social challenges while supporting competitiveness and growth. Further, direct connections between design and social innovation can be found in:

- » The focus on humans/people as the main beneficiaries of solutions – typical in design since Rittel (1987) and currently updated in design thinking, human-centred design, community centred design, etc.;
- » The goal of improving life conditions and societal situations into preferred ones – acknowledged within the seminal definition given by Simon;
- » The importance of prototyping/piloting solutions within iterative cycles in order to achieve the best outcome possible – again a traditional concern for design;
- » The attention to the interplay/relationships to create an empowering solution that remains beyond physical manifestations – a more recent attention born within product-service system design, service design, systems design.

In light of these connections, design is considering social innovation as one of the privileged topics and crucial approach to contribute to the positive transformation of society out of the socio-economical and civic/political crisis that has now long destabilised Europe and the world. Here, social innovation seems to signal the viability of an approach that involves citizens in co-imaging and co-producing a social change, thus enhancing society's capacity to act.

In particular, authors have recognized three main topics explored to envision future challenges for social innovation and design:

- » Citizen empowerment, spanning from the design of appropriate tools and platforms for citizens engagement (i.e. CriticalCity.org, prestiamoci.it, couchsurfing phenomena) up to methods to contribute to civic life improvement and support policies transformation (i.e. services as partecipa.gov.it);
- » New socio-productive processes, centred on envisioning a re-direction of production back to urban contexts and toward more sustainable practices (i.e. crowdfunding activities);
- » New systems, providing viable examples of innovations and understanding how they could be replicated at larger scales for wider systemic change (edgeryders.eu).

The connection between design and social innovation is *deepening* the practices and tools for citizen empowerment and engagement, *upscaling* the solutions for re-thinking the traditional relationship with industry, *outreaching* to examine the impact, replicability, and viability of solutions on a larger systemic scale. Challenges are enlarging requiring a multi-expert approach where designers are no longer the main source of creativity and innovation, but rather cultural provokers that stimulate critical thinking in people and on how they could act to change their surroundings (Margolin, 1989; Mortati, 2013). The following paragraphs will explore further these topics to frame the discussion around the connection between design and social innovation as a way to contribute to service innovation. Moreover, the remainder of the paper will identify discussion points for furthering this field of research, and detailing a starting framework useful to read design interventions/possibilities for social innovation.

Deepen: practices and tools for citizen empowerment and engagement

Citizen engagement and empowerment are some of the keys to read the connection between design and social innovation. Solutions and tools are proposed to enhance citizens' capacity to act on the place they inhabit. This is a privileged means to generate social change, and it is the core to transformative practices lead by design. People are engaged directly in the design process with an active role in design, production, and distribution of goods (Cottam & Leadbeter, 2004; Botsman & Rogers, 2010). Moreover, public administrations are increasingly interested in experimenting user-centric processes that consider citizens as active agents of change (Bovaird, 2007; Lukensmeyer, 2007). Traditionally, design has paid much attention to user involvement using and developing participative and collaborative approaches (e.g. user centred design, participatory design, co-design, emancipatory design, community centred design, human centred design) that support collective creativity and collaboration with every-day people (Sanders, 2006). These explore the importance of involving users in the design process with different roles (e.g. to give feedback or to become co-decision makers) and with slight differences in the stages and techniques for engagement (Holmlid, 2009; Bradwell & Marr, 2008; Sanders, 2008). However, participation and citizen

involvement have been developed through various methods, and experimented in many forms. For example governments have always looked for the appropriate ways to involve/consult people on their opinions and needs (Holmes, 2011). In particular, citizen engagement identifies a family of concepts that span from public participation and public involvement, to participatory democracy, deliberative democracy, and collaborative governance (Lukensmeyer & Torres, 2006). These embrace government support, mutual help, information sharing, and involvement in policymaking. Examples are blogs and forums, online tools that enable a partnership and dialogue between public and decision-makers. This field of application is recently inquired looking at more systemic approaches like Transformation Design (Burns et al., 2006; Sangiorgi, 2011), whose focus considers both the engagement of users, the impact of the intervention and the importance of empowerment. Moreover, these practices are often linked to a specific context, with its specific knowledge and culture, thus calling for specific skills.

Three issues characterize the idea of *deepening* practice and tools for social innovation:

- » The *geographical embeddedness* of collaborative approaches;
- » The creation of value rather than its delivery, because ideas are not superimposed but generated together;
- » The importance of local characteristics as crucial resources, for example underpinning the idea of *social embeddedness* proposed by Granovetter (2005).

Upscale: solutions for re-thinking the traditional relationship with industry

Building on the importance of designing processes rather than finished results, design is upscaling its concerns to re-think its traditional relationship with industry. This is incorporating both the idea that industry is changing form and aim, and the role/relationship designers can have in its transformation. Design is traditionally focused on manufacturing, industrial goods produced in large scale, consumer taste, function, price, and so on. This is close to a tradition that has positioned it as an alternative to stalling technological innovation, as it happened for Walter Rathenau and the beginning of his collaboration with AEG. In this paradigm, design mainly looked at giving shape to things (products or services), and this defined also its main contribution to innovation. Although the aim of giving shape to things is still the primary concern of this discipline, in the current scenario the *things* design is concerned with are shifting. Firms and manufacturing plants are changing form, function, location, and meaning, as much as all societal actors are looking differently at their contribution to civic, economic, and social life. Wider challenges are pushing design to revise the ways in which it produces and proposes product/service solutions, and to create a different relationship with citizens also covering a cultural role. For example, designers are experimenting around the idea of creating distributed factories highly linked to the know-how of local excellent small producers to create sustainable productive networks. Here they are acting not only as experimenters, but also as thought provokers and cultural stimuli for social innovators. 'SlowD' for example (www.slowd.it) connects designers, artisans, and people to define and experiment a new manufacturing culture based on a *zeromiles* community (geographically embedded) that generates an adaptive and flexible network for manufacturing. 'InternoItaliano' (www.internoitaliano.com) is centred on the idea of a distributed factory that joins small local producers, geographically distributed. These are linked by creativity and ideas where designers are the *connectors*. Further, designers are becoming producers inventing simplified manufacturing machines. Dirk Vander Kooij (www.dirkvanderkooij.nl), for

example, has transformed an old robotic arm in a machine for producing plastic chairs; Open Source Ecology (www.opensourceecology.org) is reinventing - open source - all the basic machines to start a civilisation from farming. Adam Friedman (2011) connects this phenomenon to urban contexts, and calls it *Small Urban Manufacturers*. These are small companies that produce very high value, design-oriented products. They are located within cities and are directly linked to final users to respond to market demands. This type of *micro* firms contains no internal assets (i.e. no productive plant) but focus on the social exchange and the relationships to achieve innovation.

Three issues characterize the idea of *upscaling* the traditional relationship between design and industry:

- » The minimum design unit that provokes larger scale transformations is bigger than the single user typical of more traditional design projects; communities or networks are becoming design subjects;
- » The focus is no longer only on the outputs, but on the process itself; depending on evolving situations, the tools left help adapt design solutions;
- » The final result can only be decided by the group involved, and varies depending on the context, the people, and competences involved.

Outreach: impact, replicability, and viability of solutions on a larger systemic scale

Finally the relationship between design and social innovation is outreaching to identify methods and tools to measure the impact, the replicability, and the viability of the solutions proposed. As mentioned in previous paragraphs, social innovators are changing the way governments work, the way civil society achieves impact, and the way business is transacted. The economic crisis has forced Europe to rapidly face the public sector debt and companies to severely reduce the use and waste of resources; services need to be designed and delivered in more efficient ways; long term effects of demographic and climate change represent a crucial issue for public and private economic and social actors. The urgency to think about radical solutions is on the agenda of policy makers and opinion leaders all over the world. On this topic, Nesta (2010) has recently proposed the *radical efficiency* model as a new framework to support sustainable growth based on heavy cuts in public spending. This discusses and supports new customers' needs as active parts in solving new challenges, new suppliers that include users in this role, new way of using available resources including knowledge and data. In the framework, problems are approached in systemic ways, to consider all the elements useful to designing an impactful solution. Systemic social innovation occurs when a number of complementary and interconnected innovations happen in parallel to impact a social issue. For example a systemic approach could be important to devise social services for the elderly at many different scales: to help aging people be autonomous for longer (for example the HealthConnect service developed by Engine, aimed at developing proposals to improve access to health and social care services in Buckinghamshire - UK), to provide more efficient support at home rather than in public structures (Ambulatory Emergency Care designed by Thinkpublic for NHS Institute is an example of this), to enable local administrations and policy makers to manage policies for active ageing more effectively and with reduced budgets (the European project DAA – Design-led innovation for active ageing - <http://daaproject.eu> - is working on this direction involving network of cities that drastically need to find economic and innovative solutions for senior care). Accordingly, Greenhalgh et al. define innovation in service delivery and

organization as a “novel set of behaviours, routines, and ways of working that are directed at improving health outcomes, administrative efficiency, cost effectiveness, or users’ experience and that are implemented by planned and coordinated actions” (2004, p. 1). The health care field is exemplar for the complex and networked nature of systemic change. This makes systemic social innovation slower and more difficult to be achieved, as constraints are higher in number. Moreover, combinations involve changes in technologies and behaviours, structures, and processes, which are more difficult to be shifted, as they tend to organise around current interests to maintain a status quo. Despite constraints, larger scale systemic changes are crucial to reach the radical efficiency currently required, thus deserving further attention for development, test, and evaluation. Appropriate measures of the impact of such change are still missing, and are now scoring high in the agenda of governments across Europe to define the qualitative indicators that could prove the efficacy of systemic social innovation. There is no simple solution to better assessment. The call is for tools that can capture the qualitative sides and effects of innovation and social impact to shift understanding of where money investment is really valuable. Some of these barriers are cultural, some are financial, and some relate to the sheer complexity of organising knowledge at many scales, using evaluators with different competences, defining and applying new measurements for the impact of innovations both in the short and long terms.

Implications and open discussions

Although the number of projects and practitioners working within social innovation is starting to grow steadily, this field still bares a lack of theory and structured reflection on the pilot actions delivered. The link between design and social innovation is currently mainly dependent on the hands-on experiments and tools that practitioners devise on field. However, the growth of awareness and recognition needed for social innovation would greatly benefit from further discussion coming from a theoretical perspective. Interesting debates should encompass the description of the topics that characterise social innovation, the elements that help make a distinction from more classical innovation concepts, and the issues that need further investigation from both a practical and a theoretical point of view. In particular, we propose three assets for social innovation research that need to be further framed in the disciplinary community and discourse:

- » **Participation**, as the ability to empower local stakeholders, and support knowledge sharing through opening up solutions and engaging citizens directly and recognizing them as co-producers of value;
- » **Collaboration**, as the need and the ability to use creativity for connecting different actors/stakeholders, and to provoke social innovation through negotiating processes;
- » **Networking**, as the importance to think systemically through understanding and maximising relationships and resources and connecting all material and immaterial elements (people, places, infrastructures, history, tradition, knowledge, know-how) in a context to allow social innovations to happen.

Each of these assets entails a set of skills that should be further understood for a proper debate in the design education discourse, and in its current experimentations (Mortati & Villari, 2013). Namely:

- » Participation is the capacity to enable co-created solutions, and achieving the emancipation of users through giving them ownership of the solution. This means triggering engagement, and developing social sharing platforms. Designers give

- particular attention to user involvement, and actively look for new ways to support collective creativity and collaboration with citizens (Sanders, 2006);
- » Collaboration translates in the capacity of leveraging collective creativity for addressing social needs – designers already use tools and methods to stimulate shared creativity and to foster co-production of meaning and solutions, they consistently care about people, and their interactions from the beginning of the design process;
 - » Networking becomes the capacity to rearrange organizational processes to regenerate/adapt solutions, and to build effective relationships (between all elements of the system) for resilience. Designers create systemic and holistic visions thanks to which they consider problems more broadly. Owen (2007) for example considers designers as practitioners capable of treating problems as systemic challenges that involve a mix of hardware, software, procedures, policies, organizational concepts and whatever else is necessary for a holistic solution.

Design for social innovation aims at empowering people in *designerly ways*, thus enabling them to have an active role in promoting change by themselves. People and their needs are at the centre of solutions where collaboration, participation and networking are *designed with and for* – they are the main topics/object of this type of design.

Conclusions

This paper has briefly outlined some of the main challenges that design is considering when investigating social innovation. The relationship between social innovation and design is often described through methodologies and projects that practitioners experiment. The paper has provided an overview and initial framework to reflect on these experiments also from a theoretical perspective, which is currently looking for further debate. This is useful to start proving both an impact of social innovations and their systemic nature, and a clearer role for design in an emergent field where everyone is called forward to contribute creativity, ideas, knowledge, and resources. Considering social innovation a key area for service innovation, the authors have described three main topics in which design can support social innovation and develop research directions. These can be summarised as:

- » Citizen empowerment which encompasses the involvement of civic society in supporting social innovation through active participation;
- » New socio-productive processes as the arena of the new ways of producing and distributing goods that is characterizing the ‘third industrial revolution’;
- » New systems as the way of considering social innovation the actions that can be replicated at larger scales to provoke systemic change.

Further, these topics have been explored through systematising the wide number of existing experimentations and projects in an interpretative framework. This has read design for social innovation as deepening, upscaling, and outreaching its practices. Finally, three assets for social innovation research have been put forward to call for an advancement of the field also from a theoretical perspective. In particular, **participation** has been discussed as the importance to deepen practices and tools for citizen empowerment and engagement; **collaboration** has been linked to upscaling solutions for re-thinking the traditional relationship between design and industry; **networking** has been investigated as the outreach to analyse the impact, replicability, and viability of larger scale systemic solutions. The debate on Design for Social innovation is on-going. Its development offers - on the one side - the opportunity to further investigate the areas that define a theoretical framework - on the other - it develops and enriches service innovation. However, the design approach to social

innovation deserves further exploration to reflect on how to design new services, how they are socially and economically sustainable, how service enterprises can foster innovation in the current society.

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The role of Service Design in the Effectual Journey of Social Entrepreneurs

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Abstract

The paper explores the common ground between the fields of social entrepreneurship and service design, in order to understand how the role of designers in social innovation projects relates to that of social entrepreneurs and identify new ways to connect the design practice with social transformation and social impact. To achieve this, the construct of effectuation in entrepreneurship is discussed, followed by suggestions on how it reveals fertile areas for research across the fields of service design and social entrepreneurship.

KEYWORDS: social entrepreneurship, service design, effectuation

Introduction

The term social innovation has been used to communicate different concepts across different areas of practice. It is used to describe novel programmes of governance, public services and processes of societal transformation (Mulgan, 2006), grass roots activities of local communities (Manzini, 2007) and wider systemic transformation (European Commission, 2010, p. 11). Defined as new ideas that meet social needs having both social goals and means and creating new social relations and collaborations (Murray et al., 2010) social innovations take the form of new products or services, new markets, processes, organizational forms and business models.

The study of social innovation and the contribution of service design in imagining and implementing social change has been recognised as one of the key emerging areas of service design research (Sangiorgi, 2010). This reflects the ubiquity of services and the realisation that due to their co-creative nature they can frame new, better ways of living with the potential for significant social impact.

Another field, which looks at the development of new ideas to meet social need, is that of social entrepreneurship. By challenging the economic discourse that is dominating the field

of entrepreneurship, social entrepreneurship research has developed insights on the way entrepreneurs work with communities to identify needs and develop new offerings to address those, while building financially sustainable organisations. Such organisations are called social enterprise ventures (SEVs) defined as having an explicit social mission central to their operation and a market orientation, which is consistent to its social mission (Bacq & Janssen, 2012).

Given that the offering of most social enterprise ventures is services (SELUSI, 2011) and that there is an existing interest from service design practitioners and scholars towards the creation of social value, one could argue there is a natural affinity between the two fields. In order to explore how multidisciplinary research could be achieved in a fruitful way in this space, this paper presents some influential perspectives on design for social innovation followed by a discussion of the concept of effectuation in entrepreneurship and some suggestions for research in this space.

Design for social innovation

Stemming from early considerations around 'eco-design' (Chick, 2012; Fletcher & Giggin, 2001) the discourse around sustainability is now an important theme in design research. Early prompts to reconsider the role of designers in society (Papanek, 1983) as well as more recent projects exploring alternative design scenarios for environmental and social sustainability (DOTT07) have articulated an expanded scope of design that goes beyond the consumer culture and the design of artifacts, to discuss the design of services that aim to deliver social value.

Such initiatives have contributed to the development of new practices and methodologies of approaching social issues through design, a domain which is increasingly referred to as design for social innovation (Manzini, 2007; Chick, 2012). Mainly through participatory design, designers in this context have demonstrated that innovative service platforms and tools can be created to allow people to address social issues. Examples of such design initiatives would include the development of support systems for sensitive groups (e.g. Vanstone & Winhall, 2006; Tan & Szebeko, 2009) or capacity building projects with local government to facilitate public service provision (e.g. Cottam & Leadbeater, 2004; McManus & Piet, 2011).

Transformation design was one of the early terms used to express the need for a new design practice to address social problems (Burnes et al., 2006). The authors perspective was that in order to deliver long lasting change, designers should apply participatory design techniques and collaborate with other disciplines aiming to build capacity and redefine what the design outputs can be in that context. The application of this perspective in designing services was developed by Sangiorgi (2011) who identified certain principles for transformational change in interventions at the community level drawing from fields with a tradition at this level of intervention. She suggests that in designing transformative changes the citizens should be seen as agents, whose contribution to the delivery of the service is facilitated, aiming to build capacity and challenge existing decision dynamics.

The potential of services in delivering social impact were also discussed in the research around creative communities and collaborative services (Manzini, 2007) where they are seen as a way to frame new types of value exchange within complex networks of people and institutions. This stream of research looking at creative communities, demonstrates how

alternative scenarios of living can be developed through design and captured in innovative service models. They are defined as “*groups of people who cooperatively invent, enhance and manage innovative solutions for new ways of living, by recombining what already exists, without waiting for a general change in the broader system such as the economy, various institutions or infrastructures*” (Jegou & Manzini, 2008, p. 32). This concept is based on the notion that people who actively seek to solve problems within their community can give rise to new forms of organization that create social value while at the same time reinforcing the social fabric and improving environmental quality (EMUDE, 2006). The idea of “service and business ideas” (Jegou & Manzini, 2008, p. 28) is put forward as a way to capture the structure-the organizational and economic model that describes the concept of these services- in order to allow them to be replicated in a different location with similar groups of actors.

In the discourse around transformational and collaborative services the activity of designers working with communities is described implicitly as entrepreneurial, with designers essentially creating new types of organisation, identifying new sets of actors that could be involved in the delivery of services and describing new roles and relationships among these actors. This process is framed through participatory design and design thinking principles that capture the role of the designer as an intelligent actor in this context (Manzini, 2007). While considerations on the process of developing enterprises that build upon these new service models are beyond the scope of design research, it would be valuable to consider how the current understanding of the role of designers in this space relates to that of the entrepreneurs. To achieve that some relevant concepts from the field of entrepreneurship are presented below.

Social Entrepreneurship Background

Entrepreneurship research aims at a better understanding of the highly heterogeneous process phenomenon of entrepreneurship. The term entrepreneur evolved from a French term meaning “one who undertakes or manages” and was used in the 1800s by a French economist to capture the activity of someone who creates value by “shifting economic resources out of an area of lower and into an area of higher productive and greater yield” (Martin & Osberg, 2009, p. 31). Although the field has been established as a distinct domain of research, there is still no consensus about the object of study in the field with the concept of entrepreneurship being reinterpreted constantly (Cornelius et al., 2006). Some persisting perspectives include a focus on facing uncertainty (Knight, 1921), on introducing new processes and products by innovating (Schumpeter, 1934) and recognizing opportunities (Kirzner, 1978).

Recently, the phenomenon of entrepreneurship is conceived as more multifaceted than in the past (Bruyat & Julien, 2004) with researchers looking into its role in society and its social dimensions challenging the economic discourse that is dominating the field (Steyaert & Katz, 2004). Some of the assumptions that stem from the association of the field with economics, for example the fact that motivation of entrepreneurs is mainly wealth accumulation do not appear appropriate (Mitchel et al., 2007) as entrepreneurship is increasingly identified as an activity that contributes to society in other significant ways that are not captured by the commercial entrepreneurship literature (Steyaert & Katz, 2004).

Social entrepreneurship is a field of study that expands the scope of entrepreneurship research to include organizations that broadly aim to deliver social impact and address social issues as well achieving commercial goals. As a field, it has inherited the definitional

ambiguity and methodological complexities of the field of entrepreneurship and it is largely still at its infancy. In the 1990's a substantial stream of publications emerged conceptualizing social entrepreneurship as *"a vast array of economic, educational, research, welfare, social and spiritual activities engaged in by various organizations"* (Leadbeater 1997, p. 3) or an activity that *"combines the passion of a social mission with an image of business-like discipline, innovation and determination"* (Dees, 1998, p. 1). As a result of this early work, the term social entrepreneur began to emerge in academia at that time in both sides of the Atlantic.

At the same time different governments in Europe began to create new legal forms to accommodate enterprises with social objectives, for example the socio co-operatives in Italy in 1991 and the Community Interest Company in the UK in 2004 (Hoogendoorn et al., 2010). As the field gained traction among academics and the public sector alike, cases of successful entrepreneurs gained significant amounts of attention such as that of the founder of Grameen Bank, Muhammad Yunus who was awarded the Nobel Peace Prize or the founder of eBay, Jeffrey Skoll who founded the Skoll foundation to support social entrepreneurship in collaboration with the University of Oxford (Hoogendoorn et al., 2010).

Today, the importance of social enterprise ventures in addressing critical issues globally is well documented (Nicholls, 2004, 2006) receiving recognition from both scholars and the public sector (Stryjan, 2006). To a great extent the theoretical and empirical basis for research in the field of social entrepreneurship has been similar to that of its parent discipline of entrepreneurship in its early days, lacking a unifying paradigm and being mostly phenomenon driven (Mair et al., 2006).

The process of social entrepreneurship

More recently, scholars have highlighted that traditional approaches to entrepreneurship research do not often account for the process that links results with initial conditions in which the entrepreneur operates (Van de Ven & Engleman, 2004). In response to this trend, scholars call for a focus on the entrepreneurial process exploring conceptually significant stages and subprocesses in venture creation (Low & MacMillan 1988; Ucbasaran et al., 2001; Steyaert, 2007). These calls reflect the need for a better understanding of modes of action that include what entrepreneurs do to come up with business ideas, how they refine them and how they take action towards making them a reality. Understanding this process is critical in supporting entrepreneurship and enhancing its positive impact.

Although Davidsson (2006) claims that given the heterogeneity and variability in the entrepreneurial process its starting and ending points are impossible to clearly define, he suggests exploring both cognition and behavior, providing us with the following definition: *"entrepreneurial process is all the cognitive and behavioral steps from conception of a rough business idea, or first behavior towards the realization of a new business activity, until the process is either terminated or has led to an up-and-running business venture with regular sales"* (2006, p. 76).

A perspective on the entrepreneurial process, which fits with the considerations around the potential contribution of design in social entrepreneurship, is that of effectuation (Sarasvathy, 2001). This approach re-focuses attention on entrepreneurial agency, highlighting entrepreneurial imagination as a way to deal with uncertainty. Effectuation seeks to explain the actions and logic that underlie the behavior of entrepreneurs. It is named in contrast to the traditional perspective on entrepreneurship, which is characterized as 'causal' to enable clearer theoretical juxtaposition (Sarasvathy, 2001, 2008).

In the causal model, entrepreneurship is reflected as a linear process, driven by clear goals consistent with planned strategy approaches. In this view the outcome that the entrepreneur is seeking to achieve is a given and decisions are driven from systematic information gathering and analysis within certain bounds (Simon, 1996). This perspective is driven by the notion that to the extent that the future can be predicted, it can be controlled (Sarasvathy, 2001). The causation approach to entrepreneurship is visualized in Figure1 below.

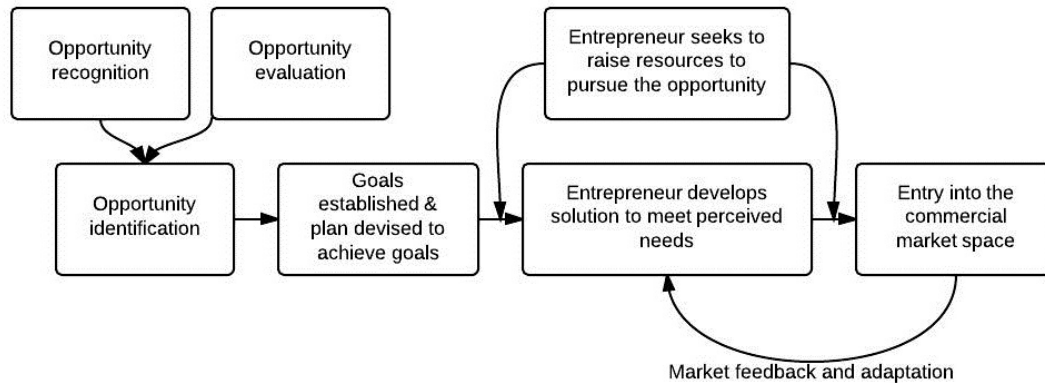


Figure 1. Causation approach to entrepreneurship (Fisher, 2012)

The conceptual model of effectuation on the other hand is consistent with emergent non-predictive strategies (Mintzberg, 1978; Wiltbank et al., 2006); it draws from empirical data to suggest that, entrepreneurs adopt a different decision logic under conditions of uncertainty. The decision process they actually use resembles more that of a chef who in order to prepare a meal, first identifies the ingredients she has available as opposed to reading a recipe and buying the ingredients subsequently.

The effectual approach was described by Sarasvathy (2008, p. 6) as “a logic of entrepreneurial expertise, a dynamic and interactive process of creating new artifacts in the world”. It does not aim to replace but rather complement the causal model, describing the benefits of both processes in different instances during the initiation of business ventures depending on different conditions (Dew & Sarasvathy, 2002). Effectual processes are actor dependent and more appropriate for exploiting contingencies which makes them more appropriate in situations where human action plays an important role.

Sarasvathy (2003) summarises the effectual process of entrepreneurship as follows. To begin with, the effectual entrepreneur considers the means they have available, namely their own knowledge, abilities, experience and their social networks. Given these initial means they then consider what effects they can create as a way to control the future rather than attempt to predict it. This initial localized possibility will evolve to more robust configurations through the collaboration with other actors who are brought onboard. This logic is demonstrated through the following principles encountered in effectual entrepreneurs:

- » Affordable loss rather than expected returns: Instead of focusing on maximizing returns, effectual entrepreneurs define acceptable levels of loss and experiment on different strategies with their limited means. Choices that lead to more options are preferred to those that maximize returns in the present;
- » Strategic alliances: Interaction with potential partners and their pre-commitments are valued by effectual entrepreneurs since they open up new possibilities, reduce uncertainty and erect entry barriers for competition;
- » Exploitation of contingencies: Contingencies that arise through time are seen as opportunities for different ways to create value from effectual entrepreneurs, potentially leading to new offerings or uses of existing resources.

Through this process the entrepreneur focuses on the controllable aspects of their environment and refines the final offering by gaining access to new means- the expanding cycle of resources- and the creative use of existing ones. This process is summarized in Figure 2. It accommodates the non-teleological aspect of entrepreneurial action, which facilitates viewing entrepreneurial agency as a way to creatively affect the conditions upon which the entrepreneur wants to act, generating the alternatives themselves (Steyaert, 2007).

It is this view of the entrepreneur as someone who creatively recombines available resources to produce new offerings that makes effectuation conducive to research around the role of designers in this space. In more detail, viewing the entrepreneur as an agent of change who welcomes contingencies and demonstrates creative exaptive behavior – finding new uses for existing resources- to deal with uncertainty and shape the market in which they are in, allows for considerations on the potential contribution of design thinking and the service design expertise in this iterative process of the formation of the new offering.

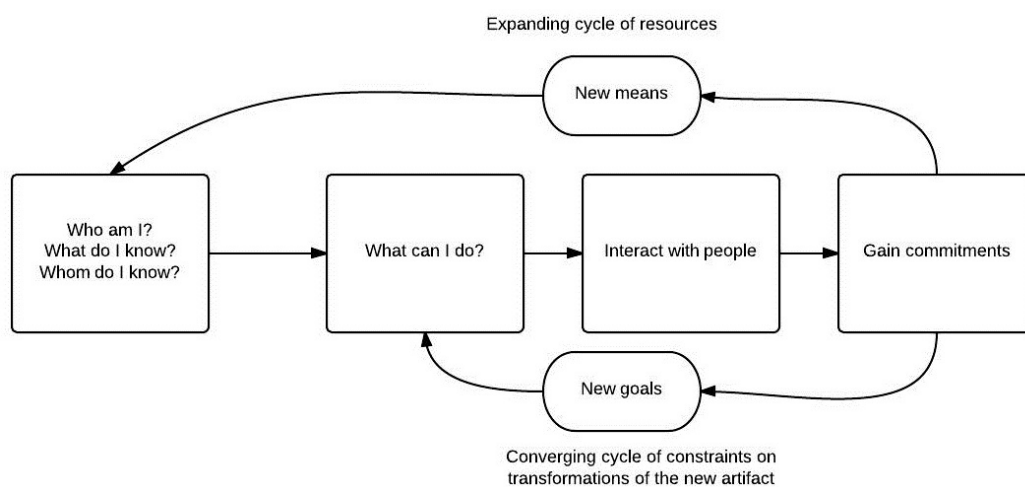


Figure 2. Effectuation approach to entrepreneurship (Sarasvathy & Dew, 2005)

Social Entrepreneurship and Service Design

Design for social innovation research has demonstrated the ability of designers to contribute to a better understanding of social issues and the development of innovative ways to address them, at the same time social entrepreneurship research looks at people who want to deliver social value and embark on a journey to build an enterprise around this vision. Currently research on the potential contribution of design in the early stages of the formation of social enterprise ventures is practically non-existent. Introducing connections between certain concepts across these two research areas will enable a cross-disciplinary perspective on value creation with implications for both fields.

Most SEVs offer services as opposed to manufactured goods in order to achieve their dual goal of commercial and social value creation (SELUSI, 2011). While such ventures can replicate existing models to achieve that, innovative SEVs challenge existing structures of service provision and create new streams of value among their previously underserved beneficiaries, their customers and the organisation. While practitioners from different design traditions can use this overview of the process of social entrepreneurship in considering potential areas of intervention, the focus of SEVs on innovation through new services and processes places social entrepreneurship closer to the domain of service design, which motivates the focus of this paper on this particular area of design.

In the work by Thorpe & Gamman (2011) on socially responsive design the decision making principles of effectuation are used to structure a design approach in dealing with uncertainty in social innovation projects where there is a constant evolution of goals and stakeholder relationships. In additional empirical work on such projects (Thorpe & Gamman, 2013) the term is used to describe the approaches of design students who adopted opportunistic and adaptive strategies in order to “control rather than predict the future”. This is arguably an important parallel between theory and practice in the two fields highlighting the similar situations in which designers and entrepreneurs operate to develop social innovations.

While in this case the concept of effectuation is applied to suggest and evaluate instances of the design practice in social innovation projects, this paper uses effectuation primarily to illustrate the process often followed by social entrepreneurs, mapping their journey as a way to reveal different points for potential intervention drawing from the service design literature. The model of effectuation is a valuable starting point in considering areas of convergence between the two fields, as it puts emphasis on the creative ability of the entrepreneur, essentially describing how they engage in design through that process (Sarasvathy, 2003).

Recent empirical research demonstrated that in working with the public sector certain design firms develop innovative service models working adopting what Sangiorgi (2013) describes as an Outside In perspective. This approach is not limited to working within existing markets or organisations but rather involves engaging in design for service models that explicitly aim to change existing markets and systems. This approach is contrasted to an Inside Out perspective where service design agencies work within organisations to develop the capacity for innovation and change through design.

From the perspective of entrepreneurship research the Outside In approach observed in service design agencies is very promising as it represents a Design perspective to new venture creation as part of the service implementation process. For example the case of Participle working in collaboration with the public sector and other private organisations in addressing the needs for the aging population went beyond the design of an innovative service to articulate the a business case that would allow it to become sustainable as a distinct enterprise. This allowed the service model to become replicable and to be on its way to becoming a national service in the UK (Participle, 2013).

In projects where service design leads to venture creation through an Outside In perspective, business support is very important (Sangiorgi, 2013). More systematic research on the way existing knowledge on social entrepreneurship can be integrated with the Outside In perspective in Service Design can lead to a more holistic approach to social innovation. As a first step towards the inquiry in this field, the potential role of design in the effectual process is discussed below. Drawing from empirical data on the application of Service Design by practitioners, Meroni & Sangiorgi (2011) identified four key areas of intervention that map on the skill-set of designers, namely designing interactions, relations and experiences, designing systems to shape systems and organisations, exploring new collaborative service models and imagining future directions for service systems. While all four of these areas relate to the development of desirable, innovative services, two of them are especially relevant to the Outside In perspective of Service Design and the effectual process of entrepreneurship. In more detail working towards the development of new social enterprise ventures relates to the themes of imagining future directions for service systems and exploring collaborative service models (Figure 3).

Imagining future directions for service systems: Firstly service designers can contribute in imagining directions for services systems, making these visions more accessible to others and using them to engage different stakeholders in a dialogue about the service. In the development of social ventures this skill-set can support the effectual process by facilitating the articulation of alternative offerings given the existing means and by providing material that frames the subsequent exploration stage.

Initially entrepreneurs begin their journey by framing the type of social impact they want to achieve or the issue they want to address (Doyle & Ho, 2010). Using tools such as scenario building and storytelling the designers can help answer the question “what can I do?” of effectuation by helping them effectively express the vision that fuels the effectual process and communicate this vision to those involved with the service delivery.

Moreover, service design can provide the tools to visualise the different service concepts as they evolve through the effectual process, making practical issues related to the service delivery more visible. This will facilitate the creation of alternatives described in effectuation as well as the process of constant assessment the desirable and undesirable qualities of the various alternatives (Sarasvathy, 2003).

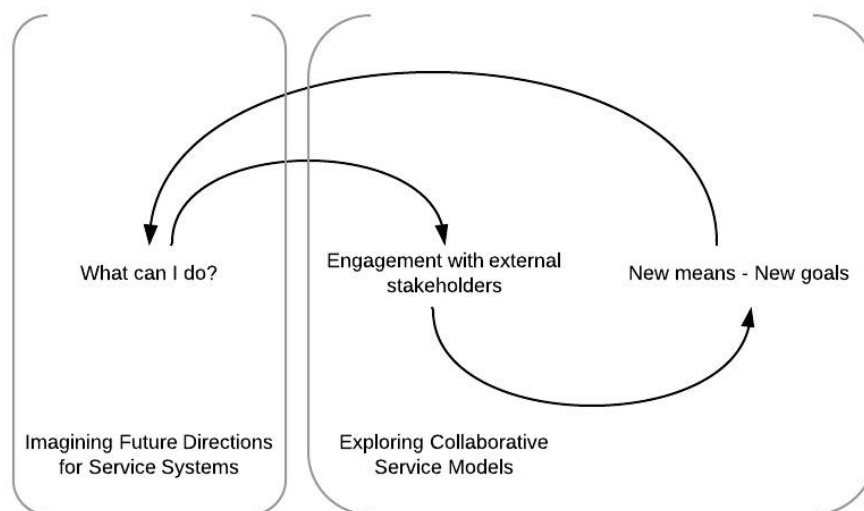


Figure 3. Areas of Design intervention in the Effectual process

Exploring collaborative service models: Effectual entrepreneurs use strategic partnerships as a way to bring key stakeholders onboard to deliver their version of the future (Sarasvathy, 2001), and are open to leveraging contingencies viewing them as opportunities for change. The interaction with external actors is a key part of the effectual process as well as the process of opportunity development in social entrepreneurship (Doyle & Ho, 2010). In that stage the material developed during the process of imagining future directions, can become a tool to engage the community in a dialogue on the different directions that the service could take, supporting the exploration of potential collaborative service models.

Drawing from service design this process could include experimentation with different models of service delivery such as co-production or co-creation (Freire & Sangiorgi, 2010; Cottam & Leadbeater, 2004). This would involve engaging the different stakeholders in a dialogue on the different roles they could play both in the design as well as the delivery of the service and how that would shape it. Moreover creating different prototypes to communicate ideas could facilitate the collection of pre-commitments which is a key stage in

effectuation. This may allow for the effectual iterations to be more conscious from the perspective of the entrepreneur and more meaningful for the various stakeholders who will be able to engage with the emerging service concept and more easily evaluate the extent to which they can contribute to the delivery of the service.

Finally using the above as an interpretative lens, design practitioners and academics can consider two types of projects, namely projects that start with an Outside In perspective, explicitly having the intention to form ventures and projects that evolved from design interventions and potentially could develop into ventures. In the first case the above considerations on the relationship between the empirically documented process followed by entrepreneurs and the design practice can help designers collaborate better with entrepreneurs by aligning their design work with their effectual journey. On the other hand in design projects that move towards a more mature and potentially financially sustainable phase this lens could provide a way to translate design work into steps towards the formulation of new ventures.

Conclusions

In imagining future directions for service design research, identifying its potential fit with other disciplines could suggest a space for meaningful knowledge exchange and mutual benefit with implications both in theory and practice. The field of social entrepreneurship was identified as one that presents the opportunity for such a knowledge exchange. With the theoretical framework of effectuation as a starting point the paper discussed the potential contribution of designers in emerging social enterprise ventures by supporting the imagining of future directions of the service system in which the enterprise operates, and the exploration of potential collaborative service models. These areas of potential design intervention are presented here not as an exhaustive list, but rather because they can be accommodated in the current understanding of the entrepreneurial process, and could act as prompts for a more targeted multidisciplinary discourse on the field of social innovation.

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Borg-Human Interaction Design

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Abstract

We use the term *borg* to refer to the complex organizations composed of people, machines, and processes which provide services to their clients, most often through computer and mobile interfaces. Unlike interfaces to pure machines, we contend that *borg-human interaction (BHI)* happens in a service-like context of anthropomorphization of the interface, conflict with users, and dramatization of the client journey. We believe this context requires designers to construct what we call the *human facet of the borg*, a structure encompassing the borg's personality, social behaviour, and embodied actions; and the strategies to co-create dramatic narratives with the user. To design the human facet of a borg, we propose a six-step design methodology to combine traditional computer-human interface and service design techniques, including enactment of conflicts, the use of puppets as interface prototypes, and comics-like sketches of the interaction process.

KEYWORDS: Service design; multidisciplinary design; design methods; borg-human interaction; anthropomorphization; user conflict; dramatic interaction; service blueprinting.

Introduction

Today's service organizations are complex entanglements of workers, machines, owners, buildings, rewards, systems and sub-systems, policies, associates, goals, and, too often, also other organizations. People have to interact with such organizations to accomplish their goals in life and, more often than not, they use a computer interface (usually over the Internet) in this process. However, most work of interface design is still based on traditional Computer-Human Interaction methodologies, which have been developed with the underlying assumption that users are interacting with pure machine systems, not with organizations. The main difference, we argue, is that interfaces to organizations should be regarded, and designed, as part of a process of service provision.

The main subjects of this paper are the organizations made of people, machines, and processes, which surround all of us in cyberspace and with whom we are interacting constantly in a service provision context. We refer to those organizations as *borgs*, paraphrasing the fictional character *Borg* of the *Star Trek* television and film series. The *Borg* is a villain in the series, which capture

some of the common distrust of people when they engage with large organizations — an often ignored component in human interface and service design. But, more importantly, the key characteristic of borgs is that they are large-scale service organizations which display complex behaviour resulting of the coupling of people and the machines inside them through interactions and processes. Large-scale organizations are essential components of the modern life since the Industrial Revolution and there is a vast literature studying them, including the work on sociotechnical systems such as Trist (1981) and on organizational theory (Pugh 2007).

People have to engage with such organizations to accomplish their goals in life, and in many cases our interaction with them happens through human-human interaction with the people in it (such in hospitals or schools) but more and more borg interfaces are based on computers or mobile devices. Customers interact with their bank through its tellers and managers in a bank branch and also through ATMs and web interfaces. Notice that not all service providers are borgs as such, for example, a personal trainer.

The main goal of this paper is to discuss how different it is to design a computer or mobile interface to a borg, in comparison to a machine, and to propose a borg interface design process based on service design to address the challenges of this particular design context. The main difference, we argue, is that interfaces to organizations need to convey personality, engage in social behaviour, be embodied through consistent actions, and participate in dramatic stories co-created with their users.

Traditionally the CHI community has treated user interaction with pure machines and borgs almost indistinctively, as if it does not matter whether there are organizations, not machines, behind the screen. Although the CHI practices acknowledge differences between stand-alone software and webpage interaction design (for example the work of Nielsen (2000)), those differences seems to be ultimately explained as emergent properties of the Internet medium. We believe that distinguishing interaction with machines and borgs, as proposed in this paper, yields a much better understanding of why interfaces to machines and websites (which are almost always own by borgs!) are different. For instance, websites, unlike traditional stand-alone software, often raise the need of considering privacy of personal data issues. In our view, users are concerned with the personal data they are entering in a website not because they are in the web but because they know that the website is an interface to an organization which can be not only negligent with their data but also malevolent with it.

A refreshing depart from this perspective has been provided by the service design community and work (Holmlid & Evenson 2008; Mager & Gais 2009). However, the service design community sometimes utilizes weak theoretical foundations for its methodologies. For example, Meroni & Sangiorgi (2011) uses the IIHP characterization of services which have been questioned, among others by Sampson & Froehle (2006). Similarly, Morelli (2002) proposes a service design methodology based on Unified Modeling Language (UML) where users are not part of the reference model.

A key distinction of this work from the existing literature and research is its foundation in the service theory developed by Pinhanez (2009) which defines as the key characteristic of service systems the presence of human beings (physical or virtual) inside the process of co-production of value with the customer. Based on this theory, we outline and discuss what we believe are the three main distinguishing characteristics of interacting with borgs in comparison to machines. Borg-human interaction, or BHI, is, in our view, anthropomorphized, conflictous, and dramatic. We list those characteristics as our working hypotheses and although acknowledging that they may require validation and better characterization through scientific studies, we proceed (with

caution) and use them in our search for models and frameworks for understanding specific issues of borg interfaces. We then employ those frameworks to describe a six-step design methodology for borg-human interaction design we have been experimentally applying in student workshops.

Characterizing Borg-Human Interaction

Following the service framework outlined in Pinhanez (2009), the underlying premise of this paper is that the presence of people inside borgs makes the interaction with, and the interfaces to them fundamentally different from traditional interfaces to machines. We hypothesize here that borg-human interaction (BHI) is mainly distinct from traditional machine-human interaction because borg interaction is almost always anthropomorphized, conflictous, and dramatic.

It is not the goal of this paper to provide empirical evidence of the validity of each of the three listed main characteristics of borg-human interaction, but instead to explore how they affect the design process in theory and practice. They are our working hypotheses for this paper and we reserve for future work the validation of them experimentally through mechanisms such as structured interviews, focus groups, user surveys, and experiments such as the ones described by Reeves & Nass (1996).

Characteristic 1: BHI is Anthropomorphized

Our daily observations of people interacting with borgs have shown us users, possibly because they know that borgs have people inside, perceive borgs as having human characteristics, treat them as (partial) human beings, and expect them to exhibit human-like behaviours. In simpler terms, unlike machines, borgs are almost always anthropomorphized up to some level by their users. People often see in large organizations human qualities such as greed, pettiness, arrogance, and evilness. We contend that users perceive such human qualities in most machine-based interactions with borgs, including government websites, ATMs, search engines, webmail systems, social media sites, and airline companies.

Notice that anthropomorphization is an important characteristic of user interaction with borgs, but is not exclusive to them. People attribute human characteristics to objects, places, and machines even without any trace of real connection to human beings or organizations, and change their interaction patterns accordingly, as discussed, for instance, by Reeves and Nass (1996). Also, as pointed out by Dennett (1981), the complexity of most (pure) computer systems, such as machine chess players, is better handled with what he calls the *intentional stance*, in which the user understands the system and predicts its behaviour not by knowing how it works but "... by ascribing to the system the possession of certain information and supposing it to be directed by certain goals, and then by working out the most reasonable or appropriate action on the basis of these ascriptions and suppositions." (Dennett 1981, p. 224). However, while with most machines users have the choice adopting the intentional stance to simplify the effort of predicting the machine's behaviour, we argue that in the case of borgs the actual presence of people inside them establishes the intentional stance, or simply, anthropomorphization, as the right framework for the interaction.

The important consequence of anthropomorphization is that the design and implementation of borg-human interfaces must take into account the need to provide the user with adequate representations and affordances to the perceived humanity of the borg. Today's reality is that in the majority of the cases the overall perception of the humanity of a borg is often left to be

created by the user's imagination as a by-product of the interaction process. To avoid this, we propose that borg-human interfaces should be structured around a coherent personality model which can be designed through specific methodologies described later.

Characteristic 2: BHI is Conflictous

As organizations, borgs have goals and have strategies to achieve them. But more often than not, goals of users and organizations do not match, leading to some level of tension and conflict when they interact with each other. The basic consequence of this observation is that we believe most part of the interaction between users and borgs happens in a context of conflict. For instance, when a user goes into an online store, her goal is often to obtain the best of what she needs for the smallest price; in contrary, retailers “want” their customers to spend as much as possible in high-profit items.

It is interesting how most of the academic literature in interaction design (and also in service design) tends to ignore, if not deny, this conflict, which is, in our view a quite straightforward characteristic borg-human relations. Traditionally, interaction is framed in a context of neutral dialogue, inherited from the “cold” interaction with machines; or as a collaboration process where the interface is supporting the users' goals. For instance, the discussion of Blomkvist and Holmlid (2010) of the role of prototyping in services largely ignores the presence of conflict in service interactions and its possible effects. Fisk, Grove et al. (2010) survey and discuss situations of misbehaving customers but look into more as exceptions than as a result of a pattern of conflict as assumed here.

A good illustration of how user-borg conflict affects interface design are the interfaces for loyalty programs such as, for example, interfaces for acquiring air tickets with miles. From a strict usability point of view, the tickets available for purchase by miles programs should be listed together with the ones that can be purchased by money, giving the user a clear picture of the decision he or she faces. The reason they are not in most airline websites is simply because the airline company goals are in conflict with the users' goals. In contrary, users' perception is often that the interface to acquire tickets with miles is difficult to find and difficult to use, if not intentionally slow, to force them to buy airline tickets with money instead of miles.

Notice that although user interactions with machine-only systems are often frustrating, this tension is mostly created by the physical constraints of different types of materials, components, and sub-systems, and many times compounded with bad interface design. Though users may anthropomorphize this frustration, they do not believe that there is really bad intent (originated in values and goals) from the machines themselves.

We argue here that in BHI most of the times the conflict is a by-product of the conflicting values and goals of users and borgs. The important question for designers is how this conflicted can be identified, managed and, if possible, mitigated. For that, we propose to explore how human-human conflicts are dealt with, that is, through social norms and constructs and emotions, and apply those ideas to BHI design.

Characteristic 3: BHI is Dramatic

One way in which people make sense of their interactions with others is to represent their interactions as dramatic narratives. By imagining ourselves heroes or victims, and rendering other people as gods or villains, we can more easily make intentions, values, and goals clear. And by

using narrative structures such as causation, succession, and counterpoint, the representation of the complex temporal patterns of our social life becomes more manageable.

Our third working hypothesis is that borg-human interaction is dramatized in a narrative by the user. The idea of narratives as representations or cognitive foundations for interaction is not new to CHI theory as, for example, in the work of Laurel (1991) or even in service design (Grove, Fisk et al. 2009). The key difference in the case of BHI is that the narrative almost always becomes dramatic: borgs are perceived as people, are in conflict with their users, and therefore can easily take the role of friends, gods, villains, or sidekicks through the service journeys we have with them. A simple example of dramatization of user interaction is often seen in the context of complaints about failures of service. Getting reparation or service recovery is in many cases described as an arduous journey where the user is constantly facing the inability of proper contact with methods of resolution, ignorant and indifferent people, and the overall greed of the vile borg.

The appearance of a dramatic structure in BHI often only surfaces in more complex interactions. Nevertheless, we believe it dramatically changes the user's perception of the actions and responses of a borg. Therefore designers should be concerned with, and possibly design, the stories their users are creating when interacting with a borg.

The Human Facet of a Borg

If borgs are perceived as humans and interact with users with human characteristics, an important set of questions arise for BHI designers. To what extent the human side of a borg has to be constructed to be perceived as an “artificial” human being, that is, how much do we need to personify the interface? Which human characteristics are more often perceived and needed by the users in borgs? When and how do users treat — and would like to treat — borgs as human beings? How to design interfaces which highlight particularly desirable human traits? How the interface can drive the drama behind the interaction process constructed by the user and better participate in it?

To address those issues, we introduce the concept of the *human facet of a borg*, which is the set of elements and processes that create and control the perception of and the interaction with the borg's human and social characteristics. The human facet of a borg combines elements of its graphical interface, affordances, and the internal processes which together are responsible for the users' perception of the humanity of the borg. In many ways, the need to design the human facet is, as we contend in this paper, the main distinction between traditional CHI and BHI design and, possibly, a key need in service design.

BHI Design Methodology

After having presented and discussed the main characteristics of interaction with borgs, we present here a six-step design methodology we are developing to address those specific issues in borg-human interaction. We firmly believe that most traditional design methods used in computer-human interaction are also applicable to BHI, since there are many interface challenges which are basically related to the communication media (the computer and the mobile screen, the hyperlink structure, etc.). We implicitly assume here that the overall BHI design process also follows basic tenants and steps of a user-centred design such as, for example, the construction of user personas as described by Pruitt & Adlin (2006).

However, the methods discussed in this section try to exemplify in concrete terms the need of additional work to systematically expose and target the intrinsic difficulties of creating interfaces to borgs. Inspired by the ideas from social sciences, theatre, puppetry, and comics, and some of the techniques used in those fields, we describe here six activities we believe are useful in BHI design: back-office ethnography, borg personality workshop, conflict battle, comics workshop, puppet prototyping, and, of course, service blueprinting.

Back-office Ethnography

As a system composed of machines, people, and processes, a borg needs to be well understood for the design process to be effective. We employ the term *back-office ethnography* to refer to the process of thoroughly investigating the inner organization and structure of the borg. We are very liberally using the term ethnography here, since the actual process may include a variety of techniques, including but not exclusive to ethnography. It is inspired by some of the techniques used in contextual design described, for instance, in (Beyer & Holtzblatt 1997) but with an additional emphasis on understanding goals and rewards.

Back-office ethnography starts with collecting all kinds of material available about the borg: organizational charts, company values, sales and production information, growth plans, etc. Based on the information collected, a *borg map* is created which summarizes the basic nature of the borg. The next important step is to build what we call the *goals and rewards map*. Through interviews and organizational documents, we try to establish which the goals and rewards are for the different people and areas of the borg. Care should be taken to map actual, not stated goals: more often than not, the goal of many organizations is not to please the customer but to maximize revenue or profit. Similarly, rewards should be focus on actual metrics and incentives which guide the behaviour of people in the organization.

The last step is to gather information about the business processes on which the interface have to rest on. The main goal is to unearth the requirements and limitations of the process to create what we call “*the system*” X-ray. The term “the system” is used here as in the often heard sentence “The system does not allow it.” often used to justify limitations of service provision. One of the best ways to produce a true “the system” X-ray is to try to use anonymously the services provided by the borg and to examine customer complaints.

Borg Personality Workshop

Having collected information about the borg structure, goals, and processes, a designer is in the position to explore better the first characteristic of borg-human interaction, anthropomorphization, for which we have been developing a methodology called the *borg personality workshop*. In the borg personality workshop, designers, potential users, and stakeholders try to establish the main characteristics of the borg personality from the users’ viewpoint. They explore individually and in group the personality traits of the borg by using typical personality frameworks. For example, a fake Myers-Briggs test (Myers, 1998) may be applied to the borg, examining the preferences of the borg as the users and stakeholders perceive it. This leads to the determination of an MBTI type (Myers, 1998), whose characteristics are then discussed by the group.

Often, participants in the workshop are likely to differ about the borg MBTI type which leads to the construction of multiple personalities. This is part of the process of the borg personality workshop since there may be conflicting opinions about the desired or actual personality of the

borg. It may be necessary to carry multiple borg personalities throughout most of the rest of the design process to better explore the conflicts and stories each of them generate and the different kinds of issues each personality creates. In particular, different functions of the borg interface tend to elicit distinct personalities. For instance, the sales part of a website can be extroverted while the complaints interface has to be more perceiving.

Conflict Battle

In parallel with the borg personality workshop, it is often useful to run traditional CHI methodologies to determine *user personas* as described, for instance, by Pruitt & Adlin (2006). With the different personalities of the borg and multiple user personas, the stage is then set for the *conflict battle* in which participants take turns playing the role of the borg and user personas in the different scenarios of the BHI. The first goal of the conflict battle is to clearly document as many as possible conflict cases, including the situation they appear, the causes of the conflict, and how they relate to the borg inner structure. It is important to associate the conflict scenarios to the elements uncovered by the back-office ethnography process, that is, the borg map, the goals and rewards map, and “the system” X-ray.

The second goal of the conflict battle is to create *conflict maps* which depict the social behaviours and emotions involved in the conflict scenarios. While some of the participants are acting out the scenarios as short theatrical sketches, others take notes of the social behaviours (such as aggression, altruism, empathy) and the emotions being exhibited by users and borg using one of the emotion characterization schemes. It is often helpful to freeze action (to be continued later) to allow time to the observers to point out, discuss, evaluate, and annotate the key characteristics of the conflict and how users and borg are dealing with it. Having the observers behind a sound-proof, see-through glass may be useful to avoid the impact of their comments on the participants enacting the conflict situation.

The third goal of the workshop is to find better ways to manage conflict and create what we call *conflict mitigation charts*. After going to the process of acting one particular scenario, participants and observers look into possible ways of solving, mitigating the conflict, or better handling it. If necessary, alternative versions of the scenarios are played out, examining whether different borg personalities could cope better with a conflict case.

Comics Workshop

Having found the main sources of conflicts, the emotions and social behaviours associated with them, and some possible conflict mitigating options, the next important step is to collect and organize them as the stories and narratives the user personas and borg produce together. One technique that can be employed here is what we call the *comics workshop*. It is an enriched version of the traditional storyboard technique used in interface design where participants explicit the inner thoughts of the user and the people inside the borg, the story roles they play, and the overall story structure. For each interaction scenario, especially those rich in conflict, designers and participants produce a *comics story* showing the visual elements of the interaction, the emotional reactions of the user, and balloons with the thinking and strategy of the user, depicting, when necessary, his perception of what the borg is doing and trying to accomplish. The comics story also includes, when appropriate, the people inside the borg and what they are doing, thinking, and getting as rewards. The comics stories produced in the workshop are then analysed in terms of character consistency, clarity, enjoyment, and conflict resolution.

Puppet Prototyping

The goal of *puppet prototyping* is to transform the comics stories into concrete interface actions which can express needed social behaviours and emotions between users and borg. While in the conflict battle we allow the full range of human actions to be played through person-to-person interaction (enacting user personas and borg), in the puppet prototyping we tunnel the interaction through representations of interfaces using a variety of methodologies.

Many of the traditional methodologies used in interface design, such as paper prototyping, can be used here with the care of making sure to evaluate their performance in the light of conflicts and emotions as represented in the comics story. In association with those techniques, we also use, especially in the initial stages of the puppet prototyping, other methods inspired by theatre such as *constricted dialoguing*. In this technique, participants re-enact the comics stories with constraints such as only using short sentences, gestures, or drawings. The goal is to find mechanisms to convey the social behaviours and emotions of the comics stories and the mitigating solutions described in the conflict mitigation charts.

Another technique is what we call the *giant puppet workshop*, particularly suited for complex borg organizations with conflicting internal goals and rewards. Participants are asked to create a giant puppet, manipulated by multiple puppeteers, which has to interact, mechanically-like, with the user personas. Materials such as cardboard, colour paper, wire, glue, and recyclable elements are provided. Puppet handlers have as much as possible goals and rewards similar to actual roles and jobs in the organization, according to the goals and rewards map and the overall behaviour is constrained by the issues in “the system” X-ray.

All the insights and discoveries of the puppet prototyping process are registered as alternative versions of comics stories. We repeat iteratively the processes described here until the comics stories have no more direct human-to-human but only computer-mediated interface elements. Notice that the elements depicting emotions and thoughts of the user and of the borg are kept in the refined comic stories as a documentation of the actual goals and mechanisms of the interface being designed.

Service Blueprinting

To work out the practical details of the interaction stories of the user, we employ service blueprinting (Shostack, 1984). Using the comics story as a reference, a service blueprint of the borg interaction with the user in each scenario can be produced to detail the actions and decisions of each element of the borg. The service blueprints should then be analysed in different ways. Looking vertically in the blueprint, information and synchronization needs of each element is scrutinized to make sure that all actions happen as needed. A horizontal analysis allows a good understanding of delays and waits which may affect the user experience and the borg performance and perception. Also, by considering the multiple strips from different service blueprints of a certain role or system in the borg, the complexity of its particular operation is highlighted. Here it is important to check what is expected from a role in comparison with its goals and rewards as listed in the goals and rewards map, and what an element of the borg should do in comparison with “the system” X-ray. Often, this analysis leads to the detection of problems which may require iterative redesign.

Resistance is futile

The key proposition of this paper is that more often than not the interface design process is done in the context of interaction not with a pure machine system but as a service interaction with a complex organization of people, machines, and processes we call borgs. We argue here that designing borg-human interaction is challenged by three key differentiating characteristics of borgs to pure machines and computers: anthropomorphization, user conflict, and dramatization. We then propose a six-step design methodology, which addresses some key characteristics of borg-human interaction.

But do designers need really to go through all this trouble to create a good website for an organization? The “assimilation” of a borg paradigm for interface design and the adoption of BHI design methodologies is, of course, a designer’s choice. In our view, the implication of creating interfaces to borgs as if they were just machines is leaving solely to the users the task of creating the human representation of the borg which, we believe, is likely to happen anyway.

The six-step methodology described has been explored and further developed in several design workshops with design students. In those workshops, groups of students have been presented with a typical borg interface problem and guided through the six-step design methodology up to the point of a fully implementable computer interface. One of the most successful aspects of the methodology is the intensity of the conflicts surfaced during the conflict battle step. The re-enactment component easily triggers the worst behaviours both from users and borg, providing very rich material for exploration in the next steps. We have also found the dialoguing constricting techniques used in the puppet prototyping step very useful to find rich and non-trivial alternative designs for the interface. Overall, the student workshops have shown that the methodology proposed here is able to surface and explore issues rarely observed in traditional computer interface design processes.

In this paper we intentionally left out considerations and techniques for dealing with some scenarios of interacting with borgs which involve direct human-to-human contact with human beings inside the borg. Many borgs have customer care centres, physical or virtual, where the borg interfaces with its users through people. In those interactions, the personality and social behaviour of the borg is also played out and borg stories are constructed. Although not addressed here, designing such human-borg interactions is essential, and some of the techniques proposed here may also apply.

One of the key challenges we have yet not successfully addressed is to understand what could be sketches of the human facet of a borg. We agree with Buxton (2007) that sketching is an essential activity of the design process but traditional methods of sketching such as drawing and paper prototyping are limited, most likely inappropriate, when considering the complexity of creating human characteristics in borg interfaces. We are still far from determining useful ways to sketch the human facet of a borg, in the sense of concrete representations which “[...] do not specify everything and lend themselves to, and encourage, various interpretations that were not consciously integrated into them by their creator.” (Buxton, 2007, p. 118). But our experience with the use of comics stories show they are an interesting starting point for what service sketches could be.

The ultimate goal of this paper is to trigger a discussion of the applicability of traditional interface design techniques to the service context of borgs. We do not deny here the importance and validity of the most traditional interacting design theories and practices. However, we believe it is important to recognize that in the current world, computer interfaces have fundamentally

changed their nature from users interacting with computers to interaction with complex organizations of people.

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The service Ouroboros: Designing persona service cycles

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Abstract

Many companies investigate new business opportunities in a turn from product to service design. As service offerings expand over time and space, such notions as ‘customer journey’ or ‘service blueprint’ have been suggested to grasp and design the nature of the emergent services. However, we find that there is room for improvement on two levels. First, customer journeys and service blueprint tools could benefit from an empathic customer understanding; that is the design of customer-specific services. Secondly, the existing customer journey and service blueprint tools are less concerned with the cyclic nature of services, by which we mean the dynamics of a customer relationship and its development over time. We report findings from collaborative workshops, in which we challenged two companies to try a new concept and tool we call ‘The service Ouroboros’. We suggest it as a more appropriate way to design various customers’ service cycles.

KEYWORDS: service design, service cycles, touchpoint, service ecology, customer journey, empathic design, personas

Introduction

A major difference between service design and other areas of application is whether one designs for a single interaction with one product or for a series of events, cues, interactions or touchpoints, and therefore interactions across time and space. For instance, Shostack introduced the notion of touchpoint thinking by saying that “the design of service should therefore incorporate the orchestration of tangible evidence – everything the consumer uses to verify the service’s effectiveness” (Shostack, 1984, p. 136). Carbone & Hackel likewise argue that the role of the service provider, producer or designer is to orchestrate ‘clues’ (Carbone & Haeckel, 1994). Several later articles echo this aspect of service design, sometimes calling it ‘service encounters’, ‘experience points’ or ‘cues’ as synonyms for the popular industry term ‘touchpoint’ (Bitner et al., 2008; Chesbrough, 2010; Zomerdijs & Voss, 2010). Clatworthy (2011) proposes that the service design field should think in terms of touchpoint innovation as one of the core foundations. The service design begins from the

moment a customer comes into contact with the organisation and lasts until the customer concludes contact. Therefore, interest in service design is related to considering time, and as part of that, the change of spatial settings, as an object of design, and creating design tools that support the sketching and prototyping of time aspects. Existing tools with a focus on time aspects in service relate to the concepts of ‘customer journeys’ and ‘blueprints’. The creation of customer journeys is often used in industry and as far as we have seen, mostly as a post-it note identification of the touchpoints in a service. For example, in the customer journey canvas map proposed by Stickdorn & Schneider (2010) there are boxes of touchpoints, divided into pre-service, service period and post-service. The main idea is to see a customer going through these boxes in a linear way (see Figure 1).

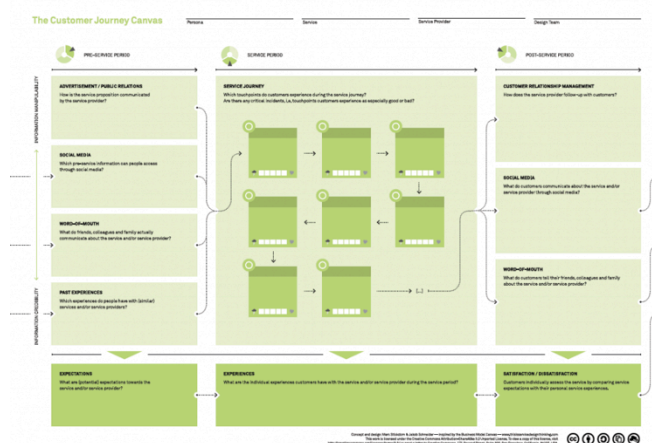


Figure 1. Stickdorn & Schneider (2010) Customer journey canvas.

Creating blueprints is an activity proposed by Shostack and further developed by Bitner and colleagues. It deals with components that according to the authors are important for service design — that is, delivery channels; the various actors involved, including managers, staff and partners; and the contact each of these have with the customers in a given touchpoint situation (Shostack, 1984). Service blueprints are a “visual notation for depicting business processes via symbols that represent actors and activities” (Bitner et al., 2008, p.5). Bitner’s example of a blueprint consists of five components, organised in a table: physical evidence, customer actions, onstage, backstage, support processes.

When looking into the literature we have been surprised about that a customer perspective is not explicitly present in the first steps in the creation of a customer journey or service blueprint (see for instance Shostack, 1984; Bitner et al., 2008; Clatworthy, 2011). While these researchers properly have the customers in mind during the activities the report from, no concrete exploration of the understandings of the customers are visible. This brings us to our two concerns related to customer journeys and service blueprints.

First, current ways of designing customer journeys and service blueprints seems to rely on either a provider perspective on the touchpoints or an implicit understanding of the customers. The research do not seem to question if customers always go through the same order of touchpoints and if they always expect the same outcome from a certain touchpoint and from the service as a whole. One exception is Stickdorn & Schneider (2010) who mention creating personas as a possible activity. Still there is no supporting concrete exploration of how it might be incorporated in the service design process. This does not correspond well with Bitner et al.’s notion that “service(s) are fluid, dynamic, and frequently co-produced in real time by customers, employees, and technology, often with few static

physical properties” (2008, p. 2). In short, the existing tools are not tied to a thorough understanding of a specific customer’s service run of events. As a contrast it is common in the field of interaction design to do user research as one of the first steps of the design process. As a way to keep specific user groups insights in mind throughout the design process, creating personas have been suggested (Cooper et al., 2012; Adlin et al., 2007). Personas are fictitious archetypes, which aim to describe real goals and behaviour patterns in specific user or customer groups. Previous research in personas has led researchers to claim that this activity significantly improves idea and concept development (Long, 2009; Nielsen, 2012). According to Cooper et al. (2012), personas are used mainly to avoid two problems. The first is what Cooper et al. (2012) call *the elastic user*, in which designers consistently bend the understanding of users to fit to a certain idea. In relation to the transferability of personas, the field of service design is concerned with the difference between business-to-customer (b2c) and business-to-business (b2b). Whereas end-user personas consist of such issues as skills, preferences, behaviour, desires etc., it is different for b2b as companies, institutions and the like have a different set of concerns than end-users. There might be a committee of people to address instead of a single person; companies might want long-term relationships, not just a one-time offer, and in general the selling process might be longer and more expensive (Blaney, 2012). Service and customer relationships develop over time and in service cycles, and for the provider to attend to customer-specific desires, our proposition is that a deeper customer understanding is necessary. Our first question is therefore: In what way can an exploration of touchpoints address customer-specific touchpoints through customer understandings, both b2c and b2b, as an early activity in a service design process?

The second concern we have is related to the existing service design tools ability to support the development of customer-specific service cycles. As far as we have seen, customer journeys and service blueprints seem to be grounded in a linear way of thinking. Designing and illustrating the service in the current customer journey and service blueprint style neglects the dynamic relationship between provider and a specific customer, and the difference in entry points, the order of the touchpoints, and the exit points according to a specific customer group. Furthermore, we propose to think in service cycles rather than journeys, as journeys imply an ending, not a continuum, and for b2b, not a long-term offer. In the industry and academia there is increasing attention given to ongoing journeys, or at least the tools implies that it could be ongoing. For instance, the *Customer journey canvas* from Stickdorn & Schneider (2010) includes arrows pointing towards second rounds or continuous offerings. However, in order to work explicitly with possible ‘never-ending’ journeys, one would have to make a new canvas mapping, and thus miss out on the relationship between the various customer service cycles. An interesting example in this direction is the AT-ONE project, in which the researchers experimented with a card-based toolkit (Tollestrup, 2009; Clatworthy, 2011). Their research found that the cards could be used to map existing situations; identify touchpoint problem areas; create awareness of the actors who are responsible for the touchpoint; attention towards routine service delivery; experimenting with addition and subtraction of touchpoints, and forced association through random card picking. These are inspirational insights, but still they are not directly tied to a deep customer understanding and do not support a cyclical service nature. Our second question, therefore, is: In what way can we create a concept and a tool that takes into consideration the dynamic relationship between a company’s service and a specific customer group, like the order of touchpoints for various customers, identification of new customer specific touchpoints, and second service cycles?

In this paper we report on two collaborative workshop cases of the abovementioned two areas of concern: what a deeper customer perspective in combination with a touchpoint-related activity might result in, and how the touchpoint activity can support the design of customer-specific service cycles. In the search for a more appropriate concept and tool for the sketching and prototyping of customer service cycles, we challenged two companies to experiment with a double activity — first they had to create b2c and b2b personas, and then they had to create service cycles according to the specific customer group.

Research method

This work is based on action research; that is intervention experiments in design workshops in which we engage participants in trying out new collaborative methods. The type of intervention experiment is in family with Schön's notion of *exploratory experiments* in which an action is undertaken only to see what follows, and *move-testing experiments* in which there is a possible end in mind (Schön, 1983, p. 128-168). Our results are based on research-through-design (Frayling, 1993) and an experiential learning cycle in four steps: (1) designing the tools, (2) design interventions through the tools in collaborative workshops, (3) observing the action and (4) reflecting through relevant theory and extracting design principles (Kolb, 1984). As design researchers, we work with companies to propose a new course of action to help their community improve its work practices.

We report from experiments with two workshop design cases and activities. The arrangement was respectively a one- and two-day workshop where the business case owners, together with invited participants, went through several consecutive design activities we had prepared. We report from two of these activities: creation of personas and touchpoint service cycles. These two activities took a total of one and a half hours. Towards the end of the day, we introduced evaluation sessions to get concrete feedback from participants.

The analysis is based on empirical material; on notes and observations from the day, as well as video recordings of the entire activity. Video is a vital addition to the direction of research-through-design as it helps document and communicate the results, thus preventing the results from being a gathering of reference materials (Frayling, 1993). The video recordings were transcribed and analysed through the use of interaction analysis (Jordan & Henderson, 1995). By comparing incidents across the sessions we are able to explain how the design tool scaffolds the discussions of new service design initiatives.

We present the results as design reflections related to the Schönian description of reflection-in-action, as the reflection that takes place while a design problem is being addressed and surprises occur, and reflection-on-action as the reflections that happen after an event (Schön, 1987). We seek to incorporate into the paper the design tool intentions and the reflection-on-action between the workshops, as there were some changes in the toolkit in the second workshop, which were directly initiated because of the first workshop. Our focus is on the combination of personas with touchpoint thinking, e.g. how these two elements play together, and therefore we are less interested in the personas in isolation and touchpoint innovation without explicit user understandings.

Design tool intention

In earlier workshops we have worked with the exploration of more traditional, linear customer journey tools. In the search for a concept and tool to better encapsulate the service nature we came to think of the symbol of Ouroboros, in which a serpent (in some pictures it is a dragon) is biting its own tail. This is an ancient symbol used in many cultures, including ancient Egypt, Greece and Nordic mythology, among others. Recurring meanings are the renewal of life, death and infinity; continuity and cyclic nature; the whole in relation to the parts (see Crystalinks (2013) for a short history of the symbol). Applying the Ouroboros symbol to services in the above meaning creates an opportunity to articulate a service cycle agenda in just one design tool. It implies that services per se do not have a fixed beginning, middle and end; services expand in cycles for various customers and according to the often ongoing relationship between provider and customer.

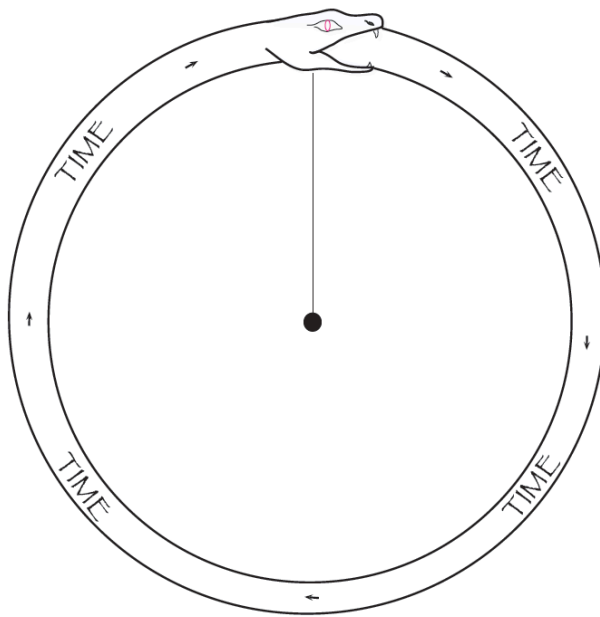


Figure 2: The service Ouroboros template

Besides using the Ouroboros template (figure 2), we have experimented with various material artefacts that could physical represent touchpoints. The card-based toolkit in the AT-ONE project shows that visualisation is one of the non-verbal modelling media approaches that designers often use as a way to bring tacit knowledge to surface (Polanyi, 2009; Cross, 2006). We value the visual stimulation in the format of a set of predefined cards but wanted to experiment with a more neutral set of touch points in order to have the participants themselves come up with and define the touch point they found relevant. We also wanted to explore the use of various 3-dimensional objects instead of using 2-dimensional cards. As Papert & Harel (1991, p. 1) argue, a richer learning happens 'in a context where the learner is consciously engaged in constructing a public entity'. Chances are that these tangible touchpoints become a thing-to-think-with (Papert & Harel 1991). Through his experience with the AT-ONE project, Clatworthy (2011, p. 25) argues: "Foam, wood and clay are difficult to use, since a physical representation of a single artefact does not capture the holistic nature of services." We agree with Clatworthy but tend to see the Ouroboros as a kind of game board that can bring in foam, wood, clay or other materials in the search for illustrating the holistic service in a physical, tangible way.

The physical templates for the b2c and b2b personas was made of cardboard and in a simple manner made so they could stand upright once they were filled out. The b2c persona templates looked like a silhouette of a person and had boxes to be filled out with the

categories: values, dreams, preferences, goals and demographics. This was inspired by Goodwin (2011) who argues that personas have the following characterizations: skills, attitudes, behaviours, mental models and goals, and they might also have demographics. In the templates for the b2b personas categories were: brand values, value propositions, the company's customers and revenue streams, and the silhouette looked like a building in order to illustrate the corporate nature (Figure 3). From our experience, what is important in b2b is to understand the customers core business logic or the business model they currently undertake, and if that knowledge is not present, participants have to imagine the central issues at stake for a b2b customer.

Case 1: Personal development consultancy

The case is about a start-up consultancy focusing on personal development. The offerings were e.g. courses in meditations and visualizations. Besides the case owner, participants in the workshop included a design student, a design researcher and a business consultant. The first activity was to discuss and fill out b2c and b2b personas, depending on who their customers were or could be (at least three altogether). The resulting customers were two b2c customers, 'a frustrated woman' and a 'younger career man', as well as two b2b customers, namely a large telecommunication company and a municipality. In Figure 3 the b2b customer, the municipality is filled out and ready as a shared starting point for the Ouroboros activity.

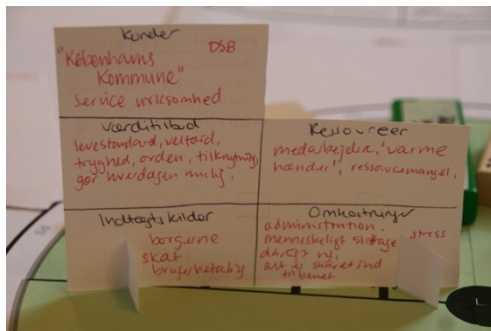


Figure 3. A filled-out B2B persona – with key persona characterizations such as the municipals brand values, value propositions, customers and revenue streams.

Placed on the Ouroboros board the physical presence of the b2b customer is a simple mean to remind everyone that this is the one the group should relate the service to. The task for the group is to identify the service run of events with as many touchpoints they could identify, starting with the first contact with the customer. They were given a set of wood bricks with writeable duct tape to represent the various touchpoints. A pattern quickly emerged in the activity. The case owner was the one who placed the touchpoints in the circle either based on the suggestions of the other participants or by her own initiative. For instance the participants discussed the order of the touchpoints and whether there were anything in between:

(The group have been over various marketing channels and are now discussing the touchpoint of 'presentation talks for companies')

Case Owner: Then they (ed. listeners/managers) might say, 'We want you to give a talk at our annual theme day.' That could give me access to new customers.

Participant A: Do we think internally now, or...? I think you could distinguish in that way. You probably also have to communicate with the procurement department.

(Case owner takes a blue wooden brick and writes 'lectures for management' on it. She moves a previous touchpoint forward in the circle in order to place this new one as a preceding touchpoint)

Participant A: You could also be part of a project?

Case owner: Yes, I could be part of a development project. Or it might be a user study task.

(Case owner takes two new wooden bricks and writes 'project' and 'user study' on each one, respectively. They are also placed before the 'presentation talks for companies'.)

This is a typical example of the dialogue and interaction throughout the activity. The group along the way identified what could be called 'in-betweens', touchpoints specific for that customer which they had not explicitly dealt with before as a significant part of the service. The awareness of the relations between the touchpoints, the in-betweens and in general the service structure is a core issue in service design (Chesbrough, 2010). This also corresponds with Shostack's (1984) 'identifying processes', which she notes is the first step towards creating a service blueprint, but with the main difference that this is seen from the perspective of a particular customer. The in-betweens identified below might not have been a part of service if the perspective was a provider's perspective of a standardized 'all-inclusive customer'. The circular format of the Ouroboros template and the physical wooden bricks makes it easy to include new touchpoints on the board when they are identified. The order of when touchpoints enter the Ouroboros tells us which of the touchpoints comes first to the participant's mind. These might be the most important ones. However the three 'in-betweens' (see Figure 4) might turn out to be as important as the other ones in the future.

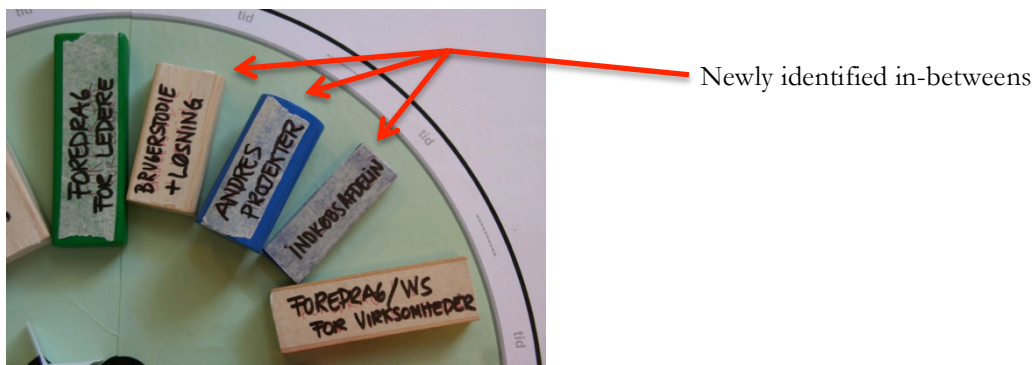


Figure 4. The three in-betweens touchpoints: 'User study/brown', 'Projects/blue' and procurement department/blue.

Through the service Ouroboros circularity and wooden bricks, the case owner reached an understanding of the service structure and how to think of it, which is new for her. The consultancy owner stated that overall she had reached a new understanding of the service and now had a lot of new matters to attend to. The use of the personas created an understanding that the various services should be designed with close attention to the needs or desires of a particular customer.

In observations we noticed that the dimensions of the Ouroboros board and the wooden bricks did not leave room for more than one persona service cycle when the wooden bricks were placed after each other and not beside each other. Therefore we changed the dimensions of the Ouroboros, making it twice the initial size. Furthermore, we decided to experiment with, hexagonal foam touchpoint bricks, to see if the possibility of connecting through the bricks' multiple sides would lead to new service routes in the Ouroboros.

Case 2: Lightweight wagon company

The next case is from the next workshop where we'll focus on the lightweight wagon company. The company has a successful business operation in value offerings to the building industry, but they foresee that in a couple years, they will have to be better at delivering value for completely different customer segments. They therefore wanted to explore how to address new segments, and develop customer strategies for these. The participants were all part of the company, but came from two different departments located in two countries. In the persona creation activity the group decided to create the b2b and b2c in pairs. Thus they found it important to investigate the similarities and differences between b2b and b2c within the same segment. The first b2b customer belonged to the 'main' segment in their business at that time — construction companies and construction sites. The imagined b2c customer was the construction company's b2c customer. The second b2b customer was a festival organizer, and the guests of the festivals were then the b2c customers.

In the Ouroboros activity, the group had time to create touchpoints in relation to three specific personas. The three service cycles were all present in the same Ouroboros, allowing them to address, which touchpoints were shared across various service journeys and which only seemed relevant for a single customer. The Ouroboros and physical foam bricks made comparison easy directly through the visualisation of the touchpoints as illustrated in figure 5. After having been through the festival customer service cycle (the orange ones in Figure 5), they decide to deal with the building industry next (the blue ones in Figure 5) and discuss whether it would look different for that customer segment and if there were unique touchpoints for that customer.

Administrative manager: I would say that very often these particular customers might contact us and say, 'Could you perhaps do this mobile solution for this or that?' Then you would go directly from this phase to that one. (Points from market channels to production touchpoints.)

Administrative manager: They know the needs but are not certain how to get there. We have a few extra contacts here. We go into a meeting with the customer and try to unfold the various needs, and pay attention to that.

Sales responsible B: What I think is important here is a personal visit.

Administrative manager: Yes, absolutely.

CEO: If it is possible, at least.

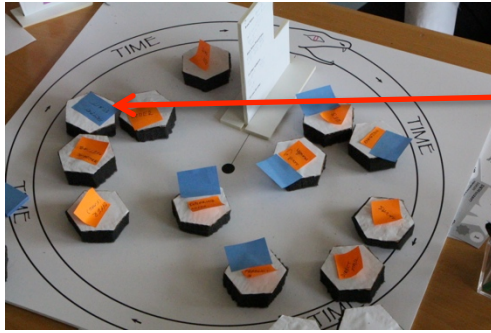
Facilitator A: Is that a new one [ed. touchpoint] then?

Administrative manager: It is here, but there is also maybe a 'factory visit'. (Several participants agree by saying yes.)

(He takes a brick and a blue post-it, writes 'factory visit' on it, and places it in the Ouroboros.)

Taking another customer into perspective actually feeds back on the already identified festival service cycle, as a new one — 'factory visit' — is added because of this. It is discussed whether this would work for both segments. A reason for the addition of this touchpoint might be the previous discussion in itself but could also be because of the Ouroboros' ability to create an overview of all the customer-specific service cycles and touchpoints.

Chesbrough (2010) notes that in service design it is of vital importance that companies are able to create strategies in order to consider when to make standardized services and when to create customizable services. As a major insight in the activity, the group became more aware of how to approach each customer, and the group continuously discussed the particular service towards the customer.



The addition of the touchpoint 'factory visit'

Figure 5. The orange ones are festivals that were placed before the blue ones. The blue touchpoints are the building industry customers. The arrow shows the addition of the 'factory visit'.

The understanding of which customers desire what is developed in a deeper way. By the end of the activity, the groups start to touch upon ways to keep bringing customers in and keep the relationship going after a first-service offer. In the example below, one can also observe how a second offer is closely related to the first one.

CEO: We don't want any involvement from the customer. He has bought this product — that's it. We have experienced that customers wanted to change something, but still expected to have the same delivery time. It creates a lot of turbulence in our production.

Facilitator B: Do you experience clients asking or calling?

CEO: We had one in the past.

Facilitator A: Is there a difference between nursing and influence on process?

CEO: There might be. Why are you asking us about it?

Facilitator A: I'm just asking if it is part of the service, in order for them to come back? Choosing you again instead of competitors?

CEO: It's a good point. We have the possibility to, for instance, send them pictures from the process.

Administrative manager: You mean for him to keep track of what's going on here?

CEO: Yes, then he can see that I have the possibility to change this for the next time.

Administrative manager: But you mentioned (addressed to instructor), how do we make sure that customers return to us? The fact that they feel listened to, that we have tried to accommodate all their wishes, and that we have built up a personal relationship, are central issues to address.

There is an agreement between the CEO and the administrative manager that they have less focus on how to secure the return of customers. Shostack (1984) and Clatworthy (2011) suggest that one of the key processes in service design is to identify so-called 'fail-points' or 'pain-points', by which they mean the touchpoints that are underdeveloped and do not perform well. The missing focus on returning customers is one of these pain-points. These pain-points were not visible in the same way in the consultancy case. One reason for this probably has to do with the business being in a start-up phase. The construction wagon company stated that they would continue the work with the customer strategy, attend to the difference in the service cycles based on the understanding of the customers, and think about how to keep customers in a continued relationship.

Findings - Towards persona service cycle design

In this paper we have experimented with a concept and tool for creating and exploring persona service cycles. The service Ouroboros has been suggested as a format for companies to consider the relationship between a company's services and a specific customer. The

activity is divided in two where the first focus is on creating an elaborate and common image of the b2b and or b2c customer using the Persona technique, and the second part deals with the various personas touchpoints in the Ouroboros.

To critically address our approach it can be discussed whether these fictitious persona archetypes actually create a *deep enough* account of the customers. If time is given in collaboration projects with companies we would suggest ethnographic fieldwork as the first step, or at least as a second step, in order for the personas to be data-driven, and to challenge company assumptions about them. Another way to create a deeper understanding of the customers is to invite them in if one knows who they are before entering the workshop. Though, in other workshops we have noticed that any company-outsider participant in a workshop tend to take, in an intuitively way, a customer perspective resulting in positive conflicts (Gudiksen et al., 2014, see also Buur & Larsen, 2010). Hence, the participative endeavour with outsiders through a tool like the Ouroboros, can, as illustrated in this paper, lead to new insights and new customer understandings.

The tangible touchpoints incentivise a more dynamic use of the tool where touchpoints can be moved around as insights appear, or new touchpoints are suggested. Three-dimensional physical objects like the Ouroboros board and the touchpoints can help us stay in control when dealing with a complex set-up, or these objects can function as a way to externalize ideas. Therefore they also assist to keep track of underexplored touchpoints areas, or ideas for new ones, and with the Ouroboros board participants can see their interconnection. We emphasise the importance of this holistic overview as a counter position to reductionism. This does not prevent deep dives into single touchpoints, but the Ouroboros can be the glue that holds them all together, and prevent participants to loose track of the larger picture. If one separates customer specific cycles from each other we are less likely to find similarities or dissimilarities, which might be important for new design moves. This was demonstrated in the case with the lightweight wagons. We also tend to see these tangible objects as a way to reach agreement in a different way based on a shared understanding. In the words of Roos (2006, p. 85) an object-mediated communication activity like the Ouroboros results in a “tangible outcome of the communication, exhibiting areas of agreement reached as well as persisting differences”. Though, it seems we are on the right track with the tangibility issue, the Ouroboros board and touchpoint objects, could perhaps benefit from the same type of images used in Clatworthy’s (2011) touchpoint cards. Similarly with previous studies on visualization and cognition (Arnheim, 1969; Latour, 1986; Goldschmidt, 1991) Clatworthy finds that the visual nature of the cards provides embodied communication, and a richer learning than purely text-based activities. Therefore, three-dimensional objects with images providing suitable ambiguity might be a favourable future solution.

We have illustrated how the two companies identified customer specific touchpoints and shortly dealt with prolonged or second-time service offerings. In the construction wagon company they gained an overview of several customer services, which seemed to help them in the identification of the touchpoints that go across several customer groups or that are unique for a specific customer. However, the service Ouroboros concept and tool are still in their infancy. Therefore we suggest the following considerations for upcoming experiments with the Ouroboros or for other similar studies:

Service-related personas: We find that it would be appropriate to add a characterization to the personas in which the current, and maybe future state of the relationship is suggested, which would be different from product-oriented personas. If possible data-driven, ethnographic based personas would be preferable to prevent inadequate understandings of customers.

Holistic overview of service cycles: In a board like the Ouroboros it is possible to place several service cycles allowing for comparison. If a company have many customer groups the dimensions should be bigger, or one can maybe build in heights. This could lead to an overview of standardized and customized touchpoints

Tangible objects and images: We suggest that the tangible objects, whether it is the Ouroboros board, the tangible touchpoints or similar, are combined with images. We suspect that the combination of three-dimensional objects with visual imagining can result in multiple senses being used to achieve new insights.

Service design components: It might be that the components from Bitner et al. (2008) service blueprint such as backstage/front stage and support processes can be added to the Ouroboros through the use of different objects. This might lead to a higher complexity, which is not necessarily fruitful, or on the other hand the result might be beneficial in terms of clarity. We have yet to explicitly experiment with these components as part of the Ouroboros.

Service time aspects: A final element we find highly interesting is to explore how the time issue can be further explored. For instance the Ouroboros can be divided into circles or spirals with outer and inner rings to address prolonged/returned use. After we have taken the first step towards service cycle exploration time issues can be dealt with in new, interesting ways.

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Toward an Anthropology of Services

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Abstract

This paper proposes an anthropology of services with implications for service science and design. Contemporary services are often presented as a rupture with previous economic regimes such as manufacturing, a discontinuity that allows services to be conceptualized as a professional domain. We argue instead that services have long characterized the human condition and that they are always embedded in local contexts. An anthropology of services explicates these social contexts to develop more varied and grounded approaches to service encounters, notions of co-production and co-creation, value propositions, and service systems. Paradoxically, an anthropology of services draws attention to the conceptual and methodological messiness of service worlds and in doing so it contributes to expanding our understanding of the variety of services, the limits to their conceptualization as objects of design, and the possibilities for intervening in and around them to contribute to human betterment.

KEYWORDS: anthropology, service concepts, human condition

Introduction

Many of the concepts that have been developed to distinguish services and service innovation from products and their design (Lovelock & Wirtz, 2003; Teboul, 2006) are both alluring and deeply problematic when viewed through the lens of anthropology and practice approaches (Bourdieu, 1977; Giddens, 1979; Ortner, 2006) more generally. The notions of service encounter, touch points, co-production, and co-creation take us immediately to the realm of interaction, conversation, and dialogue – concepts very familiar to those schooled in anthropology and those who look beyond the individual to understand the meaning and motivation of human actions. Value propositions in the service research parlance often stand in for the meanings that service encounters have for the participants which raises questions about what is not accounted for or acknowledged in descriptions of services that rely on cost benefit calculations for rationale or motive (Spohrer & Maglio, 2006; Alter, 2008; Basole & Rouse, 2008; Vargo et al., 2008). Recent formulations that combine services into service systems find resonance with notions in anthropology of holism, functionalism, and

structuralism and equally open the door to many of the same critiques that have been levied against anthropological views of systems as bounded unities (Clifford & Marcus, 1986; Segal & Yanagisako, 2005; Bubandt & Otto, 2010). Finally, service dominate logic (Vargo & Lusch, 2004; 2008) which has been proposed as an alternative to economic characterizations of services as distinct from and secondary to products directs attention to networks tied together by actions and interactions that co-create value. The focus is on service as “a process of doing something for another party,” with emphasis on relationships, instead of transactions narrowly defined. Here too there is a resonance with the anthropological focus on enactments and performances.

Anthropology also calls upon us to address fundamental questions about design as a human activity as it relates to services. The field of service design is still relatively new and growing and for the most part it has adopted concepts and strategies from product design (Holmlid & Evenson, 2007), sometimes without fundamentally questioning whether assumptions made about products and their design transfer easily to services. As user centred design firms and departments within larger enterprises shift to emphasize service design (Evenson, 2005; Kimbell, 2009; Strickdorn & Schneider, 2010; Meroni & Sangiorgi, 2011; Polaine et al., 2013), the focus often continues to presuppose a designed object. However, there are new challenges for service design, which are tied to the fact that services are more than the objects (technologies, tools, artefacts, physical spaces) that enable them. Since services include intangible elements that manifest through interactions between providers and recipients, questions are raised about our ability to control service outcomes, the limits of intentionality in design, the status of ‘unintended’ consequences, and the role of the designer qua designer in service design.

These conditions, we argue, open a space for an anthropology of services that can contribute to understanding both how services are affecting everyday lives and institutions, and how services can contribute to human betterment. The purpose of this paper is to explore the space that an anthropology of services might occupy. It proceeds by first grounding service worlds (Bryson et al., 2004) within a larger understanding of the human condition (and its diversity) which is a primary domain of anthropology. Second, it provides an overview to some basic service concepts and how they are both problematized and enriched by anthropology. Third, we discuss the essential ‘messiness’ of service worlds that stands in stark contrast to the clear representations of services that are often encountered in the service literature. Finally, we foreshadow some of the issues that we believe an anthropology of services should address.

The Human Condition and Contemporary Service Worlds

Services can be understood from a broader, anthropological perspective, as part of the human condition that existed long before there was a formal service sector. Part of the human condition and a basic way humans adapt involves providing services to one another. Services broadly construed have always characterized societies. For example, shamans and herbalists have long provided healing services and artisans have offered services such as boat making, decorative painting, or flint knapping. While service worlds are seemingly new, they are also firmly grounded in a human past where services were fundamental to human adaptation and to the organization of societies. From this perspective, humans have always inhabited service worlds, although these worlds have taken very different forms throughout human history. Today as in the past, people live in service worlds. The services within these worlds are seldom clearly bounded and precisely because they are embedded in social

institutions and the wider practices of society, they are difficult to clearly demarcate. For example, universities provide the service of education, but they simultaneously provide dating services by bringing together potential romantic partners. A failed university course may be viewed as successful if the right partner is found, although it is unlikely that official university descriptions would list this service.

The interactions, transformations, and meanings that characterize services accordingly require understanding them in the variety of social contexts where they are performed through people's day-to-day practices. If we take this broader view of services as deeply entangled in social life then many of the assumptions and limitations of contemporary conceptualizations of services are uncovered and new directions for how to affect service worlds are identified. The grounding of service worlds in the human condition is not simply an academic exercise, but a practical one that enables broader descriptions of services, viewing them integral to societies, including non-western ones. In so doing the scope of alternatives is expanded and the consequences services have on how people live is brought into focus.

Value more than cost benefit

As we examine the human condition we realize that services cannot be described simply and unproblematically in terms of 'value propositions' expressed as economic transactions between individuals or firms. Services figure prominently in context of human adaptation through the millennia and across cultures where value is fashioned at the interface between people and social institutions. Value infuses all that humans do rendering it irreducible to economic value propositions alone. Instead services only make sense and are comprehensible in relation to particular social contexts. Value is not intrinsic to the service, but must be understood in relation to broader societal concerns. Service transformations or outcomes are neither equally comprehensible nor similarly valued in different societies. For example, an expedition to the top of Mount Everest may only be valued among populations where people value risk to individuals. In a related way, massages given to people with a history of injury, for example athletes, will be valued differently than by those who seek stress reduction or relaxation.

Services perform larger social purposes beyond the immediate and individual benefit gained by the recipient or provider. For example, partaking in particular services can mark membership in certain categories of people. Attending an opera can indicate a kind of sophistication and designate association with a particular 'class' of people. Similarly, attending a gun show can reinforce and denote certain political commitments. As we look to understand and participate in designing services, we need to see the broader societal implications that attend the growth of the service economy, including what we value not only as individuals, but as a society.

Multiple perspectives

In addition, the 'value' of a service will depend on characteristics of those benefiting from the service and their active participation in enacting the service (Edvardsson et al., 2011). The perspectives of the people involved in services matter since it is they who define the interactions and encounters that characterize the service and the value that is created. Reducing the definition of a service to a single one agreed upon by all participants is unnecessary and often misleading. A rich literature in the social construction of technologies (Pinch & Bijker, 1984; Kline & Pinch, 1996; MacKenzie & Wajcman, 1999) has shown how, despite the intentions of designers, their material creations are assimilated and reworked by users. Kline & Pinch (1996, p. 765) write, "...the use of an artifact or system has not only resulted in unforeseen consequences, but that users have helped to shape the artifact or

system itself.” Bricks may have been designed to be mortared into walls, but generations of students have stacked them to support wobbly book shelves. Designers may decry these ‘repurposings’ but they are nonetheless ubiquitous – so too with services. There is no privileged definition of the constituents of a service and participants will make of them what they will, despite pleas for consensus.

Shifts in where services performed

Anthropology has long understood that human societies do not stand still. Earlier notions of fixed, unchanging ‘cultures’ of indigenous peoples have given way to the realization that change (which should not be read as unilinear progress) is a constant. Change is always a part of the human condition. If we look at how activities in families have changed under modernity and over time (Harrell, 1997), we can see shifts in the services performed by and for families. While many of the services provided by families are not described in the contemporary language of services, they reveal a human past characterized by rich and complex services long before services were placed in an industrial sector and deemed the object of professional design and marketing. In effect, people performed services for each other in families that now are performed elsewhere and marketed as services. For example, there was a time when it was essential to be in a family in order to procure goods and have access to meals. Today there has been a huge shift in how provisions (e.g. clothing and household goods) are procured (through complicated supply chains) and increasingly meals are being provided not by family members but by fast food chains and grocery store takeout. The implication is that services in the context of the expanding service economy should be understood not so much as reflecting a change in what it takes to get on in the world, but as an expansion in the marketization and of services and in the ways technology reworks divisions of labour. As such services might better be analysed less as distinctive activities (e.g. meal preparation, job training) than as activities occurring in specific social, technological, and economic contexts.

Service Concepts

Many of the concepts that have been developed to help understand services have resonance with anthropological perspectives. Because services require that we pay attention to the interactions that people and organizations have with each other and with the material world, our understanding of services can be enriched by a critical assessment of contemporary service concepts through the lens of anthropology. Of particular resonance with anthropology are the concepts service encounter, co-production and co-creation, and service systems. We will briefly discuss each of these concepts and provide a critical reflection on them from the perspective of anthropology, exploring what might be missing or overlooked when these concepts are evoked to describe contemporary service worlds.

Service encounter

Shostack (1985, p. 243) defines service encounter as “a period of time during which a consumer directly interacts with a service.” These interactions include with the physical facilities as well as the people involved in delivering the service. Clatworthy (2010) more recently adds, “Each time a person relates to, or interacts with, a touch-point, they have a service-encounter.” Without diminishing the usefulness of the service encounter concept, we need to ask a set of prior questions; why do some of encounters or touch point interactions get labelled as constituents of a service; for what reasons; and with what consequences? It is overly limiting to label as a service only those encounters that involve the exchange of money

or that imply a formal institutional relationship as between a government and its citizens. Clearly, a service is rendered when a friend gives another a ride to the airport or a family experiencing a loss is comforted by neighbours. As we saw with shifts in the services performed in and by families, services need not be restricted to encounters that involve monetary exchanges. Once we relax the requirement of a financial or institutional transaction, the space of interest expands to include social encounters of all kinds, including those occurring in the emerging world of what has been called the sharing economy (Belk, 2013).

The concept of service encounter as defined in the much of the service literature also focuses attention on the individual, often overlooking the important role social context plays in shaping the encounter and defining possibilities for action and interaction. People come to service encounters with expectations that are learned through their experiences and those of others. This makes service encounters understandable to them. Some of the failures in providing quality healthcare services for example stem from a lack of understanding of recipients' social and cultural contexts, including the role other family members and the larger community play in health related activities (Saha et al., 2008). King et al. (2007) show how managing and treating coronary artery disease for First Nation people in the Americas is influenced by the relationship patients have with their ethnic community, this in addition to individual socio-demographic characteristics. The service encounter is best understood in relation to what it means to be a member of and participate in a particular society or social group.

Co-production and co-creation

One of the fundamental characteristics used to distinguish services from products is the inseparability of service production and consumption. As Zeithaml, Parasuraman, & Berry (1985) have argued, because services are simultaneously produced and consumed, they position the service recipient in an intimate relationship with the production process. In essence service recipients become co-producers of the service as they mobilize knowledge and other resources in the service process. Later Vargo & Lusch (2008) made a distinction between co-production and co-creation where co-creation is not focused so much on the production process, but on the outcome of the service and the value that results for both provider and recipient. Customers or service recipients are viewed as the co-creators of value because their actions affect service outcomes and the attending value received by provider and recipient. In this sense service recipients along with providers are both co-producers and co-creators of services and their outcomes. More recently Vargo & Lusch (2011) have stressed the interchangeability of provider and recipient roles, choosing to use the "more abstract designation" of actor-to-actor relationships.

But if we accept that services are defined and valued in social contexts, then precisely because services are co-productions, people must learn how to participate in service encounters by identifying characteristic elements of the service. Part of being a competent member of society involves learning how to perform. This can include such things as when members of post-colonial societies are taught how to present themselves as good hosts for different categories of tourists (Hall & Tucker, 2004) or when Latinos are trained to perform appropriately as Benihana chefs (Hirose & Kei-Ho Pih, 2011). The 'co' in co-production and co-creation often conceals the complexity of provider-recipient relations, including the unequal character of some of these partnerships. An anthropology of services insists that these complexities be acknowledged and understood in order that we might transform these relationships to achieve societal or community aims that go beyond the immediate outcome or value delivered by the service.

Additionally, because services are enacted by people who participate in different institutions and lifestyles and bring different expectations to the service encounter, their role in the service process varies. As others have noted this introduces a significant element of unpredictability into services and service outcomes (Bitner et al., 1997; Grönroos, 2011), which argues for the need to recognize a level of openness and modesty in the ability to definitively define and specify services or to design them.

Service Systems

Services have been characterized as best understood as part of service systems where people, technology, internal and external service systems are connected via value propositions, and shared information (Spohrer & Maglio, 2010). In the service literature, service systems often are described as existing in the world waiting to be discovered by service researchers. Their reification often brings with it an assumption of a bounded entity, the service system, where what's inside and outside the system is to be revealed through study. Agency is often granted to service systems as for example when Vargo et al. (2008, p. 146) state, "service systems engage in exchange with other service systems to enhance adaptability and survivability, thus co-creating value for—for themselves and others." But here too a set of prior questions need to be asked; where do service systems come from; why are they conceptualized as wholes, why are some components (entities) of the service system called out and others for all practical purposes remain invisible?

While there is comfort in the notion of a service system in that it suggests that the service can be the object of scientific inquiry and can be described and engineered. However the system metaphor breaks down when it neglects to acknowledge the emergent quality of social life. Because services (like social life) are open and fragmentary, the ability to specify design requirements and directly tie those requirements to desired outcomes is imperfect. This in turn suggests that the unity of control and meaning that allows designers to convert intentions into designed 'products' is constrained in important ways. This is not to claim that services are random or unstructured, only that they deviate from how formal systems operate. Services are less designed and more assembled from fragments of practices, institutions, lifestyles, technologies, and networks.

The talk of service systems can be misleading as it fails to address where the systems come from and what training is needed to see them. In addition, it leaves unaddressed the question of whether or not everyone will define particular service systems in the same way. And if not, then in what ways are service systems actively constructed by those who study and design them? One of the risks of characterizing services as systems, is that what is *not* included in descriptions of the service system will in fact affect outcomes. While unplanned outcomes are inevitable, service systems' discourse can give a false sense of completeness, inhibiting critical reflection on the ways the system as delimited has silenced some voices. And moreover by emphasizing the ability to engineer service systems to be efficient and effective as systems, the impact on the lives of people whose concerns fall outside boundaries of the system can easily be overlooked. For example, in efforts to make healthcare services more efficient and effective from the perspective of insurance companies, hospitals, healthcare providers, as well as some patients, their impact on cultural minorities may not be recognized because their particular life worlds fall outside the system engineered for efficiency.

Messiness of Service Worlds

The world is far messier than the concepts we use to impose order would suggest. There is a gap between the messiness of reality and how we think about the challenges and opportunities to understand and design for service worlds. Our interest in service design reflects the human desire to shape the world. However, the complexity of services, their ubiquity and pervasiveness, makes them difficult to design, at least in any familiar meaning of design.

The material and immaterial

People have always lived in social worlds that are simultaneously material and immaterial and they have always been engaging each other to create things, ideas, and interactions. It is only recently that the things we make and do together have been framed as goods or services, and together as products. Societies have always been assemblages of both the material and the immaterial – rendering what we today distinguish as goods or services as inextricably entangled. A nomadic hunter living in the desert of southern Africa plays a flute crafted by his uncle to entertain families gathered around the campfire after a successful hunt (Lee, 1979). This scene could be described as constituted by services; the service of the uncle who designed and built the flute, the service of the musician who performed under the evening sky, the service of the hunters who killed the game and butchered it for distribution. This scene also could be described in terms of the goods that were exchanged, the flute perhaps given to the nephew at a key juncture in his life; the meat allocated according to long standing rules. The record of the human past and of those contemporary societies who participate only peripherally in the so-called service economy remind us that the human experience and the meanings we derive from our interactions with each other and with things depend on specific sociomaterial arrangements (Suchman, 2007). It follows then that it makes no sense to unbundled services from goods or from the specific locales in which they are enacted.

Designing includes participating in a social context

Before there were designers, things were designed. Before there were users, things were used. Design like all activities is embedded in a social milieu. The notion of a user presupposes a particular relation to that which is used just as the notion of a designer presupposes a relation to a designed entity. But we know from an extensive literature on design-in-use (Henderson, & Kyng 1999; Aanestad, 2003; Redstrom, 2006) that the role of user and designer are not so easily demarcated. Problematizing the role of the designer extends the reach of design to include that which is constituted through ongoing social interactions (Clement, 1993). The conceptualization of services as co-productions and co-creations necessitates that service designers acknowledge and reflect on the limits of their role in design. Furthermore the institutional and organizational positioning of the designer with respect to that which is designed defines opportunities and constraints on participation in the service and as such in its ongoing design-in-use. Akam and Prendiville (2013, p. 31) make a similar point when they direct us to, “re-situate services as an organic, co-created process and see co-designing as a journey and process of transformation in how we design our world, and ourselves, with others.” An anthropology of services calls for an examination of the situated practices of designers and their relation to a broad range of actors who animate the service.

The sociality of services also reminds us that designers also participate in service worlds where they learn to see problems and opportunities—and construct services as their solution. They do not just discover services in the world that are then described and analysed, much like a natural historian. They participate in communities of practice with their own conventions, which are consequential to their ability to intervene in service worlds.

Likewise, what is designed—a set of symbols, rules, specifications, models—will be enacted through similar social processes. Thus the implementation of designed services, at least in a straightforward way, is dubious because our designs cannot specify all the salient adjustments and accommodations that will be made by differently positioned people as they enact and manage the service-in-use.

Recognizing that designers also participate in service worlds along with those they design with and for also has implications for how we understand the design process. Distinct starting and stopping points that often characterize the design process are typically lacking in service design. Despite the ubiquitous discourse of the importance of service innovation, the various elements from which services are built have histories and as such are less *de novo* productions than modifications to on-going flows of activity. As such the designer writ large is better understood as intervening in interactions and exchanges that are both enduring and partial.

Moving Ahead

While we argue that service worlds in general and service design in particular can benefit from an anthropology of services, much work remains. We propose to orient the steps ahead toward the following issues.

First, the anthropological record of documenting diverse ways of life can contribute to how we conceptualize and engage with services. This record allows us to better understand how specific services are consistent with or complementary to what has been learned about the human condition. By taking a long-term, historical look at services as part of the human condition, the scope of services for human betterment is expanded. By assuming that services past and present are embedded in a social context, we can simultaneously identify resources that the designer of services can draw upon while better recognizing the limits or constraints on any effort to design services. Proceeding here requires anthropologists to reassess the contributions of their discipline with an eye to teasing out the implications for services and then to develop ways to make the results accessible and useable for designing services.

Second, anthropologists must engage service design as practitioners and not merely as external experts providing new data or as critics of the field. Anthropological perspectives on services push us to consider our own practices as members of communities of practice working within specific organizations and settings. This focus on the design of services is fundamentally about designers' relationships to other people, both real and imagined, past and present. The incorporation of anthropology here is about understanding the work practices of service designers and not just about the people for whom they are designing or the services they propose to implement. Here the emphasis is on what sorts of institutions are implied by conceptualizing service design in particular ways and in what manner those institutions include anthropologists.

Third, an anthropology of services argues that people, including designers, populate a world that has been largely designed and built by others and as such the scope for design is both ubiquitous and restricted. There is little that is created *de novo*. Accordingly, service designers must acknowledge and take into consideration that the people they are designing for are already tinkering with their own lives and are always participants in the work of design, although they seldom are viewed as creating the clearly bounded service systems that populate textbooks. If the world we populate is already largely constructed, then designing is

achieved in fragments and managing unintended consequences at the limits of efficacy and power are critical. The call here is for an anthropology of services that depicts everyday life and how it might be different than it is, how ordinary people design in ways that may be ubiquitous and yet unrecognized, how designers themselves enact the activities they believe constitute design, and what else they are doing to realize and manage their contributions to service worlds.

Finally, the question of values in designing is far more complex than that of finding a good value proposition in the business sense. As demands for high-quality services grow into new realms, business models that equate value with price will seem unnecessarily narrow. Of course, this is nothing new – services have always been more than the monetized variants we encounter in today's literature. Yet today services are frequently conceptualized from the perspectives of business and information technology professionals which limits the focus of design, presupposes the skills and knowledge deemed relevant to designing services, and often ignores how the costs and benefits of adopting new services are borne by different members of society writ large. The challenge here is for an anthropology of services to explicate the assumptions, concepts, values, and methods that today seem commonplace and to contribute a discourse that does not assume or naturalize a particular approach to what it means to design services.

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Design strategies for human relations in services

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Abstract

This paper investigates the degree of control that designers might have over human relations in services. For this purpose, a number of speculative service designs were devised to address work-related stress. We focus on three of the generated designs, where design interventions have made changes to the material circumstance in which contacts among users and providers take place. The paper looks into the capacity of design to promote discussion and social support, and its capacity to make objects act as ‘quasi-others’ in social encounters. Through the case studies we show how different levels of designerly control can be exercised in practice.

KEYWORDS: design *of* service, design *for* service, generative research

Introduction

Should service designers strategize for the social encounters among people in service settings? As seen in the growing body of specialized service design literature, answers to this question are typically an assertive ‘yes’ or its opposite: a decided ‘no’. Supporters of the first stance traditionally leant on the service research literature predating the emergence of the service design field itself. Here the emphasis is on importance of prototyping tools and methods that allow designers to plan for social encounters in service settings. These tools and methods (e.g. service blueprinting, storytelling) are meant to allow service designers control over the behaviours of people in a service setting, in their role as providers and users.

However, more recently some design researchers have warned against the planning of human relations in services, for this would place important restrictions on the improvisation and learning that can occur during service encounters. Researchers favouring this alternative

approach conclude that designers cannot directly ‘design’ (i.e. strategize about) the encounter itself. Instead, inspired by related work on social design and experience design, they argue that designers should offer creative support for a community of people and institutions, and only after such a community has formed itself with a set of identifiable needs and wants.

In this paper we revisit the – sometimes implicit – debate about the designerly control over human relations in services. In the following section, we will argue that both of the above positions assume that the level of control of design over human relations has a direct impact on how good the service encounter will be. Contesting this assumption, we posit that the degree of control that designers possess should be contingent on the degree in which people in a service setting can accept the intervention of external parties to improve their social well-being. Next, we investigate the influence that designers have in improving the well-being of people in a service. We do this by designing and studying a number of speculative service concepts that address the risk of unhealthy levels of work-related stress. Over the different cases, we investigate how each design intervention introduces material changes to an existing situation in which contacts between people take place (in this case contacts among workers, colleagues and potentially stress relief experts). These designs show very different levels of control over human relations, depending on the focus and the research carried out by the designers. Finally, we showcase three particular examples where designers have made very different choices on the degree to which they seek control or flexibility over human-to-human services exchanges. In doing so, the three cases show how there might be very different avenues for design to strategize about the control over human relations in services, all leading to promising directions to help workers balance their stress levels.

Designing human relations in service encounters

Services comprise two domains that may be the object of planned innovations: the interface (or ‘front-office’), which accounts for the most immediate interactions among users and providers, and the infrastructure (or ‘back-office’), which comprises the social-technical resources that provide support for such interactions. Secomandi and Snelders (2011) argued that the interface (including its integration with the infrastructure) is the primary domain of service design work. This work is complex, because the service interface is often heterogeneous; it is built from a diverse set of touchpoints between providers and users, including physical objects (‘tangible evidence’), environments (‘servicescapes’) and face-to-face human exchanges (‘service encounters’). In addition, the experience of the service interface is often dispersed over time and space, which means that designers can easily become confused about what is part of the service interface for users and how that is integrated into a complete experience for them. For many authors, the heterogeneity of the service interface gives rise to a need for orchestration in the design of services. With this is meant that the expertise required in the design process is diverse and needs to be integrated in order to create a coherent user experience. Pacenti, for one, spoke of service design as the ‘direction of directors’ (*regia di regia*) (cf. Sangiorgi, 2004, p. 30).

Given the need for orchestration across different touchpoints, designers have turned to the extant marketing, management and engineering literature for tools and methods that help them plan the user experience of services. Although planning tools and methods coming from those areas eventually target the domain of the service interface (e.g., Shostack, 1984), they most often portray it as just the ‘top of an iceberg’. In other words, the interface is seen as a small part of a larger operational/informational system that must be developed to

support the service delivery process. This larger part of this system, the service infrastructure needed for delivery, is mostly hidden (underwater) from the user's experience.

The iceberg metaphor poses a potential problem for service designers, because it describes the interface as an insignificant part of the system, whose importance hardly influences the development of the underlying infrastructure. Thus, service designers are left with little decision-making power, since many of their decisions at the level of the interface will have already been made by others in order to create an efficient and effective infrastructure.

One could argue that these problems are not new for design. Ever since the industrial revolution, designers have had to conceive of satisfactory user experiences while working within (or around) the technical/financial constraints posed by mechanised production. In services, however, the non-mechanical, social dimension of human relations in a service setting is often in the foreground of the user experience of the interface. Thus, the question of whether human relations can be planned for as part of the service interface is a relatively new one for design. According to Penin and Tonkinwise (2009, p. 4327), it is the 'design of people' what differentiates service design from all other forms of design.

As stated above, answers to the above question found in the service design literature alternate from 'yes' to 'no'. The affirmative way sees no problem in the steering of the social behaviours of people in a service setting, which should be moulded in such a way that it becomes part of a social-technical system with predictable outcomes. This position owes much to the ideas behind a technique called service blueprinting, developed in the area of service marketing (Shostack 1984, 1985). Shostack (1977, p. 79) went as far as to suggest that political candidates may be 'packaged', insofar as their hairstyles and public speeches are carefully chosen by a dedicated committee. Her work has been largely incorporated in early service research (e.g. Moritz, 2005; Morelli, 2002; Moggridge, 2007, p. 412-429), and it had a strong influence on the design community.

As service designers adopted the service blueprinting logic, there have been attempts to make the control over service encounters less mechanical. Tools like customer journey maps and storyboards were introduced to service design with the explicit aim to 'facilitate empathic engagement' with the user experience of the service (Stickdorn & Schneider, 2011, p. 158). Nonetheless, it should be noted that the interactions between people in service settings described in such tools remain heavily scripted and protocolled, thus promoting strict control of design over social interactions in a service setting.

Lately, service design researchers have tended to answer the question whether human relations should be planned in the negative (e.g. Evenson & Dubberly, 2005; Jégou & Manzini, 2009; Kimbell, 2011; Meroni & Sangiorgi, 2011). Cipolla & Manzini (2009, p. 50), for instance, propose that human relations can only be 'meta-designed', meaning that planned interventions should only come 'behind or beyond' the relations themselves. Doing otherwise would mean reducing the depth and richness of human participation in services.

We may take the example of cheap airline transportation to flesh out the opposition presented above. In many cases of cheap air flight, services are devised around predictable operation units. Providers and users are then treated exactly as such units, with their behaviour and interactions being controlled by strict procedures. The result is a service delivery process that is rationalised to the extreme and produced at extremely low operating costs. Naturally, the low cost persuades many customers to prefer this type of service.

On the downside of this example, we should point to what happens if users and providers do not stick to the rules and regulations of the service delivery system. Many people have

had a dissatisfactory service experience with low cost carriers when not behaving according to the carrier's plans before, during, or after their flights (e.g. they chose the wrong transportation mode to the airport, they forgot to check in online and print out the boarding card, they queued in the wrong line, etc.). The result in such systems is that users get penalized for their 'misbehaviour,' leading to social interactions between people that can be characterized by stress, accusations, mistrust and suspicion. Such encounters can create a Kafkaesque setting where users and providers feel subjugated by a crude inflexible system where standards are pre-set for the behaviour everyone within the system, and where deviations from such standards are averted by the small print in the service contract that can lead to hefty fines. In sum, people can end up being treated as a potential menace to a highly rationalised service delivery process.

However, many airlines, even if their focus is on creating cost-effective offerings, aim for a different experience of their services, particularly of the human relations within them. An example that contrasts with the one described above is a service by KLM - Royal Dutch Airlines called 'Meet and Seat', for trans-continental passengers. In this service, before boarding the plane, passengers are asked to show their Facebook or LinkedIn pages to other passengers and to select someone with an interesting profile as the person to sit next to. So here KLM is appealing to the passengers' self-assessed need for social contact with a self-selected other, and the company remains in the position of merely supporting the extension of virtual social communities (Facebook, LinkedIn) into real life settings. In many ways, this type of service fits the advice by Jégou & Manzini (2008), Kimbell (2011), Meroni & Sangiorgi (2011) and others in the service design field, who argue that designers should support existing communities for service improvements, rather than establish a plan of improved service production before such communities have formed themselves.

However, from a design perspective one can raise the question whether KLM's approach is always better than the approaches of cheap airline carriers. Returning to the Meet and Seat service, there is a danger that passengers will end up disappointed by spending long flights next to self-selected strangers. As Frost, Chance, Norton & Ariely (2008) showed in the case of online dating, meeting someone in real life who, before, had seemed attractive online often leads to rejection and disappointment after the first contact. Applying this finding to KLM's service, what if you meet your match on a long-distance KLM flight and immediately start regretting your choice? How satisfied would you be with the remainder of your flight together? Thus, even while being supportive of self-organised forms of social relations, such design interventions might still lead to dissatisfactory results for people in the service setting.

To resume, the two directions found in the service design literature and described above stipulate distinct approaches to the practice of designers. The first is a practice driven by a desire to sustain a cost-effective infrastructure for the service delivery process. It employs tools and methods devised to control service encounters among users and providers, which can curb the spontaneity and improvisation that may arise during the encounter itself. The other is a practice that aims at having service encounters based on existing communities with self-formulated needs and wants. It sees a role for service designers to flexibly co-create such services together with and within such communities. In addition, the examples also show that the questions for design here are not solely social, because many of the human relations that were organised (or supported) in these examples are integrated with a social-technical infrastructure (e.g., ticketing and checking-in operations), and with technical artefacts present in the interface (e.g., printed tickets and Facebook pages).

In the examples above of airline carriers, both design approaches may lead to interesting outcomes for users. But they also have pitfalls that can cause dissatisfaction and

disappointment, especially in the human-contact part of the service experience. In the first case, because the need to control human behaviour would lead to heavily scripted actions that afford little room for a fruitful and constructive social dynamic among users and providers. In the second case, because the need to soften the grasp over human behaviours would mean that designers cannot influence the emergence of desired social dynamics beyond those that the communities themselves may have created inappropriately. Thus, a good service is not fully determined by the degree of control that designers exert over human relations. There may be situations where the desired level design control is more goal-directed and situations where it is more subtle and open-ended. For designers, the issue is not so much to decide whether or not to control the contacts among people in a service setting, but instead to know how to adequately put such control (or lack thereof) into effect in order to improve the social well-being of people in a service setting.

Case studies regarding work-related stress

In this paper we discuss a study that is part of a larger project GRIP, funded within the Creative Industry Scientific Program in The Netherlands (CRISP) with the initial members being the design schools at TU Delft, TU Eindhoven, Design Academy Eindhoven, and Philips Design. GRIP looks at how tight the designer's grip should be on the development of new services about work-related stress. Work-related stress was chosen as the field of interest because people who suffer from the effect of stress can be characterised by a 'loss of self' (loss of self-awareness, loss of sensing bodily reactions to stressors, loss of capacity to set priorities, etc.). In other words, stress is associated with people losing their sense of what they need or want, and they come to rely on others to help them in their struggle: family and friends, colleagues at work, and specialized coaches and therapists.

There is professional expertise about stress cure and prevention coming from medical and social researchers, company doctors, therapists, government bodies, unions, etc. This expertise can be deployed in service settings where expert coaches (providers) interact with clients suffering from stress (users). In some cases, such interactions are protocolled, for instance, when experts such as company doctors meet clients and their interaction has to meet medical and/or legal standards, or when experts introduce relaxation and bio-feedback methods for their clients. Design can play an additional role in improving existing stress relief services and in thinking up new services for balancing work-related stress. An important contribution of design is that it can create new material conditions that allows for a wholesome social dynamic among workers and other people in their vicinity.

In the beginning, we identified and worked with a group of consultants and institutions that had already developed expertise on work-related stress (or its euphemism: 'vitality at work'). Based on the cooperation, we worked with a selection of these experts to (re)frame the problem setting, define new types of relaxation and biofeedback technologies, and co-create speculative designs involving experts (stress researchers and stress relief service providers) and end-users. In this paper we focus on over 25 speculative designs that were generated by project members, mostly bachelor and master students from TU Eindhoven, working individually or in groups and receiving advice by design researchers and other industry

partners.¹ The projects were set up in a way to connect research to design outcomes through an iterative process described by Hanington (2003); this includes stages of desk and user research, scenario creation, pilot testing, expert reviews of documentation, prototyping and final testing. Each project lasted for a complete semester, with students spending most of their study-load on it. Over a period of two years four waves of projects were organised, allowing every half year for intermediate reflection over the designs and their underlying strategies for control over human relations in services.

The generated designs embody very different approaches to stress relief, depending on the specific interests and knowledge base of the design students, and their academic and industry partners in the project. After analysing all speculative designs, we selected three examples that best illustrate the range of strategic choices designers have made regarding control or flexibility over human relations in services (Figure 1):

- (a) Little Devil registers how long office workers sit at their desk uninterrupted. Placed on top of the desk, the object shows the progressive build-up of stress, up to a point where it 'chases' workers away from their desks.
- (b) Co-Cup is intended for home workers to share coffee breaks with remote colleagues. They do so by drinking from smart cups that are connected to each other and to an application for casual video communication.
- (c) The Beauty of Stress assesses aggregate stress levels of a group of workers over the course of the day. It provides feedback by publically displaying beautiful colour patterns.

Design strategies for balancing work-related stress

In this section, we will describe each of the designs identified above and analyse how they set the material conditions for human relations between people in a service setting. Our analysis is based on commonalities and differences found in the employed design strategies, and on expert and user insight captured at different stages of the design process.

Little Devil (design: Rhys Duindam)

Little Devil sits on a person's work desk and monitors the duration of his or her seated work activity. As one continues to work, the device starts to stretch, as a visible sign for how long the person has worked without taking a break. Then, after reaching a certain threshold, the device suddenly attracts a lot of attention by puffing and moving as if hyperventilating. At this point it will become hard for anyone close to Little Devil to continue working.

Little Devil aims to help people with stress through negative reinforcement (i.e., stimulating people to actively avoid reaching dangerous stress levels). The desired behaviour is for a worker to take regular breaks during a workday and to be intrinsically motivated to continue this behaviour. The solution provides insight into one measured parameter: the duration of uninterrupted seated work. By giving immediate feedback to rising stress levels, the worker is nudged towards taking action, by walking away from the desk and relaxing for a while. If the worker ignores this signal and passes a threshold, everyone close to Little Devil will be forced to temporarily stop working.

¹ Some student groups split up their work to generate individual solutions, but in the end their work did not differ that much. Therefore, it is hard to provide an exact number of different designs that were generated throughout the project.



Figure 1. Three examples of speculative designs to help balance work-related stress: Little Devil, Co-Cup, and The Beauty of Stress.

Little Devil went through a number of iterations before it was developed into a working prototype. Initially, concepts were developed and evaluated by experts and users through interviews and user tests with the concepts. One insight was that ‘people want to feel in control of their own stress management’. A specific concept called ‘Blob’ was highly popular because people appreciated its life-like character, and did not want to see it get hurt because they were stressed. Subsequently three different Blob concepts were developed (a cardboard model, and two working prototypes), and evaluated by experts and users to further explore shape, interaction and movements. This led to the insight that direct punishment would not motivate people to change behaviour (it felt like the object was in control of people’s stress). However, a related but subtly different psychological principle of negative reinforcement might work as a motivational technique. For the final working prototype, ten different behaviours for negative reinforcement were developed and tested (ranging from shivering, to vibrating or playing cheesy songs). The final prototype of the Little Devil was used for a more extensive user test (of approximately 1,5 hours) with 6 participants.

Results of the user evaluations with the final prototype were promising. Strictly speaking, Little Devil is designed more as a product than a service, because its main interaction is between a user and a device. Nevertheless, the device visualises to others in the same room how someone’s stress is building up, which triggered spontaneous conversations about stress with colleagues during evaluations. In addition, Little Devil’s behaviour of hyperventilating means that it becomes a ‘quasi-other’ in its relation to users, inviting simulated forms of human-to-human interaction. By slowly becoming stretched, and through its attacks of hyperventilation, Little Devil acts as a mirror to workers who do not take regular breaks, and it nudges the worker and his/her colleagues to take breaks together.

Co-Cup (design: Marleen van Bergeijk)

Co-cup provides a physical connection between colleagues that work at different locations (i.e. in the office and at home). People working from home have less contact with their colleagues, and thus fewer opportunities for casual social interaction. The designer of Co-cup wanted to reconnect workers by bringing back collegial encounters. The solution was to connect distant colleagues by means of coffee cups that are linked to their laptops via a USB cup holder. When one employee decides to take a coffee break the cup is removed from the holder, and the coffee cup of other colleagues will blink as an invitation. The colleagues who receive the invitation can choose whether or not to react. If they pick up the coffee cup as well, the one who sent out the invitation will be notified by a light signal. If the coffee cup remains lighted, that means other colleagues are also taking a break at that very moment. The result is a collegial moment for co-workers located apart over long distances.

Co-cup is a connector, but it also reminds employees of their work relations, and of the need to take breaks for informal contact. This is different from other individual solutions for break reminders, like RSI software. At the same time, Co-cup is deliberately chosen not to simulate face-to-face contact as part of a work assignment. Instead, it can be used next to existing electronic tools commonly used for work, such as e-mail, telephone, Skype, chat and

other internal work communication systems. The Co-cup concept symbolizes the essence of social communication in an abstract way – sharing a moment of thought together.

Initial work on the Co-Cup started with brainstorming and ideation. Many concepts were developed, out of which three were selected and developed in more detail, including a name, description, and contextual rendering or manual sketch. After obtaining feedback from fellow students, teachers, and designers from Philips Design, the coffee cup concept was selected as a direction for design. Four different scenarios were developed, varying in level of playfulness, and the type of communication that should be supported. These were evaluated by five users on criteria of communication, cooperation, isolation, disturbing environment, and relaxation. The evaluation showed that concepts would be of higher value for home workers than for office workers, and that social interaction in the office already happens, but has potential to be stimulated more. It was decided to change the concept from connecting two colleagues to interaction between multiple colleagues. This adds more value for users in the office environment; they become aware of the number of colleagues taking a break and can choose to join or not. Afterwards, a working prototype was built and demonstrated at two different occasions, resulting in positive feedback from experts and potential users.

Beauty of Stress (Design: Fabienne van Leiden & Jasper Schenk)

The beauty of stress registers the stress level of a group of workers who work under tense circumstances, such as journalists with a daily deadline. The system displays for the group the gradual, collective build-up of stress over the day. This is achieved by a droplet system of coloured ink in a transparent and backlit water reservoir. This water reservoir can be hung against a wall, creating an attractive feature in a workspace for everyone to see.

Each working day starts with the reservoir filled with clear water. As stress builds up, droplets of ink will start to fall into the water. Each droplet represents a set amount of registered stress for the total group of workers. The higher the stress levels, the more ink droplets will fall into the water. In this way, the water reservoir can display how stress builds up for the group, and how much stress has built up by the end of the day. The final prototype was not fully functional (i.e. the sensors for measuring the stress and the filtering mechanism based on activated carbon were not included), but the overall effect of the Beauty of Stress could be shown by manually applying ink droplets in water. Very positive feedback was obtained from visitors at the student exhibition at the end of the semester.

The Beauty of Stress was initially developed through four different concepts for stress relief (consisting of a description and sketches). These concepts were presented to other students and academic staff, who provided feedback and suggestions for improvements. Based on this feedback the initial design direction was chosen of a group stress display (i.e. a visible measure of the stress level of an entire group of workers), showing a build-up of stress by slow movements (to avoid feelings of panic). Three stress displays were explored and evaluated by the designers: moving bars, moving sprocket wheels and ink droplets in water. The first two were rejected because the lack of freedom in their movement might lead to boring visuals after a while. However, the ink in water would never look the same, and for this reason it was selected for further development. Interviews with potential users (newspaper journalists and school teachers) and questionnaires among a general public were administered to get further insight into people's feelings regarding stress measurements and stress displays in public working areas.

What is crucial for this system is that stress feedback is for the total group of workers, making stress reduction a shared responsibility. This was supported by two interviewees who stated that they would be fine with having their stress levels displayed if others at work

would do the same. Furthermore, they expected that an anonymous stress display will activate them to discuss openly about sources of stress, which could help to reduce their own stress level. Relying on this information, the designers wanted to enable people to talk about stress without directly referring to themselves, and to make colleagues aware of the existence of shared stress within a group. For these reasons the display provides an attractive visual, even after many droplets have been released (and the amount of stress registered for the group would be high). Finally, the system has no memory of its own and refreshes every day. The designers intended the cleaning cycle as a moment for the employees to reflect on their group stress levels and to use each day as a fresh opportunity for change.

Conclusions

Currently, the service design literature has a dualistic attitude towards the manipulation of human relations in services, professing either that such encounters should be controlled, or that they can only be supported after they have arisen by themselves. In contrast, we argued that the level of control over human relations does not by itself determine the quality of a design. Through the case studies, we showed how different gradations of designerly control over human relations can be exercised in practice, and that each design strategy shows interesting directions for innovative services to help balance work-related stress.

Over the three discussed projects, designers had different intentions to affect human relations between people at work. The designer of Little Devil aimed at promoting social contact among workers, and at making the device itself a relational device, since it acted as a social mirror for the user. Co-Cup was intended to provide home workers with tangible evidence of colleagues, and to facilitate to have informal meetings together. The Beauty of Stress aimed at making stress a more acceptable topic of conversation on the work-floor, seducing and urging people to treat work stress as a group responsibility. Over these examples, designerly control over human relations could be forceful or absent, ranging from humorous (yet brute) force to nothing more than a beautiful (yet evocative) feature on the wall of a workplace. Different levels of control over human relations could even be seen within a single design. In the case of Little Devil, workers and co-workers are left free in their individual or social responses to slow, continuous feedback in the background. But if this feedback is ignored, workers and co-workers risk being forced away from their desks. In all these examples, the designerly control of human relations in services has not been inherently good or bad. Instead, decisions about control of (versus flexibility towards) human relations has been a part of the designers' palette of choices, helping them to take up an important social challenge in an original way.

Our cases are student work of early conceptual design, with limited indications of their potential to lead to innovations with a strong social or commercial impact. Still, the initial reactions of workers to our three examples were positive, and they tended to accept the design's interference in the social dynamic at work. Reviews by expert providers were also positive, even if to a considerable degree these designs aimed for stress prevention, and thus reduced the need for expert intervention. Most users and expert providers believed that design's meddling into human relations had a social purpose, and that was meant for the good of a more balanced work life. This suggests that the degree of control versus flexibility in the design of human relations in services might be conditioned by the degree in which users and providers can accept the influence of designers to improve their social well-being.

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Accessible self-service: a driver for innovation in service design?

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Abstract

Increasingly, services are being delivered via self-services technologies, where customers interact with technology, rather than the service provider. If the technology is not accessible, these self-services are unusable. Frustration and dissatisfaction make vulnerable customers abandon tasks or refuse to use these services. This paper takes the view that such cases should not be regarded as unfortunate or irrecoverable situations, but as opportunities for inspiring new types of services, including hybrid ‘technology/person based’ ones. Such thinking moves beyond user interface and ergonomic design approaches for designing self-service technologies, to designing ‘smarter services’, supporting customers in their use of self-service technologies, as well as better quality access to people-delivered services. Paradoxically, the latter services, involving organising visits to physical locations, present greater barriers for vulnerable customers. We argue that there is potential for greater engagement in the co-creation of services that, although inspired by vulnerable stakeholders, can be of value to all.

KEYWORDS: self- services, accessibility, vulnerability, Design for All

Introduction

In the world of service design, self-services are often viewed as a particular class of touchpoint in the overall service, or even an alternative means of accessing a service from a provider. The self-service version differs from the human-mediated version, in that contact with the service provider is carried out by means of a machine or an online application. For instance, it is possible to get cash from a teller inside a bank, or from an ATM; at the airport, it is possible to acquire your boarding pass from a clerk at a check-in desk, or from a self-service terminal (SST), or even to check in online and print your own boarding pass/download it to your mobile phone. Thus, when there are problems with the accessibility or usability of one of these self-service touchpoints, the overall service should be robust enough to have in place an alternative means of delivering the service. Problems with self-services

are thus often set down at the door of the domains of interface design, usability and ergonomics (Glushko, 2010) and left for them to deal with.

We challenge this 'technology mediated touchpoint' view, which we see as limited. We see that in many cases, self-services are no longer just one of perhaps several alternative touchpoints. Rather, they are evolving and becoming an integral part of the overall service, if not 'the service'. This can be evidenced in several ways: firstly, often there are no alternatives to self-service; secondly, if there are alternatives, they are not well supported and are inferior to the self-service option; thirdly, users of self-services are obliged to take a far more active decision making role in the service encounter than in that of the users of people-facing services.

To illustrate this with a simple self-service transaction scenario, such as buying a ticket. In many European car parks or train stations, patrons must obtain a ticket from a machine in order to use the service, i.e. to enter or leave the car park or to purchase a rail ticket. These, and other similar facilities, are often unattended. Assistance may be available in the form of supervisory employees but often they are not co-located with the building. This human-mediated assistance service is not an alternative; it is for 'rescue' situations, such as system breakdown or emergency.

Secondly, and more fundamentally, the alternative human-mediated touchpoints are most often not well supported, making them an inferior choice. For instance, ATMs allow us to withdraw cash 24/7. The alternative is to wait for banking hours and go to a 'bricks and mortar' establishment. Air travel self-services enable us to do our check-in and choose our seats on the aircraft, the same is not true of checking in at the airport with a member of staff before the flight, who no longer has freedom to assign seats, since most have already been 'booked' by passengers doing self-service.

Thirdly, in our argument, further than the lack of alternatives or 'equivalent in quality' alternatives, we regard self-services as an integral part of the service, because of the participation and decision making role played by customers in acquiring and fashioning the service to their needs and desires. In self-services, users must participate actively, in human-mediated services, they can take a more passive role -offering information when asked, accepting/querying the advice and the decision-making of others. This may not be so important for simple transactions, such as buying a single train ticket from a ticket vending machine. However, ticket self-services are already capable of engaging travellers in participatory and decision-making activities, where users make enquiries about combinations of discounted routes and prices in order to purchase those that are advantageous to them.

What this means is that self-service customers can explore options, and also try combinations that they find interesting and create an offering that is of value to them. The service providers also gain by adopting some of these creative suggestions and putting them back into the service as choices for others (Gerber & Martin, 2010). Indeed, a study of banking services found that 44% of computerised retail banking services were first developed and implemented by individual service users. (Oliveira & von Hippel, 2011), demonstrating that users are in this way service innovators. This finding can go to demonstrate that Service Dominant Logic (Lusch & Vargo, 2011) is an important, if not always explicitly recognised, component in the design of self-service that goes well beyond simple automating of transactions to creating new types of value based upon resources. Examples might be recommender systems and social media provisions. For this integrated bundle of offerings, there is no interpersonal service equivalent, nor likely to be. The service is predicated on the use of information and communication technologies, blurring the

boundaries of the distinctions between human mediated services and technology mediated self-services. To date, the Service Research community distinguishes self-service from other types of service only by its reliance on technology, with high activity on the part of the customer and low activity on the part of the service provider. This 'high tech, low touch' (Bitner, 2001; Glusko, 2012) distinction may no longer be so clear-cut. However, it is still relevant to note the level of activity (Wunderlich et al., 2013) that is required from the customer in obtaining the services. Without this active participation, the services are not available, and there is no real alternative. That participative interaction of the customer with the technology is the only means of obtaining the services.

Our perspective on self-services being more than just a touch point, to being the service itself, has been developed in part by our research (Darzentas et al., 2013) into the accessibility and e-accessibility of self-service terminals. Here we have seen that just 'fixing the machine' or 'making a web site accessible' often does not achieve the expected result of including those excluded by the design of machines and inaccessible websites. Instead, a wider service design perspective is required that can range from helping users in a 'just-in-time way', to complete re-design of the extent and types of service offered. We believe that this perspective will be both useful for prompting innovative ways to view self-services as well as to contribute to an understanding of the expanding role of self-services, or technology-mediated services, in the design of service futures.

This paper is organised as follows, in the next background section we set the stage of increasing ubiquity of self-services and user adoption as reported by contemporary commercial concerns and academic service management and business/marketing literature. Next we discuss the current approaches to dealing with problems of self-service technologies and use, from both accessibility research and management, retailing and marketing disciplines. This leads us to our central premise: that an inclusive Design for All approach to self-service can be a driver for service innovation. We further explain this position illustrated by a focus group study. We then move to conclusions and suggestions for future directions.

Background

As with many things in today's rapidly changing world, the landscape of self-services is complex and fluid. A number of interdependent factors are at work, amongst which the most clearly discerned are: that the range of technologies suitable for deployment in a self-service ecology has increased due to technological advances; that businesses have stronger economic reasons for promoting self-services, and that self-service is itself becoming more ubiquitous, reaching wider and deeper into all types of services (Rogers et al., 2007). Indeed, following the classification of Spohrer et al. (2010), we can enumerate services located within a) systems that move, store and process, where we find self-services established in systems for transportation, waste recycling, food and product distribution; b) services that are connected with health, education, finance, tourism, retail and leisure and c) services that govern and serve the public, such as self-service in filling in tax returns online, obtaining and renewing official documents (licences, passports) getting information, etc. One of the most startling examples of just how rapid this ubiquitousness is, can be seen in airport customer management. Here, the goals for self-service are for 80% automation, with travellers doing their own purchasing, seat allocation and check-in, luggage labelling, and boarding pass scanning, as well using automatic booths for immigration checks (Nicas & Daniels, 2012;

FTE, May 2013). Only the security check is not yet automated, although plans have been announced by IATA since 2011 (IATA, 2011).

Customers' reactions to the increase in self-services has been most extensively studied in the management and marketing disciplines. The cost savings from "enticing customers to serve themselves" (Bitner & Brown, 2006, p. 76) in a variety of ways can be extremely large. Because of this, businesses are concerned with the problem of customer acceptance, and acquiring a deep understanding of what makes customers adopt self-service technologies. At the same time rejection of self-service can be very damaging, with customers not just rejecting the service, but also the brand. Thus, the service management literature examines consumers' intentions to adopt self-service technologies along demographic and consumer traits or attitudes surveys. In the demographic studies, the investigators typically study age, gender, education and income, while among the traits they distinguish: technology anxiety; need for interaction (meaning people's desire to interact with person rather than a machine), and openness to technology innovation (Meuter et al., 2000, 2005; Bitner et al., 2010, Wang et al., 2010, 2013).

From this academically based research as from the commercial world, there is a well documented ambivalence to attitudes to self-service. On the one hand, there is appreciation of the customer benefits that can be gained from self-service, such as: autonomy, convenience, and 24/7 availability. As well, there is understanding of the increased speed and efficiency, especially for transactions that machines do well and tirelessly, (most of the time) such as validating tickets or scanning smart cards. Also, from a more socially oriented user experience point of view in various studies, younger people (aged 17-35) (Beinhauer et al., 2011) - but not only - have claimed they preferred the anonymity of self-service terminals to "judgmental employees" (Meuter et al., 2000).

In stark contrast to this last view, among the reasons for disliking self-services is the strong desire for the 'personal touch' and preference to interact with people. This may be also representative of a deeper need. Ethnographic studies of shopper populations have shown that exchanging a few words with the person at supermarket check out is viewed as a pleasurable part of the experience, and for people who might be socially isolated, perhaps the only time during the day when they have face to face contact with someone (Mind, 2012).

In addition, a range of reasons have been cited for customers rejecting self-services, from technophobia and digital illiteracy, to feeling self-conscious. These are the 'don't want to' category. Other reasons are extreme difficulties faced by some people with disabilities or age-related impairments or other inabilities to use these machines or online applications, because of the lack of accessibility features. This is the 'can't' category. Finally, there is a 'conscientious objector' category who believe that each self-service implementation is depriving a service worker of a job. Others question whether self-service in some case equates to 'no-service'. They cite in particular self check out in supermarkets, where customers must scan, weigh, pay and pack their groceries without assistance (Winterman, 2012; Poulter, 2013) or labelling their own luggage at airports.

Of course, this is not a rigid membership set. Just as some people may be able to use some self-services and yet be blocked from others, in surveys, self-styled technophobics have also stated that they would like to gain competence in the use of self-services (Wang et al., 2013). This is desired not only as a means to participate in the advantages that others more competent than them benefit from, but also to reduce uncertainty and enjoy the feeling of self achievement. Customers claim that the confidence to use the machines is more than just completing a task and obtaining the service, it helps them feel independent and able to

function within society, giving a feeling of self efficacy and of “being able to cope in the modern world”(Wang et al., 2013).

An important footnote to user acceptance is that many of the studies about adoption of self-service date from the late 1990s and early 2000s when self-service technologies were still fairly new. In particular online banking and payment systems with smart cards were just being more widely deployed due to technological advances in networking and security. Since then, there has been time for customers to become accustomed to the ideas and for the diffusion of innovation patterns described by Rogers (1983) to enact themselves.

Finally, a further development is that of the increase in use of personal devices to access self-services. These may be fixed, such as home computers, or mobile such as smart phones and tablets. Proficiency with technology increases with these devices that are familiar to their owners, in turn encouraging uptake of self-services that can be performed using them. At the same time, people who do not have personal device access are even more excluded from the services that are deployed with the expectation that the majority of customers have smartphones and Internet connections.

Summing up, the expansion of self-services into more and more areas, although no longer only pushed by service providers but increasingly expected by customers; the near or total absence of human mediated equivalents, and proliferation of new technologies, mean that those who are in the ‘can’t’ category are increasingly disempowered. The next section gives a brief overview of how this aspect of self-services is being dealt with in the services offered by self-service terminals (SSTs) or Kiosks.

Current approaches to problems of inaccessible SSTs

A range of types of problems can be distinguished. At one end of the spectrum, problems may lie in the design of the self-service terminal, where customers are not able to understand what is required at the interface, (what to press, what slots to use, in what order). Solutions from those involved in usability and accessibility of self-service often tend to technologically based solutions to ease the problems at the interface. As an example, recent work includes ‘contactless’ interaction (Madrid et al., 2013); automatically sensing the screen height and screen proximity required by users (Hagen & Sandnes, 2010) or enabling blind users to use touch screens by means of gestures (Sandnes, 2012).

At the other end of the spectrum, another class of problems go beyond the SST to understanding the service. For instance, people may walk up to a machine in a car park, but really need to understand the particular parking service paradigm in use, (e.g. is it pay and display? is it pay on exit? how do I pay? where do I pay? and even, when do I pay, before I get in my vehicle?, or on exiting by driving?). Some current technological proposals to deal with these situations are suggestions for interaction with a virtual assistant (Martin et al., 2011), or even human mediated help, delivered via video communication with a remote service provider (Syrjanen et al., 2012).

In addition to interface familiarity or service knowledge, another problem increasingly seen is that of users making false assumptions from one system to another and having expectations that are not met. For example, expecting a machine to accept different types of payment, (e.g. cash and debit/credit card). If the machines only accept credit cards, this blocks non-card holders from using the service, for instance buying their train tickets. This can be

disastrous for a traveller, especially when there is no other type of machine or human-mediated service available. In such a case, providing more information about the self-service system and operation (locations and capabilities, and how the system works) would be an extremely useful service that is actually rarely available. It would be of immense value for those customers who have time to plan their interaction - or for those who need to. This last category is often for those users who have more difficulty than usual in accessing services: for instance, users of wheelchairs or people with other mobility restrictions, such as travelling with small children or carrying heavy luggage.

Turning to management, retailing and marketing disciplines, who are the traditional promoters of service solutions, there is recognition that attitudes towards self-service are fundamentally moderated by the quality of the customers' previous experiences (Rogers et al., 2007). Therefore many scales are being developed by which to measure quality (Lin & Hsieh, 2011). The rhetoric of the self-service management and marketing literature centres on understanding how to get customers to adopt technology. Practical recommendations include suggesting that managers in supermarkets deliberately close some check-out counters, creating longer queues at those that are open, to persuade people to try out the self-service check-out options. Additionally, they suggest campaigns to attract young people by promoting the use of the SSTs as 'fun' and 'cool' (Lee, 2010).

In terms of vulnerable customers, it is rare to find in this literature many recommendations for encouraging use by or extending the user base of hard-to-reach customers. As an example, since the literature clearly shows that older people have more technology anxiety (Dean, 2008; Oyedele & Simpson, 2007) and more desire for personal interaction (Simon & Usunier, 2007) practical recommendations to deployers of SSTs are simply that they avoid installing the technology where older people are the dominant population (Lee, 2010).

In this discourse, rather than designing (or redesigning) the machine, the interaction or the service, the emphasis is on the users adopting and adapting to the machines and self-services in their present states. This leaves out those who are in the 'can't' category. It blocks off thinking about ways to improve the access to self-services and takes the approach that these users are special cases that need to be treated separately.

The role of accessibility in driving service innovation

While accepting that there will always be some people who need special assistance, we argue that paying attention to these cases of vulnerable customers, rather than considering them as outliers, could be used as opportunities to point to new services, or new ways of supporting customers in self-service situations, and creating new types of smart services. This is the philosophy of Design for All, a design ethos that takes an inclusive stance on designing, adopting a social model of disability and demonstrating that disability may inspire design (Bieling, 2010) or that stretching and stressing the design brief to include those people who are being left out, can often lead to benefits for all. Taking those who are presently locked out, for whatever reason, and assessing their experiences more systematically using known service design methods such as customer journeys, touchpoint design, service blueprinting and value exchange, could reveal a number of needs not previously voiced, not understood or possibly ignored as they are deemed to represent only a small minority of customers.

The theme of inclusion in Services has been emphasised by the British Standards Institute which published in 2010 a standard for Inclusive Service Provision (BSI, 2010), while the

UK Citizens Advice Bureau has also published a document aimed at service providers highlighting the importance of inclusive services (Iron & Silk, 2011). In service design and social innovation there has been work in various application domains, for instance travel (European Network for Accessible Tourism) and healthcare services (MacDonald & Teal, 2011). Researchers have emphasized the difficulty of hearing from all stakeholders, and described different methods and methodologies for including vulnerable customers into the design process such as crowd sourcing, (May et al., 2013); suggesting that all stakeholders play a role in developing prototypes (Blomquist & Holmlid, 2011); describing case studies using combinations of visualisations techniques and ideation processes (MacDonald & Teal, 2011).

However, service design has not said much (yet) about self-services. This is not an accusation, since service design is itself rather new. Again, in the case of self-service we are dealing with services where technologies are facing the customer, and hence it is to be expected that some problems may be considered to fall outside the range of service design, and into technical realms. What is missing is the development of service design methodologies that are adapted to self-service. As an example, we tried using ‘customer journeys’, to engage end-users to give voice to shortcomings they have encountered with existing self-services, describe the good and bad of their experience with the whole service, from ticket purchase to exiting the cinema after the film and help to suggest improvements/additions to existing options, and even expand into suggesting new types of service offerings that are not presently covered.

As an example we present a study of cinema goers. This was conducted by means of a small focus group (5 members) based in Greece. The participants were of mixed ages and abilities, and facilitated by the authors and a designer. The starting point for the discussion was to talk about existing self-services and the cinema experience. Standing in a queue for cinema tickets has been in part replaced by the ability to purchase tickets online. A paper ticket is still needed and this is obtained by locating an SST in the cinema foyer and inserting a code or the credit card used to purchase the tickets to print out the hard copy tickets.

The focus group members had all used these self-services, and on the whole, disregarding some problems in the user interface of both the online system and the SST, found the self-service advantageous, in terms of avoiding the queue, as well the opportunity to study the seating layout and make informed choices. However, a customer journey exercise revealed that there are opportunities to make the cinema experience more pleasant, and add value for customers and new opportunities for service providers.

Amongst these were: 1) improve the offerings: enable alternatives to the paper ticket printing, such as scanning of ticket on a smart phone screen (as at the airport); enable home printing of ticket; 2) expand the offerings: enable the opportunity to pre-order and pay for snacks from the concessions via a personal device, at the same time as online booking, or as the film is in progress. Although this was suggested by a cinema goer who is mobility impaired and stated that he can never get to the foyer in time to avoid the queues, the idea was heartily endorsed by a mother of 3 young children. She explained food and drink for the children is an important part of their entertainment experience as well as needed to help them to stay still and keep their concentration; 3) The question of delivering the snacks to the filmgoers in their seats was raised, when one of the older member of the focus group reminded us that there used to be usherettes to help people to their seats as well as to sell ice cream during the interval, all members felt this was a value-add they would appreciate!

The customer journey approach uncovered further needs when both the older focus group members spoke about the problem of getting in and out of the cinema complex. The mother also said this was a problem for her. Their present 'workabouts' included: 1) being dropped outside the main entrance by their partner/carer who drove the car to the car park while they waited outside the cinema, (if possible sitting down) for the partner/carer to come and pick them up to take them into the cinema itself; 2) always having a friend/relative/carer (as a favour or a paid service) to accompany them all the time. One slightly mobility impaired participant claimed that it was such a hassle to arrange all this that it made the organisation of a night out at the cinema a major headache, and that he missed being independent and having to depend on the availability of others.

Since we were framing our discussion along the dimension of self-services, the facilitators coordinating the focus group prompted discussions about technological solutions such as the delivery of snacks by drones, being escorted from pavement to seat by 'robotic guide dogs' (from the company NSK). Photographs of drones¹ and robotic guiding devices² were provided to help to concretise the idea. The reception to these suggestions was mixed. These were received with mixed feelings but provoked interesting discussions. Interestingly, participants did not focus on usability issues, but were concerned about being stigmatised, one participant said he would not use the robotic guide dog although he thought it was a good idea, unless there were quite a few of them in use by other patrons. Other members of the focus group identified with this and said that such a service whether by technology enabled self-service or human assistance would need to respect their need for dignity. However, another participant commented that being able to use self-service to order the robotic devices to accompany him offered a measure of desirable privacy, explaining; "if I had one of those come to order, I wouldn't mind getting it to guide me several times to the toilet, I am embarrassed when I have to ask my companion to keep accompanying me." Asked about whether they would pay for such services, all felt that a reasonable charge would be worth the value of the service.

This account of some of the focus group deliberations has been included here to illustrate our point that, rather than discouraging customers who are older or disabled, catering to their needs can be helpful to develop services for a wide range of users.

We recognise the extreme limitations of this exploratory exercise- no representatives of the cinema industry or manufacturers of SSTs were present. Further work needs to focus on achieving the right ingredients for co-designing sessions where participants include widest possible range of stakeholders. These will take into account considerations about the nature of the roles of the participants, recognising that collecting needs from 'passive informants' (Blomkvist & Holmlid, 2011) is not as productive as engaging them collaboratively, and thus misses the essential nature of service design.

Conclusions and future directions

In the design world, the work on self-services has tended to focus on the individual technologies used, for instance self- service terminals (SSTs) such as ticket vending machines

¹ Amazon Prime Air Indoor <https://www.youtube.com/watch?v=WvOmFu8gQV8>

² NSK develops four-legged robot "guide dog" <http://www.gizmag.com/nsk-four-legged-robot-guide-dog/20559/>

and automated teller machines (ATMs) or applications, such as online banking or travel services.

Speaking of services generally, service designers emphasise that: “a common challenge that all service organisations face is how to create more intimate and responsive relationships with their users and customers” (Parker & Heapy, 2006, p. 15.). Given the case of self-service, where the level of interpersonal service is low, the challenge is how to create such responsiveness when the customer is dealing with a machine or a computer application. This becomes a greater concern, with the increasingly ubiquity of self-services.

Prompted by these realisations, and from our research into the inaccessibility of SSTs for the eAccess + Network project³, we apprehended some deeper implications not being able to use self-service technologies. It is not just an inconvenience, made more acute by the fact that, paradoxically, these services would greatly benefit the people they often leave out, - people whose age or disabilities make it hard for them to be mobile and to access traditional forms of service- if indeed these still exist. More than an inconvenience, the ability to use self-services means far more than enabling access to services and the service-specific benefits they bring; it contributes to vulnerable customers’ quality of life, in the sense of enhancing their self-esteem, their independence and autonomy, and ultimately their ability to participate in society. Looking for answers, we turned to Service Design. Service designers already work under the premises of Service Dominant Logic, understanding that services are co-produced, that value is provided by the customers, who act as co-producers with the service providers in obtaining the desired results, and bringing their resources to the process.

Thus, the purpose of this reflective paper is to point out that the present definition of self-services needs revision, in the light of changing technologies; increasing customer adoption and more ubiquitous deployment. It is no longer adequate to see it as the technologically enhanced touchpoint of a service. Self-services are not simply self-service terminals or online applications whose faults can be fixed by good applications of human computer interaction so that they are accessible and usable by everyone. They are not automated transactions. They now need to be given different considerations to understand how they contribute to overall service design, and how the technology can both empower users to participate in co-creation with providers for the services they value, and in how in doing so, can potentially bring innovative features into self-services, if not new types of service.

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Servitization of Products as an Approach for Design-Driven Innovation

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Abstract

In this paper we present how the meaning of a product can radically be innovated through add-on services and related service support products to the existing product instead of significantly redesigning it. We explore and investigate this assertion with an action-oriented case study using a research through design approach. Our research was done within the Dutch fashion industry together with a fashion label specialized in handmade knitwear. As a result two services, ‘Meet Your Knitter’ and ‘Our Garment’, were designed and added to an exclusive garment line. Early probing indicated an innovation in the meaning of the garments through servitization. In general, we conclude that servitization of products can be a promising approach for design-driven innovation. This is especially interesting for firms that would like to probe and experiment with service design for meaning innovations. However, more research is required to fully understand and utilize the suggested approach.

KEYWORDS: design-driven innovation, handmade fashion industry, servitization of products

Introduction

Background

Design is gaining a more prominent strategic role in today’s economic environments. Companies like Artemide, Nintendo, Apple, Alessi, and so on, all have design at the core of their business. According to Verganti (2009) people do not buy products but meanings. The epistemology of design defines the word as ‘making sense of things’ or one can say that design is about creating meaning (Krippendorff, 1989; Heskett, 2002; Kazmierczak, 2003).

Design-driven innovation

Design-driven innovation (a.k.a. radical innovation of meaning(s)) is an innovation strategy introduced by Verganti in 2009. This strategy is relatively new compared to the two mainstream and dominant innovation strategies of user-driven innovation (a.k.a. market pull innovation) and technology-driven innovation (a.k.a. technology push innovation) (Verganti, 2009). While user-driven innovation usually departs from user/market studies and

technology-driven innovation departs from technological inventions, design-driven innovation departs from the innovator's culture. This strategy is about taking distance from the user/market and sometimes also about the integration of new or existing technology in a new market. This is to avoid incremental change and aims for change that is more radical. Verganti describes this idea well using his framework on which the different strategies are mapped together with a hybrid strategy what he calls "Technology Epiphanies" (see Figure 1).

Since design-driven innovation primarily focuses on innovating the meaning of products, Verganti & Öberg (2013, 87) have provided the following definition for 'product meaning' in their more recent work: "To clarify, when we mention 'product meaning', we relate to the purpose of a product/service as perceived by the user. It is about the purpose for why a product is used, not how it is used (the user interface), nor what the product consists of (its features)". Although Verganti also proposes design-driven innovation for innovating the meaning of services, elaborate examples (in service design literature) remain limited.

We believe that in addition to innovating the meaning of products and services one could also innovate/influence the meaning of products through 'add-on services'. Our viewpoint is inspired from one of the current and more upcoming trends in innovation called 'servitization'.

Servitization of Products

The term 'servitization' was first introduced by Vandermerwe & Rada (1988) and referred to as the increased offering of more complete market packages of customer-focused combinations of products, services, support, self-service and knowledge in order to add value to core corporate offerings. However, according to Morelli (2003) 'servitization' also can be seen as the evolution of product identity based on material content, to a position where the material component is inseparable from the service system.

There are different forms of servitization. Tukker (2004 cited in Baines *et al.*, 2007) proposes categories rating from services with tangible products to products with services as 'add-ons'. Servitization often comes about as a reaction to financial challenges, strategic product differentiation, and (latent) customer demands (Mathieu, 2001; Oliva & Kallenberg, 2003; Gebauer *et al.*, 2006).

Objective

We are interested in the servitization stance of Morelli (2003), which is close to 'products with services as an add-on' category of Tukker (2004). Hence, we are interested in exploring how the meaning of an existing product can be innovated through servitization; i.e. through addition of one or more services and service support products designed around the existing product instead of significantly redesigning that product. In short, whether and how servitization of products can be used as an approach for design-driven innovation.

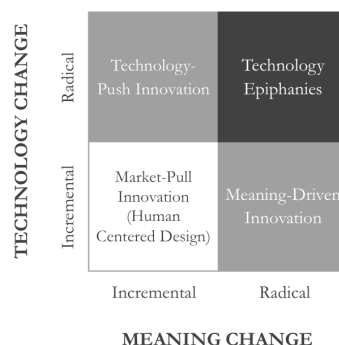


Figure 1. The two innovation dimensions and four related innovation types, adopted from Norman & Verganti (2014, 89).

Structure of this paper

This paper is structured in six sections. We started with an introduction in ‘Section 1’. Next we continue by explaining our research methodology, context, and design in ‘Section 2’. Then we present the results of our case study in ‘Section 3’. From there we first reflect on the case study in ‘Section 4’ and later derive conclusions in ‘Section 5’. Finally, in ‘Section 6’, we define our future work.

Research methodology, context, and design

Research approach

We have performed a case study (Yin, 1994) based on a ‘research through design’ approach (Frayling, 1993 cited in Koskinen *et al.*, 2011). In this approach, design action and reflection on action are considered creators of knowledge, and the design outcome is considered the physical proof of the knowledge generated (Schön, 1983).

Research context

The context for the research was a ten-month Master graduation project of the second author. With nine months in The Netherlands and one month in Ecuador, this project was a collaboration between the Industrial Design Department of Eindhoven University of Technology and Inti Knitwear (as client). Inti Knitwear is a Dutch fashion label established in 1993. This SME produces handmade knitwear in Ecuador and Peru for customers in west and East Asia. Nowadays Inti Knitwear has about one hundred and twenty five stores spread over The Netherlands, Belgium, Germany, France, Italy, Denmark, Japan, and Mongolia.

Case study setup

This Master graduation project started with a fascination for addressing the ‘alienation of products’ as a societal challenge (Eriksen, 2010; Walker, 2013). With this we mean the competition of the postmodern worldview in which a product has become another abstract hyper commodity in a global system with the traditional worldview, where products had deep and local meanings (Negus, 2002). In short, the design brief was to innovate the meaning of handmade knitwear as a product, in such a way to foster a (close) relationship between the producer and consumer. The case study was performed in three parts: (1) It started with semi-structured interviews with the founders of Inti Knitwear; (2) From there five Inti Knitwear garments (an exclusive line) were chosen for servitization where two services were designed; (3) In the end, two probes were designed and executed to sense and measure the meaning innovation based on servitization of the selected products, the exclusive line. In what follows, we explain each part in more detail:

(1) Semi-structured interviews

Early in the project, a set of questions was created and a semi-structured interview was performed to explore the meaning of Inti Knitwear garments. The following topics were embedded: mission statement, establishment, market size, demographic of employees, hierarchies, challenges, changes, and vision.

(2) Servitization of products

To address the societal challenge explained above, a design brief was created together with the client. The knitwear, currently an alienated product, was used as a starting point for design-driven innovation without product redesign. The intervention for addressing the societal challenge was framed as designing add-on services for handmade knitwear that could contribute to the awareness of deeper meanings of this product.

(3) Probing

Two probes were designed and executed in order to sense and measure whether any meaning innovation took place; if so, also to see if the meaning innovation was indeed a result of servitization of products. Probes are small packages that can include artifacts (like a postcard, map, camera, or diary) along with evocative tasks, which are given to people by designers to allow them to record specific events, feelings or interactions. The aim is to elicit responses from people, in order to understand their culture, thoughts, and values better (Gaver *et al.*, 1999; Matelmäki, 2006). The first probe was to sense the meaning of purchased Inti Knitwear garments before servitization. The second probe was to sense the meaning of the selected Inti Knitwear garments after their servitization. More information on how we used probing is to be found in 'Results - Probing outcomes'.

Results

Inti Knitwear and the meaning of its garments

The semi-structured interviews were performed with the two founders of Inti Knitwear. Inti Knitwear's headquarters was visited in the Dutch city 's-Hertogenbosch. The interviews were conducted in Dutch, audiotaped, and varied in length from 30-45 minutes. Later the recordings were transcribed verbatim and analysed starting with coding words and collapsing them into conceptual categories. From the semi-structured interviews we learned that the meaning of garments depend upon the organization structure of Inti Knitwear. What follows next is a summary of the results starting with Inti Knitwear's organization vision, continued by the organization structure, towards the meaning of Inti Knitwear garments.

Garments of Inti Knitwear are handmade and thus entirely unique (handmade garments are never exactly the same). The main value of Inti Knitwear is to preserve handmade production processes. They believe that best things in life are still made by hand.

Like most profit organizations, Inti Knitwear is structured in a pyramidal form. At the top there are two founders, one that takes care of Inti Knitwear's production part in Ecuador, while the other is responsible for the consumption part, which is worldwide. Descending in power, there are a series of managers on each side; Followed by the Inti Knitwear designers and knitters on the production side and retail personnel on the consumption side. Due to this structure there is a gap between production and consumption. This in the sense that only the founders have an overview of the interactions among the many conflicting agendas of those involved at the organization. While the vision of Inti Knitwear focuses on the relation of actors with the deep meaning of products, the current organization structure of the label, like many other organizations, is a structure that isolates actors from the deep meaning of products.

Since the founders seem to have most awareness and access to Inti Knitwear's production and consumption process, they were the ones that were asked to describe the (deep) meaning of Inti Knitwear garments (Fallan, 2008). This meaning can be summarized as 'a sophisticated handmade garment that is entirely unique in fit, colour, material, and comfort'.

Servitization of the product

The servitization was based upon the designer's (second author of this paper) vision on the case described in 'Research methodology, context, and design - Case study setup'; enabling customers to interpret a more holistic and therefore a deeper meaning of Inti Knitwear garments. In order to enable such holistic interpretation a communication channel was created between consumers and producers. Therefore, engaging these two actors in a

meaningful dialogue was the purpose of the servitization. In specific, for the customers this entailed closer awareness of a garment's origin and production process, but also the possibility of personification of wearable garments through a subscription to a specific producer (in this case a knitter). For producers this was to provide awareness on a garment's destination and this way a meaningful increase of commitment in production. In the scope of this paper we only focus on the consumer interpretation of Inti Knitwear garments.

A total of two services were designed for an exclusive line of Inti Knitwear garments: (1) 'Meet Your Knitter' service, and (2) the 'Our Garment' service. An app called the 'Intimate App' was developed through which these two services were provided to the Inti Knitwear customer.

Service 1: Meet Your Knitter

'Meet Your Knitter' service enables Inti Knitwear customers to inquire information (the people, the story, and the process) behind Inti Knitwear produced garments. This can be done by scanning a garment's tag using the Intimate App. The app then downloads and displays one or more movies related to that unique garment and its production.

Service 2: Our Garment

'Our Garment' is a service for Inti Knitwear customers who have purchased a garment and used the 'Meet Your Knitter' service. The 'Our Garment' service only unlocks after using the 'Meet Your Knitter' service. The 'Our Garment' as a service opens up a communication channel between the Inti Knitwear customer and knitter. Using this service, customers can send photos to knitters to thank them, communicate how they prefer to wear a garment, and this way provide them with a source of inspiration. Later, this information is used by knitters to design and propose knitwear targeted for a specific customer in such a way that the garments resonate with their style. Knitters can propose their designs by knitting and sending sample garments to the specific customer through Inti Knitwear's sales force.

Probing outcomes

In this sub-section we explain the process and outcomes of two probes introduced earlier in 'Research methodology, context, and design - Case study setup - (3) probing':

Probe 1: Initial meaning of Inti Knitwear garments

Probe 1 was prepared in three days. The package consisted of: a letter containing the probe assignment, a pack of Post-Its, and some pencils. In total two participants were recruited to take part of the first probing experiment. Since Inti Knitwear is a female fashion label, these were both female: Anouk aged 23 and Bertie aged 53. Anouk and Bertie both received a probing package and were asked to perform the assignments and return the package the next day.

Within the probing assignment, the participants were asked to select their favourite purchased Inti Knitwear garment. Next, they were asked to wear their favourite Inti Knitwear garment and describe what the garment means to them. This was done using Post-Its on which keywords and explanations/stories were written and later returned with the probe package to the researchers. In general, the participants were made sure that nothing they would say or do is wrong. This was done on purpose to allow self-expression and to capture the deep meaning of the garments.

The participants came up with keywords and a corresponding explanation/story to describe the meaning of their favourite purchased Inti Knitwear garment. Anouk chose a scarf and Bertie chose a blanket. Bertie for example, described her blanket using the following keywords: 'support, adventure, warmth, security, magic, and power'. For the keyword 'support', Bertie provided the following story:

Bertie (probe 1): "When I am lonely at home and feel sad or anxious, then the wool of this blanket can give me the warmth of a real person."

The data acquired was multi-faceted and multi-layered; the inquired meanings were both personal and general or in other words subjective and objective. Figure 2 gives an impression of the conceptual meaning categories created from the inquired meanings. The map was also used to define the relation between various categories. Analysis of the map from the perspective of the two participants enabled us to summarize the meaning of Inti Knitwear garments as: 'a functional garment made of high quality materials, that is aesthetically nice, and has this home-sweet-home feeling'.

Probe 2: Meaning of servitized Inti Knitwear garments

After probe 1, a second probe was developed and deployed in ten weeks (April - May 2013). The probe was designed in The Netherlands within a time frame of two weeks. Then five weeks were spent in Ecuador to execute the probe in the context of production. For the context of production the package consisted of: a letter containing the probe assignment and a couple of inspirational photos from the customer. The assignment was to design and knit a sample garment and later knitting a 1:1 sale garment. For the context of consumption the package consisted of: a letter containing the probe assignment, the Intimate App, the sample garments, and later a 1:1 scale garment with a tag that could be scanned to see a video of the producer (see Figure 3).

Two full cycle experiments were performed. Each experiment was performed with a different knitter (producer) and different end-user (customer). In total four participants took part in probe 2, i.e. two knitters in Ecuador, Mercedes and Narcicia, and two customers, Marieke and Laura, in The Netherlands.

The chronological procedure of the probe can be summarized as following: The probe started with the two customers in The Netherlands. The first step was to interact with the early version of the Intimate app via their computers through which they could meet the knitters and send them inspirational photos through the device. After this was done, the knitters could receive printed photos as inspiration material for knitting and in this way indirectly meet the customers. Next, each knitter created a knitwear garment sample that was sent to the customers. The idea behind the sample garment was proposing a garment concept to the customers that they could order a 1:1 scale version of. After viewing the sample garment the customers could send their written feedback to the knitters. This feedback was translated from Dutch to Spanish and communicated to the knitters by the local manager. Based on this feedback the knitters created a 1:1 scale garment.



Figure 2. Anouk wearing her scarf, Bertie holding her blanket (left); Map with the conceptual meaning categories of Inti Knitwear garments owned by two loyal customers (right).



Figure 3. Mercedes (knitter) and Marieke (customer) (left); A garment tag and the Intimate App displaying a 'Meet Your Knitter' video (right).

These videos were uploaded on a server and could later be viewed by the customers by scanning the garment's tag. The probe ended with customers receiving the 1:1 scale garments that they had ordered, and scanning the tags to see 'Meet Your Knitter' video(s). The latter part of the probe was video recorded for this research.

Like the previous probe, the customers were asked to wear the garment with this time the addition of scanning the garment tag using the Intimate App and watching 'Meet Your Knitter' video. In other words, making use of 'Meet Your Knitter Service' and describing what that specific Inti Knitwear garment means to them. The participants described the meaning of the Inti Knitwear garments after servitization as following:

Marieke (about the 1:1 scale garment, Figure 3): "Due to this type of information, the garment increases in value. It is no longer just a garment, but a garment with an underlying thought. A true challenge, a relaxed working environment, a 43 years old Ecuadorian lady. The life of Mercedes. A garment that I will give to my daughter, and she to her daughter, and so on. A forever garment".

Laura (about the 1:1 scale garment): "Narcicia explains who she is, what she does and why. I believe it is very special that somebody is creating something for you right there right now. Extraordinary! ... Yes, this experience adds something. It defines a setting, a true understanding. You do no longer take the 'object' for granted. And due to I expect I will never throw away this garment. It simply would make me feel guilty".

As can be seen from the participating consumer descriptions transcriptions, we can summarize the meaning of the servitized Inti Knitwear garments now as: 'a personal and unique garment that tells a story, is thought provoking, and inspires'.

Reflection and discussion

Innovation of meaning?

The probing results indicate a meaning innovation in Inti Knitwear garments. Moreover, the meaning of the initial Inti Knitwear garments differs to that of the Inti Knitwear garments that are servitized with 'Meet Your Knitter' and 'Our Garment' services. Namely, 'a functional garment made of high quality materials, that is aesthetically nice, and has this home-sweet-home feeling' vs. 'a personal and unique garment that tells a story, is thought provoking, and inspires'.

Design-driven innovation based on servitization of products?

In probe 2, the meaning described by customers for the Inti Knitwear garments seems to be an implication of servitization. For example, Marieke perceives the information provided through the two services as an increase of the value of the garment, i.e. the garment itself as

not just a garment but also one with an underlying thought. Servitization of products seems to be a promising approach for design-driven innovation but could also have some drawbacks. “Table 1” provides an overview of the pros and cons that servitization of products could have for a firm and its producers and customers. Our reflection is on two levels and more an exploration rather than validation: (1) Specifically on the two services created in our case study; and (2) A more generic reflection.

<i>Pros</i>	<i>Cons</i>	<i>Other</i>
<i>Specific reflection</i>		
<ul style="list-style-type: none"> » The two services could contribute to the sustainability of garments due to their personification and this way increase their value. People take better care of more meaningful/valuable products and will not easily replace or dispose them. » It is expected that the two services generate a garment quality increase since the knitters receive more than just monetary value for the work that they do. 	<ul style="list-style-type: none"> » Services that create transparency, can be seen as a threat to firms that do not have a strictly controlled ethical/sustainable production processes and infrastructure. 	<ul style="list-style-type: none"> » One can wonder to what extend services designed based on western ideology would work for non-western parts of the world? Something that requires further investigation.
<i>Generic reflection</i>		
<ul style="list-style-type: none"> » New services (new meanings in offerings and brand identity) could result in the generation of new markets or differentiation from competitors leading to increasing market share. » Firms can keep a big part of their established, already invested in, infrastructure. » New services could add a new meaning layer on products. Hence, a product could receive different meanings through services for different target segments and this way is attractive for multiple target segments. » Services add touch points for meaning inquiry from customers and producers, which can be valuable for business development. 	<ul style="list-style-type: none"> » New services might increase the product price. The customers that do not appreciate the services might not be happy with this. This means if the services do not match all customers some customers might be lost due to price increase for not appreciated services. 	<ul style="list-style-type: none"> » Because of the reflections explained in the cons column, the servitization was only proposed for a part of Inti Knitwear’s garment collection, not the entire collection. This can both limit or enable business possibilities.

Table 1. Pros and cons of servitization of products for a firm and its producers and customers (our specific and generic reflections).

5. Conclusions

We have explained and through a practical case study on fashion shown how servitization of products can be used as an approach for design-driven innovation. Using probes we were able to illustrate that the meaning of Inti Knitwear garments was changed through their servitization; i.e. due to adding services to garments, they were interpreted differently by customers.

The case study can be seen as a promising early Meta level investigation of servitization of products for design-driven innovation. However, understanding the full potential of servitization of products for radical innovation of their meaning requires probing with more participants and additional case studies. In this case, our research is limited to two probes with six participants, which focused more on initial experimenting and explaining a novel approach for servitization within the domain of design-driven innovation.

With this work we hope to inspire strategic and innovation designers and researchers to consider servitization for design-driven innovation (expand service design to other fields) and perform more research on this far from fully utilized, yet promising approach.

6. Future work

We are currently writing another paper, which has a more Micro level focus on the case; I.e. service design based on design-driven innovation. Furthermore, we are expanding our number of case studies and contexts (e.g. to mobility and care). Our intention is to eventually experiment with servitization for design-driven innovation on system level. In specific, we are interested in radical innovation of meaning(s) in product service systems. Last but not least, the second author is currently taking this project to the next level through piloting.

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Design Legacies: Why service designers are not able to embed design in the organization

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Abstract

Much talk about service design has focused on how to bring design practices, design thinking and design methods into an organization in order to transform or change the way it is going about business. There is only one thing that researchers and practitioners have overlooked: Design principles, methods and practices are already deeply embedded in organizations. That is, in fact, the real problem: Organizations are full of design legacies, however flawed and poorly suited. If service designers want to effect real change in real organizations, they have to be able to articulate these organizational design practices. This paper explains the concept of design legacies and describes three elements of organizational design legacies: organizational purpose, organizational design approaches and organizational design practices. Using a matrix developed around designing for, with and by, the paper explains how we can make sense of existing organizational design practices.

KEYWORDS: organizational design practices, design legacies, public organizations, service design, organizational change

Introduction: Design Legacies & Organizations

When it comes to design in the organization, there are many misconceptions. Numerous people, managers and designers alike, believe that they can introduce and bring design practices into an organization. Working on this assumption, they focus very much on how to embed design into organizations. Service designers are no exception. There is only one thing that researchers and practitioners have overlooked: Design principles, methods and practices are already deeply embedded in organizations. That is, in fact, the real problem: Every organization develops and establishes certain kinds of design practices, design concepts and design approaches over time. This means that at best, we can introduce new design practices and different ways to think of design into organizations. Design practices are embedded in organizations for obvious reasons: Any organization, no matter if it is public or private, has to develop and deliver some kinds of product(s) or service(s) in order to exist. The forms

these products and services may take vary widely. Some organization may produce and deliver information, another consumer goods. The point is that organizations are created, set up, run and maintained by people in order to provide something for other people. In order to do so, they have to conceive of products and services, plan them, develop them, realize them and deliver them. This also means that organizations are full of design legacies, however flawed and poorly suited.

One of the great current debates in design is its role in society. This conversation has a long history but it has been reinvigorated by public servants in government institutions on national, regional and local levels who have begun to look to design as a path to arrive at social innovation, new and improved services for citizens and are therefore challenged to reflect on their own organizational design practices and concepts. Examples on the national level include the US Office of Personnel Management or the Singapore Center for Design Excellence. On the local level, Denmark is perhaps spearheading this development with municipal design offices within the city of Odense and the City of Kolding. At the same time, many professional designers are taking up opportunities to improve the experiences of everyday people with public organizations. They are working on healthcare projects, on social welfare projects on the community level. This means that designers, too, have to come to terms with their own design concepts and practices as well as those they find in place in the organizations and institutions they work with. In short, they have to come to terms with organizational and professional design legacies. While we can find research into design legacies of design movements like Art Deco, the Bauhaus, the HfG Ulm or individual designers, design legacies in the public sector have received little attention.

The idea of a legacy is one of heritage, of being passed down something from someone, often from one generation to another. Public organizations in their own right might be described as legacies, as they are taken on from one generation to another. However, we can also think of legacies of practices, and in the context of the public sector as legacies of designing. A design legacy in this context refers to a practice that is being handed down, from one employee to another, from one management team to another, from one CEO to another. This practice is often shaped or influenced by specific management approaches like, for example, Top Quality Management (TQM), or New Public Management (NPM). Thinking of organizations as places of design legacies with embedded design practices enables us to overcome some of the key obstacles to organizational change by design: For example, it lowers the resistance to design by acknowledging and embracing on-going design efforts by an organization. Instead of coming in to the organization to right the wrong, design connects to what is already happening in the organization and merely offers a way to inquire into how its current design practices, products and services aid the organization in achieving its purpose or vision and how this might be improved on. It re-positions design from a foreign, alien element or factor that needs to be injected into the organization, to one that is essential and real within the organization. Furthermore, thinking of organizations with different design legacies at work encourages us to respect the experiences, skills and knowledge of silent designers (Gorb & Dumas, 1987) and to work with them together on improving existing design practices.

Understanding and acknowledging design legacies therefore opens the path for co-designing and for co-creation with the organizational system and its members. It also aids design consultants and other external design experts to scope their expectations on what they can change and what they are prepared and willing to engage with: the product in development or the design practices and methods an organization knows and applies in its task to develop and deliver products and services.

Design Legacies & Service Design

The field of service design has moved significantly since the mid 1980s. Service design originally formed around transactional service experiences (Bitner et al., 1990), which researchers described accordingly as ‘encounters’ or ‘touch points’ (cf. Shostack, 1984; 1985). Transactional service experiences cannot meet the criteria for holistic and integrative design approaches pursued by human-centered design. One of the reasons is that the design of transactional service experiences depends on capturing an individual person’s market-relevant characteristics. A person is considered only in her capacity of being a ‘customer’ or ‘user’ of a specific service. The objective of the service is to seduce or otherwise entice that person to enter into this transaction. The transactional service model has its roots in the industrial production of consumer goods. Service here emerged as added value to consumer goods. In other words, services have been added on to already existing tangible products in order to maximize sales but also to tie existing customers to a specific product. The purpose of these services was to strengthen customer-loyalty and to allow businesses to develop on-going relationships with already existing customers who would “come back for more” as a result. This transactional view of service design is best illustrated by the concept of ‘servuction’, a term that combines the two words service and production. Servuction has been introduced by Eiglier & Langeard (1987) and refers “to the production and delivery of services” (Gummesson, 1990). The concept of service more recently moved from actor network theories to human-centered design (Meroni & Sangiorgi, 2011). Service design is now recognized to be inseparable from organizational change (Junginger & Sangiorgi, 2009, 2011; Sangiorgi, 2011). As a result, service designers have to find ways into organizational systems to create pathways into organizational life for people (Buchanan, 2004). More than ever, service designers find themselves working in environments where specific design legacies seemingly suffocate any attempt at innovation and change.

One way to understand design legacies in the public sector is to inquire into organizational design practices. What are they? How can we work with them? How can we discuss them? What do they achieve (and what not)? How can we change them? When we acknowledge existing organizational design practices, we do not have to justify the role and value of design to the organization. In doing so, we begin to embrace the many silent designers that are present in any organization. Instead of confronting people with a design agenda, we can map their very own work and engage them in the redesign of these very practices. If service designers want to effect real change in real organizations, they have to be able to articulate these organizational design practices. There are then at least two kinds of design legacies we can find in organizations: A legacy that shapes how the organization understands its own role as designing and a legacy of what kinds of organizational design practices an organization promotes and relies on. I have developed an organizational engagement matrix (Junginger, forthcoming) that I will use here to argue for the existence of organizational design legacies and organizational design practices service designers encounter in their work. This work is part of my wider study of public sector design. For this reason, the references all apply to public organizations. However, one can easily exchange ‘citizens’ for ‘customers’ for example, to find that the similarities of design legacies and design practices in the public sector and the private sector are greater than their differences.

Elements of Organizational Design Legacies

What are the elements of an organizational design legacy? There are three elements that have a tradition or a history within organizations. These are organizational design practices, organizational design approaches, and organizational purpose. In this paper, I will elaborate on organizational design practices. However, we shall also briefly cover organizational purpose and organizational design approaches, to which I dedicate more attention in other places.

Organizational Purpose

Few aspects shape an organization as much as what its members and management think its purpose is. It is equally important to understand what people outside of the organization think the organization's purpose is. Organizational purpose is an element in an organization's design legacy because it encourages certain actions and discourages others. Ideas that seem too far away from the organization's purpose will be dismissed. Certain products and services will not be developed because they are identified as misfits with the organizational purpose.

Organizational Design Approaches

We can think of an organizational design approach as one that is, for example, human-centered, process-oriented, problem-solving or cost-saving. In a human-centered design approach, the core focus on the organization rests on identifying and developing products and services that are meaningful to people and empower them in one way or another. In a process-oriented design approach, products and services first and foremost fit into existing structures and processes of the organization. The problem-solving approach is often marked by top-down, linear decision-making with a tendency to fragment design activities (Junginger forthcoming) whereas a cost-saving design approach is strictly guided by identifying and realizing cost reducing opportunities. Of course, organizations may also mix any of these design approaches and combine cost-saving with problem-solving, for example.

Organizational Design Practices

Organizational design practices are part of the design legacy we find within an organization. It is therefore important to identify and articulate the kinds of design practices we find in organizations to understand with what kind of design legacy we are dealing with and to develop new design capabilities. In public organizations, we tend to find three basic groups of people who may get involved and participate in product development. There are the internal *members of an organization*. Members of an organization may be managers, supervisors, front desk, administrative staff or all of the above. They may or may not be aware of their design activities and may therefore act as "silent designers." Steeped in and often hampered by organizational processes, structures and procedures organizational members can easily overlook their own role in giving shape and form to products and services. *External experts* form a second, much larger and much more diverse group. External experts who get involved in the design of public services can range from a professional consultant to an academic researcher but would also describe an organization's external stakeholders. For government agencies, the needs, demands, and pressures of external stakeholders, such as professional trade groups, lobbyists, unions or other parts of government can pose enormous obstacles to any change or transformation. External participants tend to be more aware of their role as designers and shapers because they either make a living of it (as design and management consultants do), or they have a vested interest in the design outcome (as do lobbyists, unions, or industry associations). We can therefore refer to external experts more generally as external design experts. The third group of people that factors into

organizational design practices are the people an organization either aims to provide for or has a mandate to serve. In business organizations, the term *customer* is a catch all term for this group of people. In public organizations, it is the *ordinary* or *everyday citizen* who may have a role in organizational design practices. Ordinary citizens are individuals who are already engaging with an organization or who the organization would like to see engage with its services. How they are getting engaged in organizational design practices depends on the ability and willingness of an organization to embrace participatory design approaches.

Designing to, for, with and by in public organizations

Who gets involved in the design of a product is indicative of the potential of an organizational design practice to promote or stifle organizational changes. It seems obvious that when the role of organizational members is minimized or even neglected, there are few opportunities to share knowledge and insights generated through the design activities with the organization. How then is the organization supposed to change? Yet, when we look at the range of organizational design practices, we do find many forms that create artificial barriers to collaborative and participatory practices with members of an organization. The reasons are manifold but many of them have their roots in what people who represent these three groups, think of their own role and that of people part in the other groups. In essence, they can each assume one of three roles: they can design for, design with or they can have the design being done by one of these three groups. Organizational design practices follow directly from an organization's view of designing as an activity done by a group to or for people, done by a group with a group of people, or done by a group of people. When organizational changes are intended to result from a design effort, members of the organization have to be conscious of their roles in the design process.

Designing for or designing on behalf of public organizations

The distinctions between design being done to someone (designing for), design being done with (designing with) and design being done by (designing by) someone have been pointed out by Suri Fulton's keynote for the *Include Design Conference 2007* (Fulton, 2007). Fulton observed that "people are not passive consumers but active designers of their own world- and always have been." Charles Leadbeater (2009) picked up on these distinctions in (2009). When one group is designing for one or both of the other groups, when the one group is expected to deliver something to or for another group, the opportunities for collaboration, co-development or co-design are very limited. Leadbeater is critical of a culture that seeks to deliver goods and services to and for people:

"Often in the name of doing things for people traditional, hierarchical organisations end up doing things to people." ... "Social services departments were created to help people in need. Yet those on the receiving end of services often complain they feel they are being done to, processed by a bureaucratic machine" (Leadbeater 2009: p. 1).

Leadbeater's 'design for' can also be understood as 'designing on behalf of' someone. This has implications for our understanding of organizational design practices. When internal organizational members design *on behalf of* citizens, they position themselves as the design experts in a design activity. They are the ones who know what needs to be designed and who know how to do this. The need to engage with either external design experts or everyday citizens is on a 'need-to-know' basis. For this reason, designing for reflects a rather

paternalistic approach to product development, one that insists that ‘we know best’ and that pushes products out of the organization and imposes them onto people.

If we stay with the idea of ‘designing on behalf of someone’, we can also think of the second group, the external design experts to take on a leading role in design in the public organization. For example, an organization can rely on external experts to design *for* or *on behalf of* the organization and *on behalf of* citizens. In this case, the challenge to create participatory opportunities rests with the external design experts. It is up to them to decide how to bring in organizational members and everyday citizens into the design process. The direction of product development remains one-directional and therefore less likely to effect any change in an organization, which either is at the receiving end or is imposing its own vision.

But cannot everyday citizens also design on behalf of an organization or on behalf of external design experts? This is a possibility that is increasingly being explored in a range of community projects in the UK. The Big Society was not least built around the idea that everyday citizens know better what and how public services should be provided.

Exploring designing with public organizations

Members of an organization can also work with design experts, design experts can work with citizens and all three groups can engage with each other during a design activity. For Charles Leadbeater, the *logic of with* implies the following:

“A with approach to any issue or challenge has to be co-produced and negotiated. That means it cannot be planned out in detail in advance. With style campaigns and organisations have to emerge and develop.” (Leadbeater 2009: p. 5)

In Leadbeater’s view, ‘the logic of with’ allows for the co-creation of knowledge and learning from many sources. An organizational design practice that brings in external experts and/or everyday citizens should therefore have a better chance of achieving and realizing organizational changes.

If we apply the idea of designing for, with and by to the core problem of a public organization to design products and services that are relevant for citizens, we end up with a matrix of nine organizational design practices that I show in *Table 1*.

	Designing for Citizens	Designing with Citizens	Designing by Citizens
Designing for Organizations	Design experts design for organizational staff and for citizens	Design experts design with citizens for organizational staff	Citizens design for organizational staff
Designing with Organizations	Design experts design with organizational staff for citizens	Design experts design with organizational staff and with citizens	Citizens design with organizational staff
Designing by Organizations	Organizational staff designs for citizens	Organizational staff co-designs with citizens	Organizational staff and citizens co-create and 'co-produce' (i.e., operate the new)

Table 1: MATRIX OF ORGANIZATIONAL DESIGN PRACTICES. Organizational design practices are influenced by what the organization perceives to be its own design capability and by whom the organization views to hold the necessary or sufficient design expertise. Organizational design practices are part of the design legacy we find in organizations.

In simple terms, the left column of the matrix talks about the involvement and responsibility an organization is willing to take on in a design effort: an organization can leave the design to external design experts (designing for organizations); it can design with external design experts (designing with organizations) or it can take on all of the design tasks themselves. In a similar fashion, we can talk about the involvement and responsibilities citizens have in a design effort: citizens have no responsibility or involvement when they are being designed for; but they may also be included somewhat or even given the responsibility to design for themselves. There is one important aspect that we should not lose focus on: We are talking here about organizational design practices. Thus the agency of involving citizens rests in the organization, not in the citizen. It is the organization, especially the public organization that decides what participation means and what forms it can take. But in the public sector, participation often refers merely to participation in the decision-making process, not in the actual design process that precedes the decision-making process.

The *Ladder of Participation* by Sherry Arnstein (1969), for example, is central to the Berlin Senate's *Handbuch zur Partizipation* (Handbook on Participation). When we take a closer look, we find that the Ladder of Participation literally refers to levels of participation as 'not informed', 'being informed', 'being consulted', 'co-operation' and citizen referendums. Thus we need to be quite nuanced about our ideas of "designing with" in the public sector.

Nonetheless, we can immediately see from the matrix how each different design practice assigns the responsibility of designing either to the organization, an external design expert or the citizen. Each organizational design practice makes a statement about who is considered to be capable of designing, and who is thought to have design expertise. For example, design

experts are given the largest authority and responsibility when they are hired to design on behalf of an organization to design for citizens. Organizational staff has most influence on the design outcome when they are designing themselves for citizens. When citizens design together with organizational staff, we see the biggest indication of a shared responsibility. The matrix also sheds light on the role and place of design experts—especially service designers—in a particular design approach. Using this matrix, we can begin to make sense of organizational design practices and begin to talk about organizational design legacies.

Summary & Conclusion

I have provocatively titled this paper why “service designers cannot embed design in the organization” because we have been so busy talking up the need to bring design practices, design thinking and design methods into organizations that we have failed to see the design principles, methods and practices organizations work with already. I have introduced the idea that organizations, in fact, are full of design legacies. I have identified three elements of organizational design legacies—organizational purpose, organizational design approaches and organizational design practices—and explained organizational design practices in detail. I have developed the idea of organizational design legacies with a matrix that results when we think of organizations as leaving the design to external design experts (designing for organizations); organizations as designing with external design experts (designing with organizations); or organizations as taking on all of the design tasks by themselves and align these concepts with the ideas of designing for citizens, designing with citizens or designing by citizens. The matrix demonstrates that design is already embedded in organizations and that we can distinguish between different organizational design practices. At this point, I have shared this matrix with a government policy-planning department; several public management scholars; and several other practitioners and scholars working in and around public sector innovation. In these contexts, the matrix became a tool for reflection and understanding of current design practices. In this sense, the matrix supports efforts to make visible an organization’s very own design legacy.

Though I am not sure if we need to delve into the last corner of design legacies to grasp their relevance for design research and design practice, the concept of design legacies deserves our attention. Clearly, more research needs to be done on the different elements. I have pursued some of this work by looking into design perspectives and design approaches in the public sector. For most people within organizations and for the majority of external design experts, however, it may suffice to be aware that such design legacies exist; that there are design practices that are being applied and that organizations already have an approach to design products and services. By merely stating this fact, we enter at a very different level in the organization and open up new ways to collaborate and engage with organizational staff. Instead of having to convince managers, employees and the rest of the organization that design is relevant, the point is already made and we can begin to focus on changing design practices that do not lead the organization to the desired outcomes.

Here, Service Design has a key role that is not well understood yet. As many organizations are turning to service designers and to methods of service design, they are demonstrating a willingness—at times even an eagerness—to pick up new design practices. The core argument of this paper is that both the organization and any involved designer will be more successful in doing so when they are prepared to recognize and deal with existing organizational design legacies.

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Passing on, handing over, letting go – the passage of embodied design methods for disaster preparedness

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Abstract

Natural disasters are predicted to become more frequent and severe. Building on Sangiorgi's (2011) principles for transformative practices in service design, the paper discusses a case study of working with communities and emergency agencies in Australia over a five-year period and the process of designing their adaptive capacities for collective and continuous development in strengthening resilience. When transition of intention and ownership is critical in sustaining any community work, what can be enabled in others and 'let go' in the process of doing design? By following the passage of methods through people's practices, the paper tells the story of how the methods were adapted, embedded and enacted through those who were part of the fabric of change. What were being 'designed' were not just a service performance but people's adaptive capacity for survival as well as the practices of those who attempted to enable transformation.

Keywords: Transformative services, community, natural disasters, participatory design

Introduction

Discourses on transformative and participatory practices bring much-needed human-centred, social questions into service design. These complex and challenging dimensions are often touched upon but not explored in depth in most service design case studies. This may be because majority of service design case studies, which are often based on commercial entities, tends to emphasise service delivery that value efficiency, performance and return on investment. For example, key textbooks by Polaine and colleagues (2013) and Stickdorn & Schneider (2010) provide exemplar guidelines of designing services for companies. The discourse recognises the importance of human-centred concerns such as values, experiences and relationships but other facets of sociality are still emerging, especially when designing public services. In this landscape, research in transformation design (Burns et al, 2006; Sangiorgi, 2011), designing for services (Meroni & Sangiorgi, 2011) and Manzini's

scholarship on designing for social innovation (2010) provides a significant contribution by broadening service design's focus beyond better service delivery and experiences, to also consider how to develop peoples' capacities, assisting them to become change-agents in the continuous making of their own futures. This broadening is a significant human-centred shift, requiring different focus and research questions on how people coalesce action and learn and transform reflexively, which this paper explores in detail. As critiqued by Sangiorgi (2011), service design projects that only improve service interactions, touch-points or redefine service values do not have a transformational impact.

As a way to consolidate transformative practices in design that enables public service reform and wellbeing, Sangiorgi (2011) highlights seven key principles drawn from organisational development and community action theory. Sangiorgi represents these in a cyclical and sequential manner beginning with 1) *Active Citizens* and 2) *Intervention at Community Scale*, then 3) *Building Capacities and Project Partnerships*; 4) *Redistributing Power*; 5) *Building Infrastructures and Enabling Platforms*; 6) *Enhancing Imagination and Hope*; 7) *Evaluating Success and Impact*. This paper uses these principles as a reflective guide to weave the 'messy' reality and challenges of integrating theory and practice and highlight how certain principles (indicated in italics throughout the paper) are important to address, critique or build upon at salient junctures of the journey. When designing with communities, commitments are made to participants rather than follow a theoretical outline. Even aiming for the first stage of the transformative principle, *Active Citizens*, can be problematic when fear, confusion and disempowerment are prevalent within a community as encountered in this case study; requiring a reflexive and dexterous approach. This paper contribute praxis knowledge by facing the challenges when shifting from discrete, bounded contexts of workplaces mostly witnessed in service design, to structurally and hierarchically freer social relations where there is a greater degree of unpredictability.

If change is core to any design activity, it is necessary to examine legacy issues to build and augment skills and capacity for on-going change so that people and communities can keep adapting and improving themselves (Burns et al, 2006). This autonomy is a core objective of transformation design, but is also highly relevant to service design when it is more desirable to avert the need to use some services, like hospitals through preventative healthcare, prisons by deterring crime and emergency services by mitigating disasters. Longitudinal studies are rare in service design research and little is yet known about how a service delivery evolves once the designer researcher had initiated or implemented it. In this paper, I describe a five-year journey by following the methods that were designed to strengthen resilience in disasters. Most importantly, rather than assigning agency to tools and methods alone, which tends to happen in service design (Akama & Prendiville, 2013), I tell the story of how methods were passed on and handed over by being embedded within people's practices and every-day contexts to become a 'living change process' (Meroni & Sangiorgi, 2011) within communities. In this story, what was being 'designed' was not just a service delivery, but people's transformative capacity for survival and the practices of those who attempted to assist it.

Designing is action research – it changes the context, the people and the design practitioner through designing (Light & Akama, 2012). I have written this paper reflexively using the first person narrative and quote the practitioners who have reflected on their own experiences to indicate the changes they observed. The paper culminates in a reflexive discussion of 'letting go' one's expertise and expectation. Letting this go can catalyse a questioning of our own roles, values, perceptions and attitudes, to embark on a practice of our own journey of transformation before we can enable others in their transformative process. This concluding

discussion is a key contribution to designing transformative practices. Self-awareness, critique and reflexivity are not included in the seven guiding principles but I believe these qualities are significant for change and learning, and offer complexity and richness in human-centred research as we seek to develop our epistemologies of service design research.

The disaster context: Building community resilience for fire

Fires are a continuing threat in Australia, intensified by global warming and extreme climatic changes (Hughes & Steffen 2013). The catastrophe on *Black Saturday*, February 7th 2009, was one of the worst fire disasters in the state of Victoria – more than two thousand homes were destroyed and 173 people were killed (Teague et al, 2010). Its scale and devastation prompted a government funded Bushfire Cooperative Research Centre, which tasked the researchers at RMIT University, Australia, to investigate critical problems that centred on communicating risk to communities. Our team began undertaking field work and pilot projects in various states during 2009 - 2013 to understand how communication is taking place among the fire authorities and between the communities, how social networks perform in preparedness and to explore practical ways to enable shared responsibility and collective adaptive capacity.

With no direct experience of fire or its associated issues, our team began by learning iteratively about the territory as we were influencing it through designing. Initiating an intervention is often the only way to learn the essential dynamics of systemic issues (Schein, 1996). As such, various pilot workshops and engagements with local residents took place to get the ball rolling. Sangiorgi (2011) nominates *Intervention at Community Scale* as the second key transformation principle, but our fieldwork and household visits revealed many issues that made interventions particularly challenging. For example, meeting the residents in the Southern Otways, Victoria, revealed their different levels of vulnerability to fire; their strained relationship with the fire authorities; their level of awareness of risk in relation to their geographical environment; the fragmentation of their community networks due to rapid influx of temporary residents and the enormous task of overcoming social and mind-set barriers for preparedness. Our team quickly realised that it was not a simple process of engaging a coherent and motivated community. Doubt, fear and confusion were rife.

Such descriptions of community as fragmented and dissonant are not often shared in design and social innovation case studies, preferring perhaps an ‘idealised’ notion without differing agendas, tension or power-dynamics. Ideas of community can often be an imagined grouping (Pink, 2008). Kiem’s critique of the EMUDE project by Manzini and colleagues, which explored design for social innovation towards environmental sustainability, points at “...an apparent aversion to questions of power” (Kiem 2013, p. 4) whether within the community or between the in-coming designers and the community. A critical and important challenge for design researchers and practitioners wanting to enable social innovation “is to recognise and negotiate the plurality that exists within communities” (DiSalvo et al, 2013, p. 184) before the participants can become *Active Citizens* (Sangiorgi, 2011, p. 33-34), who can take an “active role in the creation of wellbeing” and tackle issues they feel strongly about.

A significant issue we identified was the community’s sense of disempowerment and the learnt dependency on the authorities for help, a conditioning that had been reinforced over years of being told how to prepare in a ‘top-down’ manner (Akama & Ivanka, 2010). In order to become *Active Citizens* it became apparent that we had to tackle *Redistributing Power*, the fourth transformation principle, initially. To avoid ‘telling them what to do’, we devised a

workshop that centred on valuing and sharing the local knowledge they each held – their neighbours, geographic location, potential fire hazards or people who they thought could be vulnerable, such as isolated residents, families with children and those with any impediment. This dialogue and knowledge exchange was scaffolded using *Playful Triggers* (every-day artefacts like matchsticks, buttons, toy animals) to indicate potential risks and resources on a local map. *What if* scenario cards were also used to help them think about unexpected incidents that could occur in sudden bushfire, and develop alternative plans for mitigation (see Figure 1).

The focus of the workshops, in partnership with the local fire authority and organisations, supported a community-centred process to enable collective strategies for preparedness. Despite the fragmented networks and strained relationships with authority, it attracted residents who shared a mutual concern about fire. It did not really matter whether they knew one another before, because the process of engagement naturally coalesced a group of action. Subsequently, they realised the importance of strengthening relations between neighbours as a form of increasing resilience. The workshop then seeded the need for conversations on collective action to continue afterwards among co-located groups. These design-led initiatives have been published already (c.f. Akama & Ivanka, 2010; Akama & Light, 2012), candidly written to learn from its challenges and enactment, and illustrate how these approach's evolved out of moments of connection, inspiration, unexpected surprises and the responsiveness to new contexts in often in unplanned ways. Critical reflection of these accounts enabled the rich understandings to emerge and a gradual attunement to the complex issues and empathetic connections within the local residents.

Enthusiastic feedback from workshop participants and project partners encouraged our team and build our confidence. Residents were delighted in the effective engagement and thanked us for giving them the methods to use. The tools that scaffolded the engagement process were intentionally 'light-weight' and non-technological, thereby economical and easy to replicate in future workshops. Some residents who came to the workshop requested if they could adopt these methods and develop it further for their particular geographic locality. We continued to receive positive reports from our partner organisations that our initiatives were central in establishing the Community Fireguard Group in the locality where workshop participants signed-up to continue actions for preparedness. In all, the outcomes seemed positive.

After our team had completed the pilot study, to our surprise, no further workshops were held to recruit more residents, and we did not hear how the engagement process sustained and went beyond the initial groups we worked with. Numerous reasons can be given for this, for example, the lack of funds to pay a dedicated facilitator or support multiple workshops; the departure of key advocates from partner organisations and perhaps a general complacency about fire preparedness due to the persistent wet weather conditions that followed. However, the obstacle that hindered this approach from being passed on seemed to stem from a more basic and underlying issue – our team made the assumption that stakeholders cared deeply enough about fire preparedness to take the methods and use them going forwards. In hindsight, even though the participants and project partners had experienced the methods first-hand and were convinced of their value, there was not enough education or guidance to continue supporting them as new facilitators and, perhaps, the 'owners' of this process, to ensure its future sustainability. It demonstrated the difficulty beyond one-off interventions to truly embed transformation so the community had the final ownership of the process and methods themselves for on-going evolution.

Here is another reminder that methods alone cannot enable agency and the need to re-orientate towards the practitioner who embodies the methods and its enactment. Such a position is strongly articulated in Light and Akama's (2012) paper in participatory design, (so it will not be elaborated in great detail here). One of their key arguments is "the interrelatedness between the method as practiced and the practitioner ... that there *is* no method until it is invoked" (p. 61). The act of designing with groups of people is rife with contingency and so it involves an embodied knowing – affective, experiential and improvisatory – drawing upon the personal and performative; merely giving them the methods was not enough. We needed to support community organisations and the fire authorities' ability to facilitate continuous workshops with their residents and truly make the methods their own. The third key principle, *Building Capacity and Project Partnerships*, describes the need to develop, not just the mechanisms of involvement but of change. Our research took a turn towards educating facilitators who could enable the community build adaptive capacities for preparedness. The next section details how this principle was addressed, and more specifically, to catalyse "changes in organisational culture, as well as in the attitudes and behaviour of state officials and service providers" (Cornwall, cited in Sangiorgi, 2011, p. 34) to shift inculcated power-dynamics between disaster management agencies and communities, which is a chronic issue in bushfire preparedness.

Passing on... : Integrating the methods with education



Figure 1: Workshop with emergency management staff. *What if* scenario cards being used together with *Playful Triggers* (artefacts like toy animals, matchsticks, etc).

The Australian Emergency Management Institute (AEMI) runs an intense, four-day programme called *Community in Emergency Management*, to foster a ground-up dialogue for community-centred engagement. Since 2011, I have been running a two-hour workshop nested within this programme. Various professionals participate from all over Australia, including government, state-based emergency services, police, ambulance, NPOs such as the Red Cross and volunteering organisations and council staff. The workshop introduces the

methods used in the Southern Otways. It is an interactive process of learning-through-doing to ensure participants get the 'feel' for what the *Playful Triggers* and *What if* scenario cards enable. To further reinforce community-centredness, participants are asked to visualise their own social networks using the *Playful Triggers*. This provides them with an opportunity to reflect on their relational connection to their 'community of place' and build empathetic understanding of others. Conversations on who to trust, what reciprocity means, who to seek advice and emotional support from, enables the participants to see that their own relationships with members of the community are important in building and fostering social capital.

Towards the end of the four days of intense learning, experiencing the challenges and effectiveness of being engaged in a dialogic, generative and bottom-up process, participants begin to understand its value in disaster management in contrast to their accustomed, top-down management practices. They also understand that resilience can be co-created by a meshwork of people – agencies and communities working alongside one another. Evaluation from AEMI participants consistently demonstrates that they have learnt a great deal through this process, enabling them to adapt the methods and approaches to their own respective roles and work practices.

The following section is based on an interview with two facilitators who were introduced to this particular methodology and have begun applying it in their own contexts. M is part of a team at a local council, working collaboratively on a project that aims to reduce risks and impacts from climate change. They are located in a peri-urban suburb of Sydney, bordering three large National Parks. The risk of fire is significant in this locality, but being so close to the city, many residents have a false sense of security for service provision and assistance in an emergency. Another facilitator, J, had been working for more than a year with an Aboriginal & Torres Strait Islander community in a small, regional town in Queensland that had experienced a succession of devastating floods. The significant difference of the community, type of disaster and location helped to understand what happens when methods are handed over. However, even though this demonstrates the portability of the method, it is important to note that this is not about repetition. Rather, the discussion emphasises the human-centred dimension and the improvisations made to 'fit' the situations they encountered. This is a necessary re-designing process of transformation, echoing the fifth principle, *Building Infrastructures and Enabling Platform* to appropriate and evolve the 'design-for-future use'. This notion of 'infrastructuring' to embed iteration and sustain people's participation has been well established through participatory design. Le Dantec and Di Salvo's (2013) bring a more nuanced view where infrastructuring can also scaffold affective bonds that coalesce groups of action, which we also see in the accounts discussed below.

Handing over... : Embodiment and enactment of methods

M intuitively felt that the *Playful Triggers* mapping activity would engage, stating that she "...knew people would be into it right from the start..." and "...felt quite open to make it what we wanted and how it would work for our local area...". M and I had a chat about this 'intuitive feeling' as facilitators, and that we need to feel our way through, often reading the atmosphere in the room to determine how we knew if anything has shifted for people in that activity. Interestingly, M related this to her own facilitation work in the health sector; "you feel something change in the room that's got a life of its own ... you try and set something up but ... sometimes it comes off in quite powerful way, and sometimes average...". M

valued hearing my own personal accounts and experience of running community preparedness workshops that pointed at “where do people get stuck and how to get out of it”, tips that are often omitted from a textbook. Facilitation, like designing, is an iterative process, learning from past engagements and understandings, adjusting and re-adjusting what one does in relation to others. And even when some things might have occurred incidentally rather than intentionally, we note more consciously what worked, and weave those learnings into the next engagement.

There were many instances where M modified the process and activities, prompted by gauging people’s reactions. For example, when using the *What If* scenarios,

... suddenly, what was going to be a written activity turns into a discussion ... is that right or wrong... and how does that make the experience different for people? ... as a facilitator that's exactly what's interesting to work with ... there were a lot of things like that that arose for me ... there's lots to play with here ... I would definitely be experimenting with what seems to works best, not only in engaging people but really helping people to get their thinking to a level where they haven't gone to before...

The discussion here indicates the seamlessness of the method and practitioner – it is impossible to determine where a method ends and the practitioner begins. In fact, this seamlessness extends beyond this coupling, knitting the entanglements of collective actions, experiences and emotions of the participants and facilitators with the complex dimensions of risk and mitigation. In this way, such experiences are carefully woven into a meshwork of people’s everyday realities and the relational bonds between one another. This connection to people’s lives is tangible and on-going, reflected in the feedback six months after M held the workshops in her locality. Many residents were motivated to complete a bushfire survival plan for the first time or have follow up conversations with their family and neighbours about being prepared. Remarkably, one resident was so concerned for his neighbours who missed the workshops that he sent a personal invitation to everyone on his street and hosted a gathering at his home. He organised the local emergency staff to attend and relay the information he had gained to those who came.

Participants took multiple copies of materials – CDs containing resources and the *What if* scenario cards. They became useful, physical reminders as well as conduits to build further connections with neighbours, as reflected in the feedback. M called these ‘a gift’ that can lubricate a tricky dialogue of “impinging on your space wanting to have this conversation [about bushfires] ... ‘I’ve got something to offer you ...’ a step into that conversation that makes it much easier”. M said such materials became a bridge across social barriers in this urban neighbourhood. These resources have more value by coming via a neighbour rather than receiving it impersonally in the letterbox, especially when accompanied with personal stories; “I know you missed the workshop and I thought you might find it helpful to know”. These touchpoints powerfully demonstrated the sixth principle of *Enhancing Imagination and Hope* that reframe how realities are perceived, overcoming barriers to imagine alternative futures. The residents, through participating and emerging out of M’s workshop, were able to build optimism, empowered enough to consider that they could help others too.

These actual demonstrations of the transformation towards collective preparedness by the residents are a significant achievement for M and the project team. This story is powerful because, through M’s hands, the methods were embodied and made relevant to her local context, and more importantly, M can continue her work to develop the residents’ adaptive capacities in her own particular way. And indeed, her work is still continuing in this locality,

currently with senior residents and addressing the issue of multi-hazards in partnership with various emergency agencies and humanitarian organisations.

Handing over... : From vulnerability to empowerment

Facilitator J has been working with an Aboriginal and Torres Strait Islander (ATSI) community in Queensland for over a year, building the fundamentals of a trusting and respectful relationship. This small township has had a succession of devastating floods in recent years that had resulted in widespread infrastructure damage and a loss of life. The state government asked the local council to implement a Disaster Management Plan, a substantial document that had no connection or meaning to the community. This 'top-down' governance and authority's intervention is a familiar story but more wretched in this context, echoing the town's historical, colonial treatment of ATSI people, assuming them as vulnerable, needing control and protection and are unable to make their own decisions (Blake, 2001). Perceiving Aboriginal people as vulnerable is problematic, bringing with it a paternalistic attitude. J suggests, "that's where you'll keep them", already placing limitations on the capacity that can be enabled. Transforming the community's perception of vulnerability to empowerment was therefore critical to achieve.

J was particularly keen to integrate the methods she learnt at AEMI into a disaster awareness weekend in partnership with the community, emergency services, local council and Aboriginal elders as a way to establish ownership and find a way forward for disaster planning. J was confident of its effectiveness:

The methodology was perfect for discussions and worked well with literacy levels. ... This method allowed great interactions and learnings about their community ... placed locals at the centre of their own solutions.

One of the methods that J adapted was the social network mapping. Instead of undertaking this in pairs, which is how she was introduced to it in the AEMI programme, she visualised all the social groupings that the participants were connected to on a large piece of paper, resulting in a complex web diagram. The visual nature worked really well – she enabled them to actually see how inter-woven their kinship and friendship ties were, reflecting their tight-knit community. It was an eye-opener for the participants who may have tacitly assumed their connection to one another. One participant in J's workshop commented that ,

the [social network exercise] was very good ... for the simple reason that you think of your groups, but when you sit down and think who you're involved with, its a big network that I'm involved with ... its good to be able to refer people to other organisations [when you're helping others].

For this participant, her priority was to help her grandchildren, but since knowing her connection to others, it had made her feel more secure – it means that she could also be assisted as well. Collective recognition of their connectivity was further reinforced in the *What If* scenario exercise that triggered discussion on unexpected emergencies like 'no power, phone or internet'. It prompted participants to identify key people whom they will pass on and receive information from, visualised in the social network diagram.

Towards the end of the workshop, J facilitated group discussion where participants nominated two tasks they could undertake as a strategy of moving forward. Most volunteered to adopt roles in their own street, the assistance they could provide to others and identifying information that they could pass on. This ensured that preparation was

connected to their lives and those around them. Knowing what others were going to do eased any anxiety of being over-burdened. They recognised that they did not need to be totally dependent upon the emergency agencies, nor did they have to be totally self-sufficient and do everything alone. The importance of social networks is touched upon in the sixth principle of transformation, *Enhancing Imagination and Hope* and relational ties are key to building partnerships and trusting relationships. To add, social networks reinforces such social capital and are fundamental for transformation and strengthening resilience as it plays a unique role in fostering information flows and exchange and become a repository of local knowledge (Akama et al, 2013). There is latent potential in social networks, especially those that span across many groups beyond kinship ties to enable people to gain access to advice, services, support and resources. This relational process supports transformation and adaptive capacity, mobilising collective action and prevents social isolation. Likewise, the participants in J's case study demonstrated their collective resilience by rising above the devastation of previous successive floods and in displaying their concern and inter-connectedness with one another and the broader community. In essence, it could be argued that they are now better placed to cope in future disasters than other fragmented and disconnected communities in Australia. Their approach to collective preparedness and planning ensured it was designed in their own words, taking into account their own and each others' contexts and they take ownership of what happens. Their plan has been put forward to the local council to support and passed on to Emergency Management Queensland as their Disaster Ready Strategy.

Letting go ...: Embracing indeterminacy and reflexivity

The importance of participant engagement and empowerment is central to J's practice – a practice built through many years of witnessing ineffective 'lectures' by well-meaning 'experts' who "talk at them rather than with them". J said the hardest thing about community work is the assumption, personal beliefs and expectations brought by the practitioner on what *should* happen and how it *should* happen because "I'm supposed to have the expertise". An expectation that is often placed upon the practitioner by themselves, or by the stakeholders they work for and with. In fact, J explains that the practitioner needs to put the delivery of a project as secondary, and instead, initially engage in active listening in order to achieve a trusting, respectful relationship with the community. "We may have the knowledge [but] the hardest thing is to let go of [our] expertise and to build capacity ... and they do it their way."

J's observations on 'letting go of expertise' so 'they do it their way' can be confronting for designers. To design, after all, is to have an intention and purpose. Could expertise and intention really be relinquished? This is tentatively touched upon in the fourth principle of *Redistribution of Power*, where it describes the potential tension between researchers and participants. The control dilemma that is discussed as a principle relates to external divisions of who is directing the process of change, whether it is the designer-researcher or the user-participant, but it could also relate to the control dilemma within our own approaches. It is better to 'let go of' expectation, dependency and reliance upon theory and methods alone. They are useful and valuable as discussed here, but they cannot be taken for granted in achieving desired outcomes. Instead, I advocate for a kind of surrendering and openness in the practitioner, to embrace indeterminacy and allow for a process that can keep evolving, changing and transforming in ways that may have not been intentional or foreseen at the beginning. To many, this may sound paradoxical and frustratingly confusing, particularly in design research where rigour is often determined by replicable and generalisable

methodology (Akama & Light, 2012). However, I emphasise again the importance of the human dimension – to design in this space is to *become* transformative, rather than merely *understand* transformation (Akama, 2012).

Such introspection, questioning and curiosity for our own values and motivation are important. This is because transformations are not limited to the process, method or what the community does, during or afterwards. We do not yet know about the transformation that occurs within a practitioner as they engage in this kind of process, which omits a vital part of a story. In theory, the approaches described in transformation design, designing for social innovation, participatory design and community-centred design can appear similar, but in practice they are not, especially when it is the people who enact, catalyse and sustain 'change' in their localised contexts. We must embark on a human-centred turn for a deeper and fuller account of designing transformative practices.

Having an honest, open and personal conversation with J and M, and with many other practitioners, researchers and residents over the last five years have significantly shaped my practice. As discussed throughout this paper, this journey enabled critical learning opportunities to understand the tensions inherent in emergency management, the power dynamics of different communities and the challenges of enabling participation. Through this journey, I have developed the ability to be more open, to listen more actively, to attune into different viewpoints and to surrender expectation. To directly experience how hard it is to be challenged, grow and transform also means one gains the ability to build greater empathy for others who are also engaging in the process of transformation too. And indeed, J also admits that it had taken close to ten years of working with communities to be able to 'let go' of her expectations and expertise, and her practice is richer because of this. Such personal stories of transformation need to be explored and shared, and more so in design.

The process of bringing the rich transformative learnings from praxis into the service design discourse is still relatively nascent, and for that matter, reflexivity of the designer researcher is necessary to critically question their interventions on what they are actually doing, why and for the benefit of whom (Sangiorgi, 2011). Interestingly, self-criticality and reflexivity are not stated in the seven key principles for designing transformative practices and, yet, I consider it is a fundamental part of the process. In parallel to designing transformative practices with and for others, I argue that we need to develop a reflexivity of our own values, perceptions and attitudes that manifest as we engage with others. We need to surrender and 'let go' of our expectations and dependency upon methods and principles alone to build a practice and awareness around our own processes of transformation.

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Imagineering as Complexity-Inspired Method for Transformative Service Design

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Abstract

Service design is increasingly oriented toward transformative aims and practices in organizations. With this evolution, service design is entering the fields of organizational studies and social change with high responsibility and sometimes little background knowledge of their respective theories, principles and their recent evolution. Particularly in the field of change and transformation, the recent evolution of theoretical insights and perspectives of organizational science are significant as the move towards complexity science is gaining academic acceptance and starts to be embraced in practice.

This article presents Imagineering as a complexity-inspired design approach to realize transformational objectives, and it illustrates the method with the case study of the transformation of the enterprise logic in the city of Antwerp. The paper concludes by reflecting on the eventual implications and perspectives of the method for the practice of service design as transformational design and for design thinking in management in general.

Keywords: Service design, Organizational transformation, Emergence, Complexity, Imagineering

Introduction

Service design is recently emerging as a design practice of great interest to organizations with levels of potential impact reaching from service interaction design to something as profound as organizational transformation (Junginger & Sangiorgi, 2009). Designing for organizational transformation is specifically needed in society as value creation in society is shifting from a goods-dominant logic to a service dominant logic which implies that organizations are in need to transform their enterprise logic to thrive in today's networked society (Kimbell, 2009; Vargo & Lusch, 2004, 2008).

Recent advances in the theories and practices of service design (Morelli, 2007; Young, 2008, Sangiorgi, 2009; Junginger & Sangiorgi, 2009; Sangiorgi, 2010) as well as the theories and practices of service dominant logic (Wieland et al 2012) point towards the need for

theoretical frameworks and methods to understand and approach services from a systemic perspective, and more specifically from a complex systemic perspective, seeing services as complex social systems. This shift in scientific perspective from conventional systems thinking to complex systems thinking is particularly important when designing for organizational transformation as both scientific perspectives differ fundamentally in this regard. So far, however, apart from important developments in the field of computational complexity, the field of organizational design and social complexity is still in its infancy.

Already Banathy (1996) in his book 'Designing Social Systems in a Changing World' argued that designers can make use of two different scientific resources for doing design work: conventional systems thinking and complex systems thinking, the mode of systems thinking that is nurtured by the emerging scientific paradigm of complexity science. In his work Banathy argues about the importance to explore the relevance of this emerging scientific paradigm for design in working with human systems especially in the context of the changing society.

One of the emerging ideas of the new physics that might shape design thinking in this context according to Banathy is Bohm's theory of wholeness and order. In this theory Bohm (together with Peat (1987) defines 'implicit order' as the enfolding of reality from which the explicit order of specific phenomena unfolds. As Bohm suggests that 'generative order' is relevant not only to science (e.g., the science of chaos) but to all areas of experience, Banathy finds the notion of generative order to be directly relevant to design thinking. The artist, as the designer, begins with an overall vision (the image of the future system), a general idea and a feeling that already contains the essence of the final work in an enfolded way, from which, as the painting (value creation) progresses, details are created gradually, each time building on the whole.

Confronted with growing complexity in society at the turn of the century and puzzled by the alignment of the theoretical insights articulated by Banathy and the practice of the 'high concept'-way of working in the movie-industry (and the broader entertainment industry, a way of working that the Disney-concern started to call 'imagineering: engineering a concept that appeals to the imagination of employees and customers at the same time'), we started to experiment with these insights in change practice. We experimented with transforming the enterprise logic by redesigning the logo in an imaginative, participatory, 'high concept'-way. The first experiments were in leisure, tourism and recreation and soon after in all kind of other situations such as the city of Antwerp, several Belgian retail-chains and several governmental and non-governmental organizations in the Netherlands.

This article reports on the experimental work and the findings in the case of the city of Antwerp, an experiment that was going on for some ten years and in which it can be said that sustainable transformative change has been realized. First, however, we summarize two essential building blocks of the method: The shift in value creation in society (the reason why transformation is needed and possible) and the complexity perspective on organizational transformation (that brings in another ontological image of change as emerging order). Then we present the method and illustrate it with the case of the city of Antwerp. Finally we reflect on the method and on its potential and implications for furthering the field of transformational service design.

The shift in value creation in society

According to Ramirez (1999) people have always got two modes of value creation: the sequential mode (in value chains) and the simultaneous mode (in value networks). Technical and social breakthroughs are rendering today the simultaneous mode more relevant. In the connected society roles and responsibilities of marketers and consumers can be rethought in a broader way (Seth & Uslay, 2007). Ramirez (1999, p. 61) considers 'the (sequential) industrial view as still applicable to a limited set of value creation situations, but (simultaneous) 'value coproduction' goes well beyond these'.

Because of growing connectivity and interactivity, value creation can now be installed in an orientation of mutual interest and with an emergent perspective of co-creating value with participants for society at large. This way every social opportunity becomes a business opportunity and vice versa.

Paradigm shifts that transform scientific disciplines and the value creating logic in society do not occur frequently and they are not welcomed unanimously and even not easily seen by scientists and practitioners. Ciborra (1995) argues that co-production has been there all the time but that it were industrial-based conceptual frameworks that made us think that we should study production and consumption separately and statically instead of studying them as dynamic relational processes.

The shift in value creation as a consequence of growing connectivity, has implications in at least four fields of practice and research (Ramirez, 1999): First: The business definition: Interactivity as a focus leads us to rethink relevance, roles, relationships and responsibilities; Second: The way we organize work: a co-production framework is of 'a higher logical type' than the industrial framework and it makes the industrial one only applicable inscribed in a wider typology of possible forms of value creating networks (value creating systems should be as under-designed as possible (Brand, 1994 in Ramirez, 1999, p.57)); Third: The way we manage: managing complex systems requires managing ignorance, it asks for coordination skills to 'enhance auto-organizational processes in line with current 'Santa Fe' thinking on complexity' (Waldrop, 1992 in Ramirez, 1999, p. 59) allowing people to co-design and to learn and it asks for challenging 'dynamic conservatism' and 'institutionalized inertia' to bridge ever greater incompatibility. Ramirez even introduces the concept of 'Return on customer base' in this context as customer effectiveness becomes as much a corporate worry as own employee effectiveness; and Fourth: The transition towards a co-productive economy: the transformation of the enterprise logic from the industrial exchange logic towards the networked logic of value co-creation, a field in which according to Ramirez anno 2000 more research is needed as to prevent 'change-leaders to become cheer-leaders'. The fore-lying transformative service design research fits in this context.

A complexity perspective on organizational transformation

It was the Nobel Prize Winner Chemistry (1977) himself, Ilya Prigogine, who connected today's growing connectivity to the emerging paradigm of new physics, articulating that by growing connectivity, the study of non-linear, living dynamic systems such as the weather, offers better glasses to understand today's dynamic reality than the equilibrium focused glasses of the Newtonian paradigm (Van der Heijden in Kahane, 2012, p. x). The Newtonian mechanistic and deterministic template that assumes predictability and certainty will still

serve us well in ‘closed systems’ such as the production of materials. In open systems however, such as the weather, a burning candle light or organizations in the connected society, other principles and processes (such as the relationship with the environment and metaphors such as the butterfly effect) of non-linearity dominate the scene. Different from the Newtonian world where systems run down and are subject to deterioration, non-linear dynamic systems are able to transform themselves into emerging new states of being.

Just like service-dominant logic offers a perspective for studying today’s value creation in an integral way, a perspective that is more aligned to today’s reality, complexity science offers an even more profound, complementary scientific perspective to study dynamical processes in a connected society such as the process of transformation or strategic innovation. We have all been raised with the idea of cause and effect in the sense that we are used to the fact that small causes have small effects and large causes have large effects. In case the opposite happens as is often the case on the internet or in starting successful entrepreneurial activities or with fascination (remember the tourism effects of the books of Dan Brown or Harry Potter), we don’t perceive this as a ‘normal rule of non-linear’ systems but more as a ‘lucky’ (or unlucky in case of the Arab spring in Egypt) accident observing these events with our linear glasses. Daily it becomes more evident that the management logic that has been developed in the last 40 to 50 years is framed on the linear template and that in coping with complexity, (in coping with problems where everything is connected to everything else) we need a complementary logic, a logic framed on the non-linear template.

New assumptions emerge from studying non-linear dynamic systems, assumptions that contrast with conventional thinking about organizations (West, 1985): Instead of being in stable equilibrium, organizations are in a state of constant change; instead of being able to understand organizations by analyzing their separate parts, emergent systems are not reducible to their parts; instead of being essentially a linear process involving independent elements (employees, departments, SBU’s), organizing is a mutually interdependent process and instead of cause and effect being proportional to each other, there is no clear cause and effect relationship and actions and outcomes are non-proportional, in other words: In non-linear dynamic systems, small interventions can emerge in something big. These counter-intuitive behaviors also highlight that simple cause effect linear thinking (such as much of strategic planning) has limited meaning in complex dynamic systems, especially in living systems in a highly interconnected world.

Complexity science offers an imaginary that helps us in changing our thinking about change and the dynamics of change (Stacey, 1995). In a dynamic worldview change is ‘the normal’ as opposed to its position in a linear worldview. Instead of being oriented towards understanding change, the primary question in complexity science is how new order emerges. As such, change is seen as a process of emergence. Emergence then is a phenomenon that always has existed. It is the reason why there are hurricanes but also traffic congestions, rock concerts and democracies. The phenomenon has been studied as well by ‘reductionists’ as well by ‘holistic’ theorists (Corning, 2012). Goldstein (1999) describes the phenomenon as the coming-into-being of novel, “higher” level structures, patterns, processes, properties, dynamics and laws and how this more complex order arises out of the interactions among components (agents) that make up the system itself.

From the perspective of emergence then, change is a matter of generating momentum in a new (more wanted) direction. So far complexity scholars have identified two distinct drivers of emergence: Far-from-equilibrium dynamics (a state of being) that triggers order creation and adaptive tension (an energy differential) (McKelvey, 2004), which can push a system

toward instability, leading to the emergence of new order. In more recent work on emergence in human settings, entrepreneurs are seen as possible creators of adaptive tension that drives processes of emergence. Doing so there is 'a place for man' in Prigogine's theory of self-organization by the use of the 'imagination' (Loasby, 2007, p. 1743). This insight is crucial in our argument on the design approach of imagineering. In our approach we suggest that the two archetypical logics of value creation allow for designing an 'adaptive tension engine' in order to evoke 'emerging processes' in human settings, an emerging process from one dynamical state of industrial sequential value creation to a more complex one of simultaneous value co-creation in interaction with the environment..

Imagineering

In complexity language then, imagineering is the design approach in which an adaptive tension engine is designed to evoke 'emerging processes' of self-organization/self-ordering such as enterprise logic transformation or systemic innovation. The adaptive tension engine works by reframing existing mental models in a strategically wanted direction. This reframing is orchestrated by a linguistic artifact designed in the narrative mode. It is the use of the narrative mode that invites and engages for re-interpreting daily routine and strategic actions by individual agents as members of a collective. Consecutively, the emerging processes are managed according to the dynamics of dissipative structures: the dynamics of stabilization, positive feedback, re-combination and fluctuation. (This second part of the process won't be explained further in this article as this second part is more a matter of management than design).

In 'conventional' language then, we define Imagineering as the complexity-inspired design approach that makes use of the narrative mode in order to strategically ignite and frame collective creativity. Let's explain the two elements that were not yet explained: the 'narrative mode' and 'collective creativity'.

According to cognitive psychologist Bruner (1986, p. 11) 3 people have "two modes of cognitive functioning, two modes of thought, each providing distinctive ways of ordering experience, of constructing reality", being the rational, logico-scientific mode of reasoning ("science of the concrete") and the narrative mode of reasoning ("science of the imagination"). Logico-scientific reasoning seeks to understand specific phenomena in an 'objective' way, while narrative reasoning seeks to understand them in a 'personal, subjective' way. It seeks to understand phenomena in terms of human experience and purpose. Scientists rely most often on the former and artists work most often in the latter. The term of 'narrative' is often used interchangeably with the term 'story'.

Narratives and stories do not convince the audience by their objective truth but by their emotional appeal. This emotional impact is achieved through the use of literary features such as aesthetic appeal, metaphor (something is made more meaningful or vivid through subjective comparison with something else) or moral order (being relevant to society). As linear answers are simply not possible to give in coping with complex problems, imagineering makes deliberately use of the narrative mode of reasoning as to stimulate interpretation, variation, collective creativity and sense-making. Designing in the narrative mode then is remarkably different from designing in the logico-scientific mode. Designing in

the narrative mode is about engaging people in a subjective, future oriented and creative way. Designing in the narrative mode is evolution-oriented instead of solution-oriented.

Different from conventional creativity that has been defined as “the generation or production of ideas that are both novel and useful” (George, 2007), collective creativity is the creativity that emerges from the interactions of ideas of diverse people rather than from the mind of any given individual (Marion, 2012). Most of the creativity research so far is entity-based. Creativity is considered (by psychologists) to be a variable of an individual, a variable of the ‘creative personality’ that can even be measured as such (Csikszentmihalyi, 1999). Collective creativity is the creativity for which no one individual insight is by itself responsible for solving the problem.

In this turn from seeing creativity as a characteristic of an individual towards seeing it as a characteristic of a whole system, the significance of artifact-mediated communities, domains and practices comes into play. It is an artifact that enables and inspires such processes and it is obvious that the Internet is a significant mediating and catalyzing infrastructure for processes of collective creativity. It is evident that the outcome of processes of collective creativity cannot be predicted from preceding conditions and that it cannot be planned as such. Nevertheless, it can be evoked, not in its specific form but in the fact that it will very likely emerge from dynamic conditions. The challenge of evoking collective creativity then lies in enabling dynamic conditions.

The case of the city of Antwerp

To reframe the identity and the mind-maps of stakeholders in regard to the city of Antwerp from the industrial exchange logic towards the logic of value co-creation, the logo was redesigned in order to reframe the logic. A narrative was designed (in Dutch) that says ‘The city is from everybody’, articulated in the local dialect. The narrative was integrated in the new city (promotional) logo and as such used in all communication of the city.

In 2004 Antwerp found itself in a downward spiral of negativism, cynicism and bureaucracy which culminated for the inhabitants and administrators in what they called ‘the VISA-crisis’ while in the midst of this negative downward spiral highly positioned managers abused the Visa-card of the city for private reasons. Because of this abuse the sitting female socialist mayor was replaced by a younger male socialist mayor who had a background in communication being the CEO of one of the biggest advertising agencies in Belgium at that moment.

From his perspective of communication, the mayor analyzed the situation and revealed the general fragmentation as the biggest problem of the city: policy was fragmented (there was no clear future direction) and structures were fragmented: every department had its own communication budget, its own logo and its own PR-agency. A we-feeling was missing as was a feeling of community. Dominating was the idea ‘We are doing well in our department but the city, the city is a big problem’. Therefore he organized a competition between the biggest advertising agencies of the country as in Belgium it is common use to hire this kind of agencies for strategic work.

Five agencies were involved in the competition and four of them presented a conventional change trajectory with workshops with all kind of stakeholders in order to solve the fragmentation problem. There was only one agency (the agency with which the author

worked) that presented a non-conventional approach, an approach based on complexity thinking. They delivered a communication ‘solution as an evolution’ instead of a change plan. It presented a new logo, a logo with a tagline in the narrative mode: a subjective text integrated in the identity of the organization, using the logo to reframe the logic. Even while there were cities and countries using taglines from a marketing perspective, it was definitely not common to use the logo for organization development purposes.

The mayor who had a communication background himself embraced the logo and in a rather authoritarian way, ‘rebranded’ all touch-points in only four months. This ‘fast way of introducing prevented stakeholders from questioning the choice for change and it also prevented them from going back to the former situation of fragmentation and intolerance as it was part of the identity from that very moment.

Former, official logo	New, ‘promotional’ logo with tagline: The city is from everybody
	

Figure 1. Box: Illustration of former, official logo and newly designed, ‘promotional’ logo of the city of Antwerp

Integrated in the logo, the artifact reframed mental maps. It caused an adoptive/imaginative tension towards the more wanted enterprise logic by effectuating two orientations:

- » Relevance orientation: It orients all stakeholders to more tolerance and openness which is essential to become a more creative city;
- » Relational orientation: It invites all stakeholders to participate in value creation. It invites them to reconsider their role from passive inhabitant to active and responsible creator of value.

The articulation in the narrative mode has heuristic and holistic effects. To say it with the words of one interviewee: ‘Everyone can see something else in it and that is definitely the strength and the intention of the message. But one thing is sure: it will be something constructive. It definitely tells you that you are part of the warm community called ‘the city’. And also: “The logo is great in all its simplicity. It’s purely poetic as had said the mayor when he first saw the new logo in the context of the competition”.

The narrative ‘openness’ of the strategic design causes an imaginative tension in the first place for the administrators and politicians of the city. It gives them a new window through which they can see a new, more meaningful collective horizon of acting. Integrated in the logo it acts as a message that asks for implementation. One interviewee articulated the integration of the message in the logo as follows: “From now on, we speak with one voice of hope. We are together in this and we are all as responsible for what we make out of it.” The message is a starting point for all that happens in the city and in all assessments it is the starting point of the interview asking from all employees to think over the meaning of the narrative for their own functioning.

The employees see themselves no longer as people that plant trees, clean streets, design new buildings or organize events but they see themselves as people that plant trees that should be for everyone, they clean streets and keep streets clean because the streets are from everyone and that they design buildings that should be accessible for everyone (The building of the new Museum (MAS), for example, is accessible freely for everyone, only when one wants to visit the museum which is located at the inner core of the building, one has to pay.). When they organize events, these events are for everyone, which means, for example, that there is no longer VIP-treatment in events of the city of Antwerp.

“If there had not been a fertile soil in administration, one could never have realised such a transformation. In that case the mayor could have thought of changing things but other people in the organization should have taken things slowly.” Now there was a mayor aiming to change things for the better and there was an administration willing to make change come true. But as one interviewee mentioned: *“I don’t think that the transformation could have happen without the logo but it couldn’t have happen without the sentence in it either. On its own the icon should have been seen as a kind of Warhol-thing and with the sentence next to it, everything was clear. It needed no further explanation, the direction was obvious for all stakeholders. Both were needed to effectuate the transformation. The logo catalysed us away from negativism and bureaucracy into positivism and openness. Gone were the stories of us and them, the bad guys and the good guys. From now on, it was all about ‘us’. There was a significant growth of proudness and an even bigger decline of negativity. The new logo really worked as a catalyzer”.*

That the atmosphere in Antwerp changed in the period between 2004 and 2010 is obvious: investments grew significantly and there was a growth of 5% measured in ‘proudness on the city’ in as well national as local research. But as there are no clear cause-effect relationships possible in complex issues, it is hard to say ‘exactly’ how effective the small intervention was in effectuating the ‘measurable’ change. Nevertheless, the evolution was remarkably positive and the people that were already employee of the city at the time of the transformation, were all convinced about the positive catalyzing effect of the intervention on the total picture.

As a warning for future followers designers: it will be evident that changing the enterprise logic is not just a matter of redesigning the logo but, as with all design, there is the second part of the implementation. Managing emerging processes from a complexity perspective is a matter of managing the dynamics of dissipative structures, it is a matter of taking care that the change persists in the behavior of the individual actors as to keep the evolution going.

Conclusions

As service designers work increasingly across organizations, institutions and communities to enhance transformational processes in the connected society, there is an important need for theoretical frameworks and methods to understand and approach services as complex social systems. It is clear that complexity science offers a complementary ontological image concerning change and transformation as compared to conventional science. Seeing and approaching change and transformation as a process of emerging new order, results in ‘joining-up’ approaches in which collective creativity is an important operant resource. Therefore we have presented the design method of Imagineering and its application in the case of Antwerp as to challenge the existing perspective of transformative service design (and service dominant logic) from the complexity perspective.

It is evident the shift in value creation in society offers an important opportunity for transformative design approaches as more than ever transformation is needed in society and

new holistic approaches are needed as we can't rely on the recipes of the past. Service designers can play a crucial catalyzing role in this historic societal shift. At the other hand, what we seem to need in this context today is not 'design as usual' but 'design-informed- by-complexity science'. And this kind of design is still in its infancy, at least, in the context of transformative work. The creative industries might be an interesting field of research to learn about 'shifting perspectives by using the narrative mode'. More research is definitely needed in the triangle of management, design and complexity as the responsibility of transformative service design is significant.

As a last remark we would like to point in the direction of a possible 'myopia' in design thinking that might exist because of the word 'complexity' which has not always the same meaning in designer language as in complexity science language. In designer language working with complex problems is a much used 'narrative' in pointing to fuzzy, complicated problems, often in the context of closed systems thinking. This dual use of the word complexity could possibly result in an underestimation of the potential input of complexity science for design work in working with open systems. There is the risk that designers trained in the linear logic (as nearly all designers are) keep going with the linear conventional logic in designing for open, complex living systems and this might result in more systemic failure on the longer term as complexity is still growing exponentially. Word-use is definitely something the academic design community should take care of, on the one hand to prevent myopia and on the other hand, to be able to 'say new concepts' as is the case with imagineering as a complexity-inspired design approach. Words can create worlds but they can also keep worlds closed.

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Service Design as an approach to New Service Development: reflections and future studies

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Abstract

This paper illustrates how, although Service Design has been described as evolving from a narrow description of a phase in New Service Development (NSD) to an approach to Service Innovation, the current Service Design research is still focused on the initial stages of NSD. Comparing existing Service Design research with foundational knowledge on NSD, the authors have proposed two complementary directions for future Service Design studies: 1) the expansion of ‘service design as a phase’ to investigate how Service Design processes and outcomes can be better linked with and integrated within the development and implementation stages of NSD; and 2) the application of ‘Service Design as an approach’ studying how current human-centred design methods could be extended and adapted for service system development and delivery, and how ‘designerly’ ways of innovating could inform the overall NSD process.

KEYWORDS: New service development, service design, service innovation

Introduction

Alongside the growing role of the service economy in developed countries, studies into New Service Development (NSD) and its role for service innovation have increased (Zomerdiijk & Voss, 2011). Associated with these studies, the term ‘service design’ has been introduced and described as “a form of architecture that involves processes rather than bricks and mortar” (Edvardsson, 1997, p. 31). While NSD describes the entire process of developing service offerings, service design is concerned with design activities using dedicated tools and techniques to specify or concretize the structure and infrastructure or concepts of a service (Goldstein et al., 2002; Johnson et al., 2000). Service design is considered as a critical stage for service development, as it works on the ‘prerequisites’ (service concept, service system and service process) for achieving service quality (Edvardsson, 1997).

As part of design inquiry, Service Design¹ has been rather introduced as a human-centred and creative approach to service innovation (Meroni & Sangiorgi, 2011). One of the early accounts of Service Design defines it as “planning and shaping useful, usable, desirable, effective and efficient service experiences” (Moriz, 2005, p. 40). However, due to the evolving nature of Service Design, it is now more understood at a higher level of abstraction rather than as a narrow description of certain design activities. In other words, Service Design is increasingly considered as ‘approach’ or ‘thinking’ that can be transferred to a wide variety of practices for service innovation (Stickdorn & Schneider, 2010).

But, Service Design, as an approach to service innovation has not yet been systemically explored in terms of its capabilities and competencies to contribute to service development, so its legitimacy remains uncertain (Stigliani & Tether, 2011). Designers recently have been critiqued for their weakness in terms of service implementation; their ideas stay “on the drawing board” due to the “lack of attention to economics—ensuring that ideas are cost effective—and lack of attention to organizational issues and cultures” (Mulgan, 2014, p. 4). Also, an ongoing AHRC funded networking project into Service Design Research in UK² has suggested the need to clarify the core of Service Design and to conduct research into how Service Design projects can be better implemented, embedded, measured or scaled up.

Given these considerations, this paper aims to create an initial conceptual framework to locate Service Design studies in NSD dimensions to identify where and how current Service Design research could fit into the foundational knowledge of NSD. This could help to better understand the contributions of Service Design research to service innovation. Besides, it could support discussions about the role of Service Design, and better dialogues with different fields of service research (Ostrom et al., 2010). After discussing the findings of the study, some reflections and future research directions are suggested.

New Service Development: primary aspects of NSD

In this section, with the aim of overviewing the whole process of developing services, NSD studies are examined. With a growing attention to innovation in services, how organizations develop new services emerged as one of the critical avenues for research. Scholars focused on how the development process of services and products are different, and what general principles can be applied to developing services (Zomerdijs & Voss, 2011). Although services cannot be controlled like tangible products, scholars paid attention to the fact that the prerequisites for successful services can be created (Edvardsson & Olsson, 1996). This perspective encouraged further research to develop systematic approaches to NSD. As part of these studies, various dimensions of NSD such as key concepts, success factors, process models, tools and techniques, and performance measurement were studied. According to our goal to compare and position Service Design against the overall service development process, this study concentrates on three main aspects of NSD: 1) what are the phases of NSD; 2) what are the objects of design in these phases; and 3) what facilitates and supports the service development process. The following sections will discuss these topics in detail.

¹ For clarity, this paper uses ‘Service Design’ in capital letters to indicate a design approach to NSD distinguished from ‘service design’ as a phase in NSD.

² www.servicedesignresearch.com/uk

Process

As a systematic service development process is considered as one of the critical success factors (Edgett, 1994), various scholars have developed NSD process models that identify key activities within NSD (Cooper & Edgett, 1999; Johnson et al., 2000; Zeithaml & Bitner, 1996). These initial process models were grounded on knowledge coming from New Product Development, consisting of a linear sequence of steps from strategy development to commercialization (Booz et al., 1982). The later recognition that services have different characteristics from products led to the development of alternative models that better reflect the specific nature of services. Johnson et al. (2000) proposed an iterative, cyclic and nonlinear NSD process model consisting of four basic phases—design, analysis, development and launch—that embrace diverse sub-phases proposed by other models.

Objects

Edvardsson & Olsson (1996) argue that services cannot be created but the prerequisites for services can be designed. Among the prerequisites, service concept and service delivery system are frequently discussed as elements for the strategic service alignment of NSD (Roth & Menor, 2003) and are thus discussed here as NSD design objects:

Edvardsson & Olsson (1996) define ***service concept*** as a prototype for a service. According to scholars, it may mean a firm's business proposition or components of service offerings, but Goldstein et al. (2002) contend service concept should be understood holistically as a whole picture from customers' perspective given the complexity of services. Clark et al. (2000) described the main components of the service concept as value, form and function, experience and outcomes. In other words, what values customers are paying for, how the service looks and operates, how customers experience the service, and what are the service outcomes constitute the whole service concept. These components need to be clearly defined and shared with stakeholders before the process proceeds to the operation phase because well-defined service concepts can help organizations translate abstract ideas to concrete operational information (Goldstein et al., 2002).

On the other hand, ***service delivery system*** involves how service concepts are realized (Roth & Menor, 2003). Service concepts are translated into service specifications, and building on the specifications service delivery system is configured. Therefore, aligning service concept with service delivery system design is vital for achieving successful service performances (Ponsignon et al., 2011). Some scholars examined what components make up the service delivery system (Ponsignon et al., 2011; Roth & Menor, 2003; Tax & Stuart, 1997). To name a few, employees, customers, organization/control and physical/technical environment (Edvardsson & Olsson, 1996), and processes, participants and physical facilities (Tax & Stuart, 1997) are often discussed. To synthesize, these system components can be grouped in structure (physical, technical and environmental resources), infrastructure (people), and processes (a set of activities that use the structural and infrastructural resources to deliver services) (Goldstein et al., 2002; Roth & Menor, 2003).

Facilitators

Finally NSD literature identifies some key aspects that can work as enablers (Johnson et al., 2000) to lubricate the flow of the whole development process. They are teams, design tools, and organizational culture.

Methods and tools play an important role in the process of developing services. There are a wide variety of tools, which can be employed in the different phases of the development

from generating service ideas to service policy deployment and implementation. According to Edvardsson et al. (2000), those methods are mainly used to enhance an understanding of customers and reinforce internal communication within organizations. Successful services, which satisfy customers' needs, can be generated from a close dialogue and interaction with customers throughout the development process. In regard to collecting customers' needs, a focus group or in-depth interview can be employed, but considering customers' limited capabilities to express their latent needs and desires, more innovative methods are needed (Edvardsson et al., 2000; Zomerdijs & Voss, 2011).

The involvement of customers and front-line staff is also considered as a facilitator in the service development (Rubalcaba et al., 2012). Edvardsson et al. (2000) suggest service failure can be caused by technology-driven developments rather than customer-driven ones. Also with the emergence of Service-Dominant (S-D) logic (Lusch & Vargo, 2006), the role of service users has become more central. The S-D logic emphasizes how "value can only be created with and determined by" users through use, and how customers and other partners can participate "in the creation of the core offering" through shared creativeness (Lusch & Vargo, 2006, p. 284). Together with customers, employees can contribute to service innovation (Rubalcaba et al., 2012) as they know customers' needs through close contacts or interactions with the customers. Furthermore, employees' participation per se can reinforce their ownership of the services they offer (Zeithaml & Bitner, 1996).

Finally, the *organizational dimension* can affect service development. Edvardsson et al. (2000) discuss the impact of the organizational culture on service development strategies and business performance. Organizational culture is mirrored in the values that members in the organization hold and concretized in the norms through which the values are manifested on a daily basis. The organizational culture experienced and lived by employees can ultimately influence the organization service-customer culture (Zeithaml & Bitner, 1996). In addition, organizational structures and communication flows can influence the overall efficiency of NSD (Stevens & Dimitriadis, 2005).

NSD research framework

For the scope of this paper we have integrated the three aspects of NSD—process, objects and facilitators—in a framework to be used as a reference to position Service Design studies (Table 1). Overall, the process consists of two macro stages, a planning phase and an execution phase (Johnson et al., 2000). We summarized these two main stages with the questions: 'How are services designed?' and 'How are services implemented?' The objects of design in these two stages differ in details and focus, while the facilitators work across the overall phases. Even if these two parts have different management needs, they must be carefully connected and coordinated (Ponsignon et al., 2011). In the next section, we will use this framework to locate Service Design research contributions in the NSD context.

	How are services designed?	How are services implemented?
Process	Design Analysis <i>Planning Phase</i>	Development Launch <i>Execution Phase</i>
Objects	Value / Form and Function / Experience / Outcomes <i>Service Concepts</i>	Structure / Infrastructure / Process <i>Service Delivery System</i>
Facilitators	Methods and Tools Staff and Customer involvement Organizational Dimensions	

Table 1. New Service Development research framework

Service Design perspectives in the context of NSD

As introduced earlier, Service Design has been discussed as a new design agenda over the past two decades. However, as Kimbell (2009) pointed out, service design practices rely more on tacit and informal knowledge, while academic studies are still limited and fragmented due to their different research backgrounds. In this section, existing Service Design literature is reviewed to consider how Service Design knowledge can be related with NSD studies along with the suggested dimensions: process, objects and facilitators.

Process

Whereas NSD processes can be thought of as a formal and prescriptive model, Service Design processes are more flexible and dependent on the context of each project (Stickdorn & Schneider, 2010; Zomerdijs & Voss, 2011). Designers go forward and backward between each phase iteratively (Stickdorn & Schneider, 2010). In general, Service Design uses and adapts the Design Council double diamond model³, which identifies four main phases: discover, define, develop and deliver. The process involves exploring design opportunities with people, generating ideas and solutions, developing the concepts, and producing actionable outcomes for delivery (ibid.). Meroni & Sangiorgi (2011) similarly identify four activities: analyzing, generating, developing and prototyping. While most of the processes range from ideas generation to service delivery, little is known about service implementation.

Objects

The object of Service Design has been discussed since designers entered the service field (Secomandi & Snelders, 2011). Early Service Design built its own identity relying on interaction design paradigm (Pacenti, 1998). Many designers focused on service interfaces and interactions aiming at touch-point innovation and enhanced service experiences (Clatworthy, 2011). These approaches can be seen to contribute to the development of service concept in that they focus on creating service forms, outcomes and experiences. Later, along with the attention to the contextual and complex nature of services, the object of design expanded to the considerations on service systems, stakeholders and organizations.

³ <http://www.designcouncil.org.uk/about-design/how-designers-work/the-design-process/>

Studies on the nature and qualities of the object of Service Design are elaborated in the following sub-sections.

Service interface, experience and relationships. Service Design considers as a main prerequisite for service quality the design for service interfaces, which are at the intersection between user and the service system (Secomandi & Snelders, 2011). Starting from an analogy with Interaction Design, designers orchestrate the service interface elements—people, products, information and places—to enable better experiences (Mager & Evenson, 2008; Meroni & Sangiorgi, 2011). Mager (2008) describes how touch-points need to be ‘useful, usable, and desirable’ from service users’ perspective. The overall interactions with these touch-points shape users’ opinions on the whole service experience (Clatworthy, 2011; Lo, 2011). The focus on the interaction between users and service system is also at the centre of Experience-Based Co-Design (Bate & Robert, 2007a). In this methodology, the focus of design is on patients’ cognitive and emotional pathway throughout the service to improve service experience. Along human-centred design traditions, designers work on service interface and experience developing an empathic understanding of how users feel about the service and what they desire for the future service (Lo, 2011; Stickdorn & Schneider, 2010). This understanding of users’ intangible experiences is translated into tangible visualizations to inform the service development process (Segelström & Holmlid, 2011).

On the other hand, when people use a service, they enter into a relationship with service providers and other service actors (Polaine et al., 2013). Thus, designing for good relational qualities has become a focus for Service Design. As interpersonal interactions in service encounters play an important role in the quality of the overall service experience, they should be carefully ‘meta-designed’ (Cipolla, 2007). Designing for good interpersonal relationships is also particularly relevant for the so called ‘collaborative services’ where ordinary people collaboratively engage in creating solutions to solve their own daily problems unmet by existing system (Manzini, 2005). In order to facilitate the emergence, growth and diffusion of such services, designers aim to design the right conditions (prerequisites) for enhanced interpersonal relationships (Cipolla, 2007). Similarly, in the design for public services, Boyle et al. (2010) call for ‘reciprocity’ and ‘mutuality’ among service actors to facilitate a co-production culture. Also, supporting the creation and growth of social networks is considered as a key prerequisite for successful collaborative service models (Boyle et al., 2010; Cottam & Leadbeater, 2004). Whereas a traditional managerial perspective regarded heterogeneity caused by human interactions as a threat to management of service qualities, Service Design considers this as an opportunity for unique and rich service experience (Cho, 2011).

Service contexts and service system. As service interactions do not happen in a vacuum, Service Design research pays attention to the contextual and organizational factors that influence service interaction quality (Sangiorgi, 2009). Maffei & Sangiorgi (2006) suggests how services should be understood as “complex dynamics of situated interaction within a precise experiential context” (p. 3). Kimbell (2009) describes Service Design as the proposal for new value relations within socio-material configurations made up of people, artifacts and technologies. In order to better understand and design for service systems, Service Design research has looked into existing theories and conceptual models from the social science to help designers interpret services as complex social systems where individual service interactions happen. Morelli (2002) uses ‘Social Construction of Technology’ theory to describe services as socio-technical systems, deriving a set of criteria to analyze the technological frame of different service users. Maffei & Sangiorgi (2006) adapted ‘Activity Theory’ for a theoretical framework in order to understand and represent service interactions

within a wider system beyond user-service interface interaction. On the other hand, Service Design research has paid attention to mobilizing people for building successful service delivery system by utilizing a transformative effect of Service Design (Lin et al., 2011). Successful service implementation sometimes entails the need of the people's behavior change as their reluctance or resistance to changes can be an obstacle to achieving service innovation. Also, designers can help stakeholders to have capabilities to manage services by delivering Service Design knowledge with design skills and tools through the collaboration with them in the service development process (Han, 2010).

Facilitators

Research on Service Design focus and areas of applications is closely connected, and often coincides with research on what NSD defines as facilitators: methods and tools, staff and user engagement, and organizational dimensions.

Design methods and tools. A significant part of Service Design literature is dedicated to case studies illustrating and evaluating the application of service design methods and tools. Some of these tools are often an adaptation of ethnography and user research methods as a way to capture rich users' experiences and translate them into design opportunities (Stickdorn & Schneider, 2010). When designing for service interactions and experiences, designers translate intangible experiences into a tangible and visible form: i.e. personas, customer journeys, service blueprints, storyboards, scenarios and experience prototypes (Segelström & Holmlid, 2011). In addition, design methods for analyzing and designing service system have been developed and adapted. For example, Service Design research has adopted service blueprint (Bitner et al., 2008) and developed it further to integrate different hierarchical levels (Patrício et al., 2011). The relations and interactions among service actors within service system have been also considered in some methods: i.e. service ecology map (Polaine et al., 2013), service system map (Maffei & Sangiorgi, 2006) or actors network map (Morelli & Tollestrup, 2007).

Staff and customer involvement. Various stakeholders can play a significant role in Service Design processes. During the early phase of the process, users and stakeholders can contribute to collective creativity, and during the implementation phase, they play a critical role for successful service delivery. For the effective involvement of stakeholders, co-design (Sanders & Stappers, 2008) or participatory design principles and methods have been widely used (Macdonald & Teal, 2011; Steen et al., 2011). The participatory approaches are useful for building a shared understanding and eliciting diverse ideas from participants (Steen et al., 2011). Also, co-design can reduce people's resistance to service change in organizations (Lin et al., 2011). The co-design process can be more effective with a variety of design techniques to empower multi-disciplinary team and to facilitate their collaboration (Kaario et al., 2009; Macdonald & Teal, 2011).

Organizational dimensions. Few Service Design research looks into organizational dimensions mainly, investigating what enables or inhibits organizational change. Junginger & Sangiorgi (2009) suggest how Service Design can consciously act as a potential driver for organizational change acting at different levels from the service interface to the organizational values and norms, challenging their fundamental assumptions. Similarly, Pinheiro et al. (2012) report how Service Design can play a transformational role to infuse an innovation culture in organizations when sharing Service Design knowledge and tools with decision makers. On the other hand, Bailey (2012) investigates how Service Design can be embedded within organizations, which leads to sustainable design and delivery of human-centred services.

Findings

This paper has examined Service Design research contributions to NSD studies in the three identified areas: process, objects and facilitators. *On the process*, Service Design research has mainly focused on the design phase, while limited considerations have been made on how this phase can be linked with the development stage. *On the objects*, Service Design research has a strong emphasis on service interactions and other dimensions as prerequisites for improved service experiences. *On the facilitators*, Service Design research has given significant attention to methods and tools and modes of engagement while very limited studies look into the organizational dimensions as a facilitator for NSD.

Linking service design with service development: According to NSD studies, 'how services are designed' and 'how services are implemented' require coordination and alignment (Ponsignon et al., 2011). If the two parts are disconnected, this might result in the generation of service concepts that cannot be actualized in current service delivery system. It implies that current Service Design capabilities should be extended to or reinforced by service operation knowledge. Nonetheless, we have not yet found many studies on how the design phase can be coherently connected to service implementation. As some exceptions, Lin et al. (2011) examined how change management and human-centred principles can better inform and engage people in change processes. Also, Henze et al. (2013) applied human-centered approach to help the networked collaboration for developing Product Service System.

Service interactions and experiences as key object of design. Designers' accumulated competences from other design domains like interaction and experience design provide specialty in deeply understanding people, exploring new design opportunities, and concretizing the solutions. Based on the understanding of users, they shape desirable service experiences to fit with the users' latent needs and desires. On the contrary, despite the endeavour to conceptualize 'service concept', there is limited NSD work providing a methodology for developing it in practice. While NSD studies provide foundational theories associated with the service development process, they rarely discuss concrete instruments to be applied in the real world (Kaner & Karni, 2007). Service Design approaches could contribute to the operational level of the NSD service concept. Service Design entails applying the practical methods and techniques established in the field of Design to the development of services.

Lack of studies and understanding of organizational dimensions: Most of activities in the service design process are mediated and embodied by design tools or techniques. Besides, along with the increasingly emphasized role of service actors as co-creators of values, co-design approach in Service Design is vital. But, most of the design methods and tools are mainly used for the early phase of the whole service development process. Similarly, co-design activities predominantly happen in the design phase (fuzzy front end). According to some critiques pointing out the limitation of the co-design process (Botero & Hyysalo, 2013), after designers leave the project, people are left in the ground without appropriate knowledge or capabilities to manage the services. To overcome this limitation, more sustained and open design strategies to build users' learning, ownership and capabilities are needed (ibid.).

Conclusion

This paper investigated how Service Design studies can be understood relating to NSD knowledge to understand the contribution of Service Design to service innovation. For this, a conceptual research framework based on NSD studies was developed and Service Design

literature was examined in relation to the framework. This helped to clarify the current position of Service Design contributions and uncover what it lacks in the wider context of service research. It is revealed that although Service Design is considered to shift from a narrow description of certain activities (*service design as a phase in NSD*) to a way of service innovation (*Service Design as an approach*), the current Service Design research does not fully reflect this conceptual evolution covering only parts of NSD dimensions.

Given these considerations, the authors propose two possible directions for future Service Design studies: **1) the expansion of 'service design as a phase'**. Given the focus of Service Design processes on the relatively earlier stages of NSD, there is the need for research on how Service Design processes and outcomes can be better linked with and integrated within the development stages of services to enhance more effective implementation. This can require the acquisition of operational knowledge for service delivery to inform feasible service solutions. In practice, there is growing evidences that service designers are working for service implementation, developing new ventures or experimenting with the measurement of Service Design impact that could become object of future studies (Service Design Research UK, 2013); and **2) the application of 'Service Design as an approach'**. Given the interest to embed Service Design thinking within organizations, further research is needed into how current human-centred design methods could be extended and adapted for service system development and delivery, and on how 'designerly' ways of innovating could inform the overall NSD. For example, Bate & Robert (2007b) applied Experience-Based Co-Design (EBCD) approach to organization development (OD), asserting EBCD can offer useful lessons for OD by proposing new value orientations for users and external stakeholders by bringing them to the design process.

As the service research field continuously evolves, a multidisciplinary and collaborative effort to build service knowledge from diverse disciplines including service management, service engineering and Service Design is needed (Fisk & Grove, 2010; Ostrom et al., 2010). For this reason, developing a shared service language is important to connect the different areas of service research (Fisk & Grove, 2010). This paper made an initial step to link isolated silos of Service Design knowledge to the wider field of NSD knowledge and research.

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Conceiving and developing a mainstream consumer service to support older or vulnerable people living independently

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Abstract

The project aimed to explore what potential users would want from an innovative consumer care service platform which helps people live independently, and helps friends and relatives more easily support them. Co-creation methods were used to design a prototype of the service with stakeholders. Existing technologies were repurposed to prototype the service concept, which was tested in-situ with older people and their carers. Results from this initial pilot were positive, with participants finding the service non-intrusive, reassuring, and easy to use. The service is now being developed as a customer proposition and commercialised with business modelling by ADI, support from the charity CarersUK, and a national channel partner, with the intention to roll the service out UK-wide to customers. This paper describes the methods and processes used, and how the holistic service design methodology is proving to be a powerful persuader to help take the service to commercialisation.

KEYWORDS: technology, telecare, assistive technology, co-creation, user engagement, service design

Introduction

Within the United Kingdom, Assisted Living Technologies (ALT) and telecare services have yet to be established as a mainstream consumer option to support people who wish to age in place. Telecare services are made up of “a combination of sensors and other equipment to help people live independently. This is done by monitoring activity changes over time” (Department of Health, 2009, p. 5). Currently, up to 1.7 million people in England are using telecare (and telehealth) services, and this number is growing (Clark & Goodwin, 2010). The majority of these technology users source their products from the NHS and social care, which have traditionally dominated the purchase and supply of ALT in the UK. This has led to a lack of choice of services for older and vulnerable people, driven by public sector

commissioners negotiating block contracts for whole local authorities, rather than tailored purchases for individual users (SCIE, 2009). Also, with increased pressures on local authority budgets, the eligibility criteria for accessing adult social care has increased in many councils. For example, in 2007-08, eligibility in England was set at those with 'Substantial' needs and above by 70% of local authorities, and a further 2% of authorities required a need level of 'Critical' (CSCI, 2009). This has led to a situation where despite statutory services dominating the supply of telecare, 1.5 million people in England have care needs unmet by the state (CSCI, 2008).

It is argued that with the increasing provision of Direct Payments, which individuals can use to spend on technology for their needs as they wish, and the power of the 'Grey Pound' (the over 50s who hold 80% of the UK's personal wealth – ONS, 2012) there is an as yet relatively untapped market for commercially provided consumer care services (Department of Health, 2007; Netten et al., 2005). This market also extends to the 'Sandwich Generation' of adults who are caring for both their children and older parents (Ben-Galim & Silim, 2013). The market is potentially large. In 2008, local authorities spent £177 million on such technologies, in comparison to the £244 million spent by private purchasers (Which? 2009; Ward & Ray, 2011). This level of spend exists in a market where many potential customers are not aware of the services available to them privately (McCreadie et al., 2006), and those who are aware but are put off by the stigmatising design (Richard, et al., 2007; Coughlin et al., 2007). There has been recognition that an increase in commercially available care-based technologies may do well to normalise and destigmatise the use of such products and services, leading to an increased level of private purchasing and self-management of care needs (Ricability, 2009; Ward & Ray, 2011). A representative quantitative survey of people aged 45 and over found that 67% would be willing to self-fund the purchase of products which would enable them to live independently in their own home for longer (provided the price was 'right' – Which? 2009). Some have argued that as statutory services are reduced further, and information and marketing regarding ALT is improved, an increasing number of people will be looking for consumer solutions to manage their care needs (Brownsell et al., 2008).

There is, therefore, a space for innovation which lies between the formal care and response provided by traditional health and social care alerting systems, and the informal support provided by carers and neighbours, who may be unable to access formal support from statutory services, particularly where they are prepared to pay for consumer and private services. The Delivering Assisted Living Lifestyles at Scale (dallas) programme, funded by the Technology Strategy Board (TSB) is a £23 million project which has established four communities (of which the i-Focus project is one) to demonstrate how ALT products and services can be used to promote wellbeing and enable people to live independently, whilst helping to grow the ALT sector and position UK companies to take advantage of increasing consumer demand for such services. Following this, under the dallas i-Focus programme, the Health Design & Technology Institute, on behalf of the Advanced Digital Institute (ADI), worked with key stakeholders (older people, carers of older people, and third sector and industry representatives) to develop the WarmNeighbourhoods® AroundMe™ service, which aims to help older and vulnerable people live at home, whilst helping their friends and family more easily support them.

The AroundMe™ service uses connected home sensor technologies to help support an older or vulnerable person, allowing their friends and family (their 'personal neighbourhood') to be notified if, for example, the temperature in the house gets too low, or if an appliance that would normally be used regularly (such as a kettle) doesn't appear to have been used. It also

sends messages to friends and family to let them know that their loved one is up and OK. This report describes the service design methodology used to develop the AroundMe™ service with potential future customers and key stakeholders, and how a holistic approach incorporating stakeholder involvement, rapid prototyping, and in-situ testing can be used together to develop services which are both of value to the user, and feasible to commercialise at scale. The holistic approach was considered as other authors have identified that “...the greatest challenges of prototyping a service are authenticity and validity. For these issues it is important to consider the larger context of implementation, use, location, as well as the use of real people; thus a holistic approach.” (Bhömer et al., 2013, p. 37). This project is therefore unique in that it brings together a range of service design methodologies in a holistic approach to better understand and provide for the needs of older and vulnerable people. Ethical approval for all aspects of the research was obtained through the Coventry University Ethics approval procedure.

Co-creation and service design blueprinting

Two co-creation workshops were held to explore the user journey throughout potential service touch-points. The objective of the co-creation activities was to enable potential customers, their informal care and support ‘neighbourhoods’ and industry representatives to engage with the AroundMe™ service concept, and provide data to aid the definition and design of the initial service blueprint. The first workshop included potential future customers - older or vulnerable people and people who could make up part of their ‘neighbourhood’ (n=12). The second workshop included industry, charity, and service representatives (n=12). The structure of the workshops was based on a co-creation model, defined by Sanders and Stappers (2008, p. 6) as “any act of collective creativity, i.e. creativity that is shared by two or more people”. Participants in the identified groups engaged in a series of activities including the use of service visualisation, personas, and a metaphorical bus journey to explore and map all stages of the users’ engagement with the future service. This choice of methodology would allow the potential future customers to become ‘co-creators of value’ and develop a user-driven innovative service (Westerlund & Leminen, 2011), by directly informing the development of the service prototype for the later in-situ testing phase, therefore participants were asked to consider both the service journey and the sensor technology which would ultimately make up the service, and how it would be used. As well as being directly asked about potentially useful sensors (after being shown examples), participants were asked to consider what constitutes ‘being OK’, and what information would provide them with reassurance regarding their loved ones. The customer workshop was held prior to the industry workshop so the industry professionals would be able to comment on technical implications of the customer feedback which could impact upon commercial feasibility (Kristensson, 2008).

Photographs of the materials created and outputs produced were taken during the workshop to capture work in action. All materials generated in the workshops were carefully preserved for later analysis. Full annotations were made in situ and the materials produced in the workshops were summarised by the workshop leads and combined with their observations. The data were analysed to inform the initial service design blueprinting of the AroundMe™ service, including what sensors make up the service, and what a typical journey through the service would look like through blueprinting the customer service journey. The results regarding the service blueprint are described below.

Awareness of the service

Participants discussed how potential customers would become aware of such a service. The workshops agreed that if the service were sold via supermarkets and other routinely visited places, then it may become mainstream and familiar, thus increasing the likelihood that consumers and families would opt for such a service. There was also discussion amongst the industry group about how to change people's attitudes to this type of service and to encourage the customers to think of it as 'insurance' or 'just in case' – and this discussion led to the idea of a national campaign similar to the 'Change 4 Life' campaign, which could inform people about what to expect from older age, and when they might start thinking about services like the AroundMe™ service which could provide peace of mind for older people and their families.

Joining the service

The majority of consumer participants wanted to join the service via an online or paper application form. Some participants felt a telephone number to join the service would be useful. There was a concern that not all people would consent to or want to join the service, or be able to decide who was most appropriate to be part of their neighbourhood. It was agreed that the ultimate decision to purchase and use the service must rest with the person whose home it would be installed in. All consumer participants felt that the company providing the service would be well placed to install the equipment. There was an emphasis that the company should be reputable and provide people with identification when they arrive to install the service. It was also argued that having someone to install the equipment was not necessarily needed if the components could be simplified enough to be 'plug and play'.

Using the service

Both consumer and industry participants felt that ambient temperature and electrical appliance monitoring sensors would be the most useful for the intended service and target customers. Participants in the co-creation sessions stressed that the data and information collected from the sensors should be confidential and only shared between agreed persons in the neighbourhood. They felt this aspect of privacy within the neighbourhood and data not being shared with external agencies e.g. a call centre, was what made the service unique, as it would allow people to manage their own care needs within the sphere of their family, without outside interference. With regards to the sensors, participants felt that it would be useful if there was an 'in house' alert, prior to the 'neighbourhood' alert, which would enable the main user to ensure that everything was OK before the wider neighbourhood were contacted. This would enable them to remedy a drop in temperature by turning up the heating, or act as a reminder to make a hot drink in the morning if the service noticed that the main user's kettle had not been used that morning.

Both the consumer and industry groups felt that, although the ambient temperature monitor would be useful, fuel poverty or simply a concern with saving money may cause some customers to ignore a heat sensor message, or to switch the heating off after someone had visited or switched the heating on. The industry group were unable to find a solution to this that would still allow the main user choice and ultimate control over their living environment, and accepted that some older people will indeed be concerned with the cost of energy. Positively, many of the consumer participants felt that if the service could help with awareness of energy efficiency, and therefore reduce costs, then this could appeal to many customers. In terms of receiving the messages, participants identified that people would want

to use the service in a variety of ways, with different people using different sensors and message algorithms. It was felt that younger relatives or members of the ‘neighbourhood’ would be more interested in receiving messages via SMS, with older relatives and neighbours preferring a telephone call which would provide an automated message. The simplicity of wanting an SMS or telephone call surprised some of the industry participants who felt there could be more innovative ways to use technology for alerting the neighbourhood, for example, via an iPad. However, other industry participants agreed with the consumers that the messaging service should be kept simple to avoid confusing people or delaying responses.

Leaving the service

Consumer participants were also asked to consider how they would want to leave the service. From this it was suggested that there must be an easy way to opt-out, especially if the main user was suddenly hospitalised, had moved into residential care, or had died. Most consumers felt a rolling contract was suitable, with customers being able to cancel the contact at a month’s notice. It was also discussed how the company would get their equipment back, once a ‘neighbourhood’ had left the service, and it was suggested that it could be returned via the post. There was a view that the equipment should be recycled where possible, however, the industry participants were mindful that recycling equipment may not be cost effective, although a desirable aim.

Testing the prototype service design in situ

Following the results of the co-creation session, an iterative approach was adopted, with the co-creation results directly informing the in situ testing phase. The AroundMe™ service design was blueprinted, and existing home sensor technologies for the pilot service were chosen (an ambient temperature sensor, an electrical appliance monitor, and drawer/cupboard contacts) to provide a rapid prototype of the service. Although not the ideal final technical solution (e.g. the equipment was not at this stage simple enough for a plug and play set up), it allowed the quick prototyping of the service blueprint and was sufficient to trial the customers perceptions and perceived value of the service experience. The in situ testing was considered vital to follow from the prototype development, as the full value of a service cannot be determined by stakeholders until the “value in use” has been assessed (Kristensson, 2008, p. 482). The in situ testing aimed to explore how the connected home sensor technologies could help support an older or vulnerable person, by allowing their relatives or friends to be notified via an SMS text message if:

- » The temperature in the house gets too low – to alert friends and relatives to a drop in temperature that could leave the older or vulnerable person at risk of hypothermia, or other health conditions associated with a drop in temperature;
- » An appliance that would normally be used regularly (such as a kettle) doesn’t appear to have been used;
- » An appliance that would normally be used regularly *has* been used – to provide friends and relatives with reassurance that their loved one is indeed up and about and OK;
- » A door or drawer that would normally be opened each morning with regularity has or has not been used (e.g. a bathroom door, or the cutlery drawer), thus indicating the likelihood of whether or not a person has eaten;
- » A base unit to send data via GPRS to a cloud based server. The base unit would also sound ‘in house’ alerts regarding low temperatures or lack of activity, to allow the main

user to remedy this before an SMS text message is sent to their neighbourhood, causing unnecessary worry.

Temperature was monitored throughout the day. Use of appliances and doors and drawers was monitored during specified times, chosen by the user and their families after discussions about their day to day routines.

Participants were recruited through a range of organisations across Coventry and the West Midlands, including local older peoples' and carers' charities, libraries, and housing associations. A flyer and participant information sheet were sent to the organisations to pass onto their relevant contacts. Interested potential participants were asked to contact the researchers directly to express their interest in taking part. The researchers then spoke to the participants and answered any questions they had. Once participants confirmed that all potential members in their 'personal neighbourhood' were happy to take part, a researcher visited the main user in their home, gained informed consent from all parties, and discussed the best placement of the technology with their user and their neighbourhood. The final trial consisted of 12 'neighbourhoods' (a neighbourhood consisted of the main customer or user, and their friends and family who wished to receive messages about the sensors) which included a total of 33 participants – 14 main users who had the service installed in their home (two neighbourhoods comprised of older couples as the main customers) and 19 friends and relatives. Three neighbourhoods included users with dementia. The age of the main users ranged from 55 to 85 years. Participants were asked to trial the service for a minimum of 12 weeks. Interviews took place at mid-point and end-point. A primarily qualitative approach was taken to explore the experiences of those trialling the service through the use of face to face and telephone interviews and an event diary. The interviews were transcribed, and with the event diaries, analysed using Long Table Analysis (Krueger & Cassey, 2000).

Results from in-situ service testing

The results from the in-situ testing were overwhelmingly positive. The pilot service promoted greater understanding, awareness, reassurance, and involvement between the personal networked neighbourhoods, and participants liked the focus on positive well-being, and reassuring activity messages:

"It's a non-intrusive comfort." (Heather, User)

"It's just a positive message isn't it?" (Phyllis, User)

Overall, participants showed little concern regarding the AroundMe™ service, and felt that this was because the sensors and alerts were appropriate ways of communicating wellbeing within a family, without being too intrusive. Participants thought that the introduction of other sensors, for example, cameras, would however cause concern:

"Initially I didn't know whether it would bother me, but it doesn't at all. Certainly if there was any camera work going on that would bother me. I would feel like I would have to dress instead of lounging around in a dressing gown ...and full make up, but no it's perfect, absolutely perfect ...I was telling somebody about it and they said 'Well don't you feel it's a bit Big Brother?' I said 'No, not at all, and they can't see you.'" (Wendy, User)

It was found that the service increased awareness amongst the family of the main user's wellbeing, and allowed them to share caring duties and responsibilities within the family:

"I think it makes me much more aware of when [my father] is having good days and bad days."
(George, Carer)

"I think we are far more focused now aren't we? Even at the weekend, I mean at the moment we are far more focused about mum, still needs to get up to have her breakfast, and then Gary is doing the Saturdays and I'm doing the Sundays to make sure she is eating, so yes I think it has, it has helped us to focus hasn't it?" (Susan, Carer)

Other neighbourhoods felt an increased sense of independence for all parties, both users and carers:

"It gives me a bit more freedom as well." (Karen, Carer)

"I don't like to feel suffocated if you like, that they are always 'Are you OK? Is everything alright?' That sort of a way, I can't stand that. But [with] this, I am doing it myself if you like, with the machine and then sending to George – 'Yes everything is alright', so I think it is probably a relief for him too." (Phyllis, User)

The service did not reduce contact within the neighbourhoods (a frequently cited concern of some when considering the use of technology services to manage care needs). Conversely, for most of the neighbourhoods, social contact increased, as the daily text messages acted as reminders for the responders and carers to make contact with their loved ones:

"It works very well, because what normally happens is [I receive a message], and I pick up the phone and talk to Alice, because it reminds me that it's time to talk to you and check that you're OK ...It prompts me because I'm not too good in the morning." (Dawn, Carer)

On the whole, the system had little effect on the users' activities of daily living, who were able to 'carry on as usual', with the sensors picking up their activity in the background. The system did however increase the confidence with which the users carried out their routines, and for some, acted as a prompt to complete their daily activities in the morning, whether this was a prompt direct from the base unit to the user, or a prompt from a Carer receiving a 'no activity' message:

"Funnily enough I would say yes it has [increased my confidence]. It's just that quiet knowledge that you know, if the worst does happen, sooner or later somebody will know." (Heather, User)

"It means I know if he hasn't had any lunch, so I can give him a call and say, 'Dad, come on, actually have something to eat'. So and of course, when he is, when he does come out and do things I think 'OK, yeah, I know he's about and round and doing stuff', so I'm a bit more relaxed." (Sean, Carer)

The only area where the users felt the service impacted on their lives was at the weekend. It was felt by some that a more flexible technology would allow them to change their routine at the weekend, for example, to have a lie in without worrying about their neighbourhoods receiving an 'inactive' message.

Participants liked the set up and installation of the service (and found the telephone helpline useful where necessary), however all participants stated they would have preferred the option of a self-installation service which would utilise 'plug and play' style equipment. Indeed, there were some issues regarding installation and set up, with some participants requiring 'post-

installation' tweaking to fully customise the system to their own lifestyles and housing set-up, for example, repositioning the temperature sensor so it was not placed in a draft. In some cases this required an engineer making an extra visit to the home, causing a delay to the trial customers being able to fully use the service:

"We were putting that [temperature sensor] right in that corner, and it kept saying, a couple of times it said 'Your heating is too low' ...But I wouldn't have thought it was 16 or whatever it was over there... There must have been a draft." (Mildred, User)

Participants disliked the impersonal nature of the messaging, as they found they lacked clarity, with a number of participants not immediately associating a message saying "Your friend is not active today" with the AroundMe™ service. Some participants were initially concerned this was a scam message:

"If it were possible to either, at the beginning, either to sort of say, right, programme this number into your phone so you know what it is and if possible, maybe give the, rather than a friend, give an identifying ...relationship, mother, father, daughter, or even a name if that were possible." (Lois, Carer)

There was concern that the service could be confusing for some, particularly those with dementia. Carers of participants with dementia indeed described how the base unit in particular had caused some confusion:

"The other thing she was telling me last night, this is my mother again, she said 'I've spotted those lights in there so I've switched them off' [the lights on the base unit]. I said 'You mustn't do that', so I've got to tape up the plug ...Which we have to do with things because she loves switching things off at the socket if she gets the chance." (Frank, Carer)

Despite some glitches in the technology, and concerns that the service could be a confusing one for those with cognitive impairments, overall the participants were very pleased with the service, and wished to continue using it beyond the trial. Interestingly, even participants who did not have any specific worries prior to taking part in the trial (who could be considered 'early adopters') saw the value of the service during their experience:

"No I didn't [have any prior worries], which is odd because she is 82, so... one would think 'well, what if she falls?' ...It really took her to be ill for me to think, actually this is a really good idea... it's changed my mind... I have now found that I'm waiting for that text message at eleven o'clock ...So it's become a lot more relevant to me (Lorraine, Carer)

With regards the future development, participants felt the option of additional sensors, and a website to monitor patterns could be useful add-ons, however only if they did not increase the cost of the service:

"I think generally people would like to be able to not necessarily see absolutely everything, but to be able to have some useful sort of intelligence about it, and obviously not have a whole heap of data that they have to read through to be able to decipher... Somebody needs to do some work on what the right reports are that people would find useful." (George, Carer)

Discussion

The development of the AroundMe™ service using existing repurposed technology allowed testing without commitment to a final technology solution and enabled quick prototyping and testing of the service in situ with customers. The service design methodologies chosen supported the centrality of users and future potential customers of services as the knowledge base, and the importance of understanding the value of the service from the customers' viewpoint. This led to a swift understanding of whether the service concept worked outside of a traditional research setting, without committing to expensive, unsuitable technology, and led to a successful service design which is fit for purpose and meets the needs of its future customers. The positive results elicited from the in-situ testing are likely to have arisen from adopting co-creation and living lab methodologies – by involving potential future customers early in the development of the service we have developed a usable, effective and desirable service which is innovative in that it can support low-level care needs outside of traditional statutory provision. The project also demonstrates the potential fruitfulness of using service design methodology to develop existing technologies into better designed services to meet current and future user needs, rather than focusing time and effort on costly bespoke technology development. The next phase of the research will be to scale up the service offering for testing with 1000 users across the wider UK context. Whilst the previous winter trial with 33 users from the West Midlands proved successful, it is important to assess whether the service designed works outside of the local context in which it was generated (Wolfgang et al., 2009). This gradual scaling up allows the testing of value at various levels of scale, thus reducing the risk of a service not of value to a larger context.

In conclusion, by including a range of stakeholders, including end-user and industry representatives throughout the co-creation phases, and by adopting an iterative attitude to the research and service development, we are ever closer to the completion of the aim – to develop a scalable commercial service. The end report detailing the results of the in situ testing is proving to be a powerful persuader to take the service to commercialisation. Indeed, the service is now being developed as a customer installation proposition and commercialised with business modelling by ADI, support from the national charity CarersUK, and a national channel partner, with the intention to roll the service out UK-wide to customers. It is hoped that other organisations can learn from the holistic approach adopted within this project and further help to improve the choice and quality of services for older and vulnerable people who are looking for consumer solutions to manage their care needs in an environment of dwindling state support.

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Challenges in Designing and Scaling-up Community Services

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Abstract

This paper is based on two EU funded projects: one recently completed, Life 2.0 and an on-going project, MyNeighborhood (MyN). The former was aimed at creating location based and socially networked services to support elderly people independent life. The latter is developing a platform to activate hidden or latent resources in neighbourhoods. Both the projects are based on the activities in four pilot locations. They are an application of service design to the public sector that provide interesting insights about designing and scaling up highly localised and personalised services and platforms of services. Both projects are highly related to a real life context for senior people (Life 2.0) and people with brain injury and their assistants (MyN). Several analogies could be found, between the existing generation of social networking platforms and the services proposed in these projects, however several important differences can also be found, that challenge the way those platforms should be designed and scaled up in different contexts. Being at a more advanced stage, the Life 2.0 project obviously provided more insights, whereas MyN gives an opportunity to verify the hypotheses coming from Life 2.0. This paper analyses the lesson learned from the work undertaken so far and proposes criteria and hypotheses for the diffusion of this kind of services.

KEYWORDS: Community services, scaling-up, service design

Introduction

Social and health services in the public sector are undergoing a deep review in the way existing and emerging needs should be addressed. The unbalance between active and passive population, caused by broad socio-economic phenomena, is imposing a new approach to public services. Furthermore information and knowledge are raising people expectations for a greater control and far more choices in their life. The traditional universal approach to public services revealed its own limits, both in terms of efficiency and equity. One of the main focuses of the new approach is on personalisation. The new services will need to focus more on personal needs, by empowering citizens to shape the services around them ("Building on progress: Public services. HM Government Policy Review," 2007).

One of the most critical areas for government and public institutions is the assistance to senior and disabled people. A proportionally larger number of elderly people is going to

require a bigger amount of resources, but the present economic crisis, summed up to the factors mentioned above is urging governments to consider a new approach to welfare states. (Esping-Andersen, 1996, 2002). A new approach to public intervention in this area focuses on the activation of the residual capabilities of this population within close communities of friends and neighbourhoods.

This methodological approach has been used in the Life 2.0 and MyN projects to develop online platforms to support social interaction, thus facilitating the exchange of knowledge and favours, supporting the organisation of individual and group initiatives and even individual entrepreneurship. The experience arising from those projects however, suggests an interesting challenge that possibly concerns several other local service solutions based on based on participation and value co-creations

The economic sustainability of such localised services requires a new approach to scalability, so that the knowledge and resources used in an individual instance of the service can also be replicated in other contexts or for other communities. The need for personalisation and the strong link to the local context makes the common idea of a wild fire diffusion of the service totally inadequate. One can no longer expect those services to increase the number of users from a small community to millions of users, as it happened for other social networking applications, which were geographically independent. The considerations about the possible scalability of such service suggest interesting insights on alternative scalability strategies.

The Life 2.0 project

The Life 2.0 project is a EU-funded project that is part of a portfolio of initiatives to promote Smart Cities. The project started in 2010, with a consortium including universities, companies and public administrations, with the purpose of generating a platform of location based and social networking services that could support elderly people between 65 and 75 years old in maintaining a good level of independence in their daily life.

Life 2.0 has been taken up in four different pilots in Aalborg (Denmark), Joensuu (Finland), Barcelona (Spain) and Milano (Italy). In each of those locations a group of 30 to 40 elderly people has been involved in the co-development and testing of a platform of online services.

Life stories suggested by elderly people inspired some concepts that were tested by the same people and developed into an online tool. Elderly people continuously provided feedback and suggestions about new services or new ways of organising the platform. This co-creation process reinforced users' sense of ownership, besides creating strong social and human links.

In two cases (Aalborg and Barcelona) the project has been associated to an existing community: a training centre in Aalborg and association of volunteers in Barcelona. In those cases, the use of the platform reinforced pre-existing social links, by adding a new information layer. In Joensuu and Milano, people did not have any previous aggregation point, therefore a community has been "created" around the local library, with the help of existing organisations operating in the area. The platform was therefore used to create social aggregation that was reinforced by periodic personal meetings.

What is Life 2.0?

The Life 2.0 platform is the playground for a series of activities and exchanges of knowledge, information and help between elderly, local associations/organisations, and local businesses. The platform includes three main components:

- » Announcements: here people can offer or request help to others. The nature of such help is usually very different: it could range from real help to solve IT problems to the proposal to walk together to the church or the supermarket and so forth.
- » Events: here local organisations (the local church, activity centres, associations and clubs) can post announcements of initiatives and events in the neighbourhood
- » Marketplace: here local businesses can post ads or even services, such as special menu of the day, special offer of the week, to elderly people in the area.

The access to the platform is strictly regulated in each location, by a local Community Provider that only accepts users if they are personally or directly known, to trust in the community. The administrator can be a person from an activity centre of an association.

Some organisations are posting relevant events and some businesses (e.g. local foot massage, local supermarket or a national producer of aids products) are posting ads (but not yet personalized offerings) on the platform.

Characteristics of the Life 2.0 system

The main feature of the project is the strong link between online presence and direct and personal contact between the users. The Life 2.0 platform has never been proposed as an alternative to personal contact. Users were well aware of the existence of social networking platforms, such as Facebook, and in a few cases they also had a profile in some social networks. However users considered those platforms quite impersonal unsafe and irrelevant, because they are open, they refer to very broad contexts, beyond the geographically perceivable limits of their everyday life, and because those networks link unknown or unfamiliar people.

Life 2.0 services help people organising a walk to the local supermarket, solving practical problems, organising parties and supporting seniors in many other practical functions. This means that the platform is complementary, rather than alternative to real life. The platform makes the condition possible, for an augmented neighbourhood, in which the increased knowledge about what is going on in the area is giving more opportunities to solve practical problems, and to reinforce social cohesion.

User requirement for strong mechanisms of trust, and consequently the presence of a community administrator is at the same time a positive and negative feature of the system. Indeed it encourages elderly peoples' participation, but, at the same time it limits the number of members of a community to the number of people that are personally known by the administrator. This feature has been critical when shaping the scalability and business model.

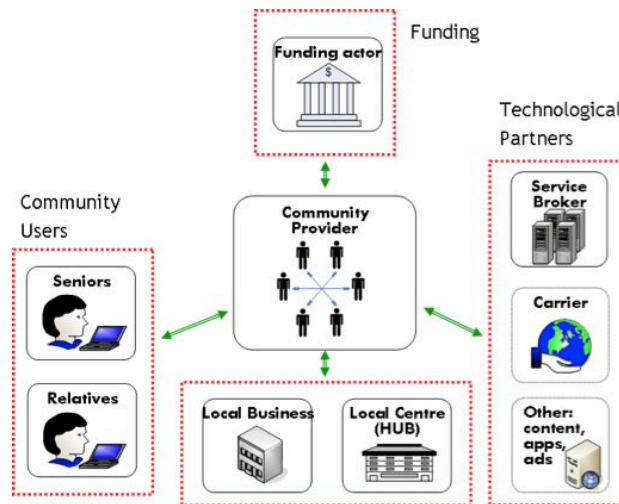


Figure 1 the Life 2.0 ecosystem (Source Life 2.0)

The Life 2.0 ecosystem

The Life 2.0 business model is based on a modular structure (Figure 1).

The modularisation is based on capabilities, knowledge and skills. Each module describes an actor type in the system and its role. Each actor contributes to the system with knowledge of different nature and by adding different value (Table 1). Here below the modules and their characteristics are described.

Actor	Type of knowledge	Value added
User	Personal/tacit	Attention / content
Community provider	Social/aggregative	Aggregation
Hub/association	Content related	Events / content
Technical broker	Technical	Technical solutions
Local businesses	Service/market related	Personal/locally relevant market offers / money
Funder	Connective	Trust/financial support

Table 1. Life 2.0 roles, knowledge and value added

Users are typically elderly people living in the area, but this category of user(s) can also include relatives (children, grandchildren) or friends, of elderly people. Users are not supposed to pay to access the platform, but of course they should pay for accessing the services offered on the platform by local business (e.g. restaurant, training, etc). Elderly people provide personal, un-codified knowledge, concerning social links, events, initiatives and geographically located information. The relevance of this knowledge is often local, that means that the value they can add to the platform is also strongly related to their location.

The **community providers** are organisations (e.g. seniors' associations, local interest groups) or public entities (such local municipalities), that aggregate a number of senior citizens, thus becoming the tangible reference for the users of the Life 2.0 platform. Community providers

usually have a physical location, where events or gathering are organised. They are the gatekeeper to the platform, as they moderate, promote and ensure trust among the users. They have the critical social knowledge that would allow the network to be formed and to grow. The personnel in this organisation, has personal and direct knowledge of all the members of the network and can moderate and encourage the participation in the activities on the platform. They provide value by aggregating people. Without this activity, the mere existence of an IT platform for exchanging information would not have too many chances of success amongst elderly people.

Event Organisers, or Hubs are the organisations around which the local everyday life of elderly people is usually based. Hubs include local associations, training centres, sport clubs and churches. Most of the hubs are not supposed to pay to access the platform. Likewise community providers, hubs aggregate people. They have a good social understanding of the local area and interpret their need for entertaining, spiritual, sport or social activities. Their knowledge is usually highly localised, although some events may have a wider relevance and connect different communities. They add real value by providing content on public events or initiatives for a larger number of users.

Local businesses included in the platform are usually small commercial activities that users already know personally, such as foot massage, local supermarket or restaurants. Online services offered by those businesses can supplement personal services. However some of those businesses may have wider target group and therefore be interested in participating in a system that is broader than a single community. Local businesses provide content to the platform in form of codified knowledge, technical skills and specialized services to elderly people. They add value to the platform in form of real personalised services for citizens, ads and access fees.

Technical brokers are the actors that will install the platform at the local level and ensure a constant technical support to community providers. In some instances technical brokers may be the *owners* of the platform and promote it to local communities. They have the technical knowledge needed to run the platform. This knowledge is complementary to the social knowledge provided by community providers. Alongside technical support, they may add value by developing new applications for the platform.

Due to the initial installation costs, and constant personnel costs, the Life 2.0 platform may need to be supported by a **funding organization**, that could either be a public or private institution. In some instances this role could be covered by public administrations, which often have the knowledge and skills to set up new communities. Furthermore their back up to a community provider may ensure trust among the users.

My Neighbourhood

The MyNproject started in January 2013 as an initiative of a consortium of 19 partners, funded by the EU ICT-PSP funding scheme. The aim of the project is to generate a platform of services to support social innovation and aggregation initiatives in local areas. Likewise Life 2.0, MyN is being currently developed in living labs, with a strong collaboration of users in the process of co-creation of solutions. The Living Labs focus on specific aspects of neighbourhood life. This section will focus on the Danish Living Lab, because of its analogies with the Life 2.0 project. The user group involved in this Living Lab includes citizens living in a municipal centre that supports people recovering from brain injuries. They are able to live almost independently, but they need assistance in some daily functions and,

above all, they need constant social contacts, which include a small help in some everyday situation. Some of them, for example may need help expressing him/her-selves, or need support when shopping.

The project team worked on several scenarios to make sure that knowledge and resources available in the neighbourhood could be used to improve the quality of social aspects in the life of those citizens, without using professional resources (social assistants or occupational therapists), which could be instead used to support functional needs. The scenarios are now generating indications for a technical platform that should support the aggregation of social resources around those people, such as neighbours, volunteers, relatives of other citizens with similar problems and students.

Service Ideas

Together with the stakeholder groups, the design team identified a number of possible services. The most relevant are:

- » Social visit
- » Companion friend
- » Voluntary bus service
- » Cultural/Shopping assistant

The scenario (below) illustrates one of the service ideas.

Scenario: Social visit service

The idea in this scenario is that volunteers or students¹ visit citizens with disabilities in their home for social interaction and informal caregiving (e.g. for playing cards, ICT training, discussing interests, going for a walk). The service also gives free time to the spouse of the disable citizen.

Both the disabled citizen and volunteer can register via an online platform. The citizen (or a community staff acting on their behalf) can define his or her own needs while the volunteer can define what type of help she/he can offer. A coordinator meets both parties, to get a better understanding of them and their needs.

The coordinator meets the volunteer and matches up volunteers and citizens, organising and mediating a first meeting with the disabled.

Citizens, voluntaries and gatekeepers

The configuration of the MyNeighborhood service in Denmark is based on some key assumptions:

1. The main actors in the platform are people with some sort of disability (sometimes invisible, like aphasia). Even though they are mostly independent in their daily life, their disability puts them in the weak position of asking for help to people (voluntary, students) they do not know.

¹ The students involved in this project come from occupational therapy or similar studies. Their participation in the platform can be recorded and give credits as learning activity.

2. Voluntary associations already exist and are well organised in Denmark, but the condition for them to cooperate with professional workers in this field is that they do not provide help that could jeopardise professional workers' jobs and would not guarantee the same professional quality.

3. Even though volunteers are covering non-professional aspects of citizens' life, professional workers have daily and institutional contacts with the citizens and can guarantee that the resources are appropriately used. They can therefore work as gatekeeper(s) for the system to build mutual trust between citizens and the voluntary resources.

Discussion

The projects presented in this paper are part of a new generation of services based on highly localised social networks. The most diffuse social networks (Facebook, Twitter, for example) are geographically independent. They have been developed to link people regardless their geographical location. Participants in existing networks were linked by logical links. Only some recent initiatives (e.g. www.socialstreet.it) are turning those applications into a platform to interact at the local level. Another shared characteristic of the projects mentioned is the very personal, almost intimate, dimension of the links they create, which requires special conditions that address trust and privacy issues.

The empirical work in the living labs emphasised that the acceptance of those initiatives depends on two factors: **relevance** and **trust**. Such factors heavily influence scale-up strategies. The considerations in the following sections are based on empirical observation. In many cases what has been observed confirms the theoretical frames in which relevance and trust in online environments have been studied; however in the economy of this paper such frames will not be thoroughly discussed.

Relevance

The platforms presented in this paper are addressing aspects of social life in local areas. They do not (necessarily) include functional content that would force users to use the platform. Alternatively, the social content created in the platform is not meant to replace, but rather complement the daily life of the participants. For those reasons, it is critical that the content proposed be valuable and relevant for the members.

In this platform as in any online environments an enormous amount of information available is not necessarily absorbed and used in everyday life. The information is indeed filtered by users' attention. The LIFE 2.0 platform can also be viewed as the marketplace in which information-based service offers will meet users' attention. Relevance will be the main catalyst for user attention. As for many other online platforms, attention is the internal currency in the exchange of information (Davenport & Beck, 2001).

Not only will the services need to have high and personal relevance for users, but also the platform itself. This is the reason why the content of the platform cannot just have a functional and commercial character (e.g. services to elderly people); but it has to include content related to seniors' social life, that cannot be easily quantified in economic terms. In essence, the elderly will pay particular attention to what is relevant for their everyday life. Of course their direct participation to the definition of the content (in form of calls for participation, recommendations, help offering and even service offering to their neighbours) will increase the attention resources spent on the platform. This participation also depends

on the possibility to link online contents to the real life. Elderly people's chances to be directly involved in each activity will be a filter for the offerings on the LIFE 2.0 platform. At the same time the content they generate will widen the window of attention for other services offered in the platform.

Relevance is also critical to the MyN platform, in relation to the way the profile of disabled citizens matches the competences and the interest of voluntaries, and vice versa.

Geographical contiguity is crucial to determine relevance on this platform, because of the possibility that online contact could eventuate in an offline meeting.

To summarise, the need for the platform to include relevant content refers to the life context of the participants. In order to be successful and to attract a reasonable number of users, the platform has to ensure a strong link to a specific physical environment.

Trust

Trust is linked to the number of users connected to the platform, their social proximity, personal acquaintance and geographical location. The literature on trust in online environment is quite large and focused on different aspects, from knowledge sharing (Hsu, Ju, Yen, & Chang, 2007) to empathy (Jinjuan Fenga, &, & Preece, 2004) and to overlaps between online and offline networks in emerging adults (Subrahmanyam, Reich, Waechter, & Espinoza, 2008), however the specific case of trust-building for elderly or disabled people (or for groups that have been often excluded from online services) has hardly been considered. Strategies to build trust through reputation and rating system, very common in other social networks, are not always possible in local and personal networks. When asked about their opinion about rating mutual help or social meetings, members expressed their fear to judge or be judged by people they know very well. Different mechanisms must be used, thus ensuring trust in the platform.

Given the strong link of the platform to the local context, trust can be achieved by making sure that the online presence is parallel and overlapping with the real interaction between people in a particular neighborhood. Trust is also ensured by the presence of an administrator, or a centre, where the participants are known and can be identified by a person. This person is also mediating between users, in order to avoid personal or direct conflict(s).

This means that the expansion of the model cannot be wide and seamless, but has to progress by "circles" or communities (Figure 2). Each community will guarantee trustworthy interaction to its users. When the online community becomes larger than the number of people the administrator knows personally, no new users can be added, unless another community or another "centre" is set up, with a new community provider. Of course there could be some overlapping between two different communities, but the participation of a user to more than one community has to be mediated by the administrator(s).

Both the parameters illustrated above, relevance and trust, suggest that the strategies to scale up highly localised and personalised service platforms cannot be based on a *wild fire* expansion. It is not the number of users that should expand to scale-up the platform, but the number of communities.

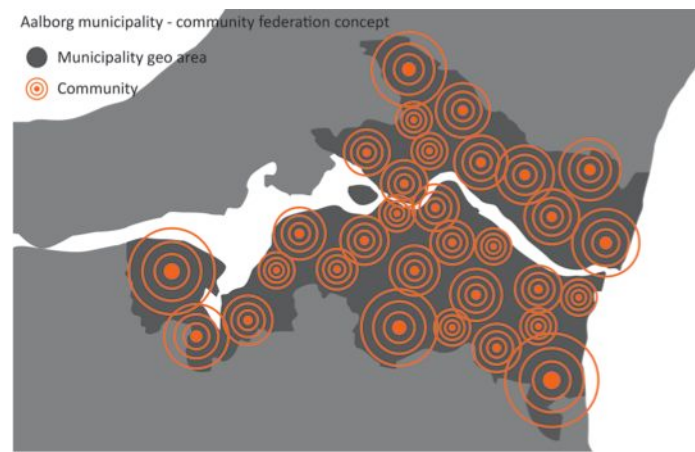


Figure 2. Diffusion model for Life 2.0 for the Aalborg Pilot

Discussion: scale-up models

The findings of the Life 2.0 project, which has been developed up to a pre-production phase, offer interesting insights that can also be extended MyN and other platforms.

The description of the ecosystem and its actors clearly shows a direct and tight link between the online and the offline community. In this *hybrid* social network logical, geographical and personal relationships are equally relevant. Each instance of the platform is anchored to a real context, because the information it includes is also local and very personal to its users. However, not all the actors are necessarily focusing on the same geographical context. Local businesses or hubs, for instance, may find a single community too limited and would not consider accessing to the platform, unless they have access to multiple communities. The setting of municipal services supporting both the Life 2.0 and MyN platform also refer to wider contexts. The need for relevance and trust however, would make a wild fire development of the platform unthinkable. The local community cannot exceed the number of people the administrator knows personally. Citizens explicitly declared that the advantage of this platform, with respect to other open social networking applications, is the fact that its access is limited and controlled.

Unlike other online social networking applications, those platforms can only expand if new ecosystems are replicated in different local context(s). The community provider is the catalyst and the gatekeeper for each ecosystem. Local business, or technical providers may take part to more than one community, as they need to reach larger group of users. Those actors are still working to scale up their services, whereas other actors are working to *defend the borders* of the community. The two logics however, are not competing, it is argued that they are complementary: a strong community, with a strong participation, will increase users' attention, and therefore give more value to each post, or paid service offered by the business companies in the platform. Alternatively, technical providers, local administrations or local businesses taking part to a community could act as *bridge users* of the platform, linking different communities.

The question of new models for scaling up similar cases for social innovation is quite new to established literature. Many authors have focused on social networks' potential to generate social innovation (Leadbeater, 2008; Tapscott & Williams, 2006), but they did not propose any broad reflection on a model to scale up innovation generated by social networks. They assume that the diffusion of new applications will follow a logic of wild fire expansion. Relevance and trust have been considered also critical for the diffusion of social networks,

however the link to the geographical location has never been considered as a binding condition for scaling up, but rather an outcome of a specific approach to the use of such applications.

The question of scalability has been analysed from a technical perspective, Pujol et al. (Pujol, Siganos, Rodriguez, & Erramilli, 2009), for instance, focus on strategies that replicate *bridge users* to scale up fully distributed systems. Although this approach focuses on the technical organisation of online social networks, without any reference to the social characteristics of its users, the exploration of the parallel development of scaling up strategies for fully distributed ICT systems and *hybrid* social networks, such as Life 2.0 or MyN, could provide interesting insight.

Conclusion

The dynamic proposed by the projects presented in this paper and their model of expansion is challenging the existing scale-up logic.

The existing model is based on the most known examples of diffusion of applications, such as Facebook, or Twitter. Those applications are relying on logical links between participants, but are basically geographically independent, although the geographical proximity of the participants was an obvious reason for establishing new friendships on those networks.

The model proposed in this paper instead, is deeply rooted in a particular geographical context. The social links often exist before the creation of the application and the application is usually *augmenting* the existing links, adding a new layer of information. The two fundamental parameters for the creation of such network do not hinder scaling up, but impose a new mechanism of expansion.

Scaling up those platforms is not an obvious exercise, because it requires that the ecosystem be appropriately structured that clearly defines roles and competences of each actor. Of course the projects presented represent a limited range of cases, but the conditions they refer to is common to many other cases in which services, especially public services, are designed for specific local contexts. The time is coming for a radical rethinking the way public and private services to those citizens should be planned, and the projects presented in this paper proposes some critical reflections on how this can be done.

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- » My Neighbourhood | My City (Contract Number ICT-PSP 325227) my-neighbourhood.eu

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A design-led complex intervention for the stroke rehabilitation service

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Abstract

This paper discusses findings from the introduction and integration of design-led qualitative, research methods into the overall scientific methodology for the design and evaluation of a ‘complex intervention’ through a set of pilot random control trials (RCTs). A set of visualisation tools was co-developed with stakeholders to enhance patient-therapist interaction in the context of the stroke rehabilitation setting. The participative approach recognised the importance of mobilising lay knowledge and experience to drive innovation in the tools whose use helped reduce the ‘social distance’ between therapist, patient and clinical biomechanist. The visualisations aided understanding for patients, enhanced communication between patient and therapist, and provided an objective tool for therapists to monitor progress and communicate this to patients. The implications for service improvement and redesign resulting from involving designers in pilot RCT design are discussed.

KEYWORDS: RCT, physical rehabilitation, complex intervention, design approaches, visualisation

Introduction

This case study describes how design-led qualitative approaches were introduced and integrated into the overall scientific methodology for the design and evaluation of a ‘complex intervention’ through a set of pilot random control trials (RCTs) designed to understand how the use of an innovative visualisation method (Envisage, 2013) might offer improved physical rehabilitation therapy for patients following stroke. It discusses the rationale, methods, findings and implications for future involvement of designers in healthcare and service improvement and redesign, and for research in the field.

Stroke and rehabilitation

Stroke, a 'brain attack' caused either by a blockage (ischaemia) and/or a bleed (haemorrhage) in or around the brain, is a life-changing occurrence affecting c. 152,000 people each year in the UK. The effects of stroke vary between individuals due to the complex nature of a brain injury but common outcomes are: weakness or paralysis on one side of the body; loss of sensation on one side; difficulties in speaking or understanding; vision problems; and cognitive problems. The effects can be temporary or permanent, depending on the severity of stroke, and a period of personalised rehabilitation is required to address the particular needs of the stroke patient. Physical rehabilitation following stroke focuses on relearning control and coordination of movements affected by damage to areas of the brain, and on ways to cope with everyday activities to compensate for losses in function.

Overcoming presentation issues with biomechanical information

For many physical rehabilitation issues a biomechanical understanding (i.e. in a living body, of the forces exerted during dynamic movement by muscles and gravity) of the problem and its solution is essential. Both patients' understanding of their treatment and the effective communication with their clinicians have been identified to have a positive impact on their compliance, leading to a better chance of improved treatment outcomes. However, despite more than three decades of developments in the field, the potential for biomechanics to fully influence rehabilitation practice has remained under-exploited. This is due to the problematic nature of communicating complex biomechanical data and analyses to other disciplines and to lay people, essentially due to the inaccessible formats of presentation of this kind of data, i.e. in graphs and charts unusable by non-biomechanics specialists or by lay people.

RCTs and complex interventions

This paper discusses how design methods and approaches were incorporated into the design of a complex intervention evaluated within a set of pilot RCTs. An RCT is the 'gold standard' for a clinical trial, often used to test the efficacy of a medical intervention within a patient population. The Medical Research Council (MRC) framework categorises an intervention as complex if this involves: i) an intervention in individual patient care; ii) modifications to the service for the patient; and iii) will also provide an educational intervention and decision aid for health professionals (MRC, 2000; Craig et al., 2008). Clinical metrics for RCTs are usually quantitative, however Lewin et al. (2009) discuss the limitations of these methods:

Complex healthcare interventions involve social processes that can be difficult to explore using quantitative methods alone." "Qualitative research can support the design of interventions and improve understanding of the mechanisms and effects of complex healthcare interventions". "Most of the qualitative studies were carried out before or during the trials with few studies used to explain trial results. (Lewin et al. 2009, p. 732)

Qualitative research within an RCT is still relatively uncommon and the examples published to date have been poorly integrated into RCTs (Lewin et al., 2009).

The physical rehabilitation setting: contrasting concerns

There is a need to consider the needs of each of the three different stakeholders in the stroke rehabilitation setting, i.e. clinical biomechanist, therapist and patient (although 'carer' is a

further category outside the scope of this immediate study). Viewed from a biomechanist's perspective, a rehabilitation session is about gaining a detailed understanding of the dynamic forces exerted by the patient's muscles and gravity during movement as a means to improving the quality of treatment, and ultimately the healthcare outcome. The therapist is concerned with assisting the patient in a programme of movement exercises which help in the 'neuroplastic' reshaping of the brain's functions, damaged by the stroke. The patient is concerned with recovering, to as great an extent as possible, their 'normal (i.e. former) self'. Consequently, this rehabilitation setting becomes a theatre for intensively social and emotional processes involving physical contact and a two-way process, between the therapist and patient, of communication and understanding (whether poor or clear), of what movements should be made (and why), and in perceiving - through objective measurement - of progress (or lack of) being achieved. During this the patient experiences the full gamut of emotions, from hopes and aspirations to disappointments and frustrations. In fact, the emotional impact of stroke can be just as profound as the physical effects (Stroke Association, 2014). Current means to objectively mediate and enhance the therapist-patient relationship in this setting are limited: verbal, mirrors, video recordings, charts and diagrams. These inadequate means perpetuate the 'social distance' (Greger & Hatami, 2013) between the groups (see figure 1) and also disenfranchise the often-overwhelmed patient.

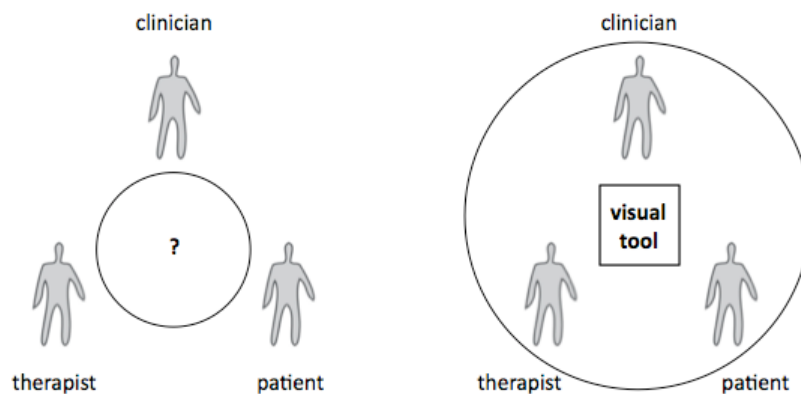


Figure 1. Clinician, therapist and patient are brought together in the stroke rehabilitation setting. However, the means to engage in meaningful discussion of vital issues through common language and points of reference are currently inadequate (left). The visual tool described here enables the 'social distance' between these three groups to be reduced to enable a shared, more equitable discourse (right).

The traditional hierarchical nature in healthcare research, e.g., between a clinician, a physiotherapist and their patients, has also defined the agenda, the decision-making processes, determined priorities, ultimately influencing the model of research and the kinds of data and evidence emerging on which a resulting therapeutic intervention would be based. This then leads to a question about whose agendas are being acknowledged and whether these would be sufficient to achieve a realistically workable intervention in the real practice setting. It also leads to questions of if, and in what ways, design-led approaches and methods could help address some of the issues outlined above.

Methodology

Although the RCT offers a rigorous research method for determining whether or not a cause-effect relationship exists between a treatment and its outcomes (Sibbald & Roland, 1998) the quantitative outcome measures (i.e. the measurement of the patient's ability to improve the performance of certain movements and exercises) to be used by the clinical leads in the trials would not alone provide any explanation of which aspects of the visualisation tools were successful and which were not. Therefore, in response to Lewin et al. (2009), our approach to the RCT design methodology was to introduce an over-arching design-led mixed methods qualitative framework into the RCT. This would test our hypothesis that *'visualisation of biomechanical data will enhance health and rehabilitative healthcare by mediating between users, clinicians and healthcare practitioners'*. It would also help in developing a complementary understanding to that obtained through the quantitative outcome measures (e.g., the measurement of the patient's ability to improve the performance of certain movements and exercises, such as increasing speed and symmetry of walking, or the quality of arm and hand movements and reach) acquired by the trials' clinical leads.

The design-led rationale

There are two principal types of contribution where design-led approaches may have some value in this particular context. The stroke rehabilitation session is not only 'technical' in nature (i.e. concerned with qualities and angles of movements of 'body segments' such as limbs, hips, shoulders etc), but it is also conducted in an intensively 'social' context (i.e. concerned with patient-therapist communication, understanding and interaction). The first opportunity is to assist the team (clinicians and therapists) in understanding the inter-dependence of these two distinct but complementary aspects of the rehabilitation session. Prior, the emphasis had almost exclusively been on the technical aspects without a regard for the real-life (i.e. non-trial) contextual setting (Hempe et al., 2010). This would require creating the conditions for, and the acquisition and presentation of, new kinds of evidence regarding the 'social' dimensions. Secondly, if visualisation tools are to be used to assist in patient-therapist engagement and interaction, and are to be understandable to and usable by patients and therapists as end-users, this demands that they would be involved, to a greater or lesser extent, in its design, requiring a participative co-development and iterative prototyping approach.

Patient and public involvement (PPI)

A prototype visual method had been developed and evaluated in previous studies (Loudon, et al., 2011; Loudon et al., 2012). This would require further development for its particular application and use in the three different stroke pilot RCTs in the 'envisage' (2013) project. Using a participative co-development process, the design of this visualisation tool for use in the intervention arm of a set of three stroke pilot RCTs was enhanced through the involvement of each of the stakeholder groups in an iterative process of design and evaluation feedback. This process also integrated a set of qualitative methods to address the issues raised by Lewin et al. (2009) above throughout the four phases of each trial. To help us consider different approaches to patient and public involvement (PPI) Savory's (2010) framework is helpful as it sets out a series of four 'ideal strategies' for "incorporating PPI into the wider process of translative healthcare research involving technological innovation" (Table 1). This framework helps contrast different approaches amongst the research team. Whereas the trials' leads (biomechanists) approached the research using predominantly strategy A to acquire quantitative data, the involvement of the design team used strategies A

through C for the collection of its qualitative data and for its participative co-development process.

Table 1. Four idealised strategies for patient and public involvement (PPI) adapted from Savory, C. (2010). Patient and public involvement in translative healthcare research. *Clinical Governance: An International Journal*, 15(3) pp. 195–197

PPI Strategy		
A	collecting patient data	<i>represents PPI strategies that focus on the participation of patients with the primary purpose of collecting data</i>
B	patient and public consultation research	<i>represents a broader based PPI strategy involving data collection from a wider range of stakeholders</i>
C	patient-led	<i>represents a strategy where the mode of patient involvement is complex with them being involved in the design, conduct and even analysis of the research</i>
D	public involvement and education	<i>concerned with widespread public-involvement in translative research</i>

Table 2: The envisage project trials structure: main phases, methods and PPI strategies (see Table 1).

Trials phase	PPI Strategy	Qualitative methods	Visualisations development
1. Design	n/a C B B, C	- <i>scoping review of literature</i> - <i>survivors' focus group</i> - <i>professionals' focus group</i> - <i>testing and feedback sessions of prototypes with user groups</i>	- <i>initial selection of visualisation options</i> - <i>initial selection of visualisation options</i> - <i>iterative bespoke visualisations development for each trial</i>
2. Pre-trial	B A A B	- <i>trials leads meetings</i> - <i>trials patients' questionnaires</i> - <i>trials patient' interviews</i> - <i>trials health professionals' interviews</i>	- <i>iterative bespoke visualisations development for each trial throughout pre-trial phase</i>
3. Trial	B	- <i>observation / video</i>	- <i>adjustments made as a result of trials</i>
4. Post-trial	A B C C	- <i>trials patients' interviews</i> - <i>trials health professionals' interviews</i> - <i>trials patients' focus group</i> - <i>trials health professionals' focus group</i>	- <i>verification of findings from design and pre-trials phases plus options for future developments posed at stage 4 focus groups</i>

Introducing and integrating mixed methods

The three stroke trials to receive the visual intervention were i) upper limb; ii) lower limb; and iii) ankle foot orthosis tuning (AFO - a brace used to minimise abnormal gait patterns following stroke, including prevention of 'foot drop' during walking). A mix of methods (Table 2) involving focus groups, workshops, interviews and observations was used to obtain feedback during the iterative development on the visualisation tools. How these methods corresponded to each of Savory's (2010) PPI strategies is also indicated. These would enhance understanding of how the tools could be improved in terms of their function and appropriateness in the rehabilitation context, acknowledging the experiences and opinions of those who had either undergone stroke rehabilitation (survivors and current patients) or who

had been involved in delivering rehabilitation (therapists and clinicians). They would also help incorporate the clinical trials leads' requirements for certain types of information (e.g. walking speed, step length, gait symmetry, and shank angle at mid stance) to be shown visually to assist both the therapist and patient.

Qualitative data

There were two inter-related aspects to the qualitative data (i.e. interviews, questionnaires and observations) collected. The first related to ideas and feedback useful to the *forward development* of the visual tools, i.e. in relation to patients', therapists' and trials leads' needs and expectations, and also in relationship to the context in which these were to be used, i.e. their role in the rehabilitation therapy service and their part in mediating and enhancing the therapist-patient relationship. The second related to understanding the potential *effect* of the use of the visualisations during the rehabilitation process in improving the experience of the service and outcome for both patient and therapist.

Development of visualisation tools and their interfaces

Using as a basis the experience of developing the prototype in prior studies the process of iterative co-development, summarised in Table 2, engaged survivors, therapists and trials leads. For the therapists and clinicians involved in each of the separate trials, the interfaces for the visual tools were also developed to allow them to select appropriate features, views, overlays and files for discussion with patients, to the point where these were ready for use in each of the three trials. Figure 2 shows examples of the visualisation tools used in the three stroke trials (left to right): knee lift exercise visualisation in lower limb rehabilitation showing graded colour coded target; reach and grasp visualisation in upper limb rehabilitation including hand controlled by motion sensors; shank angle visualisation to evaluate tuning of an Ankle Foot Orthosis showing simple colour coded good (green)/ok (orange)/bad (red) ranges.

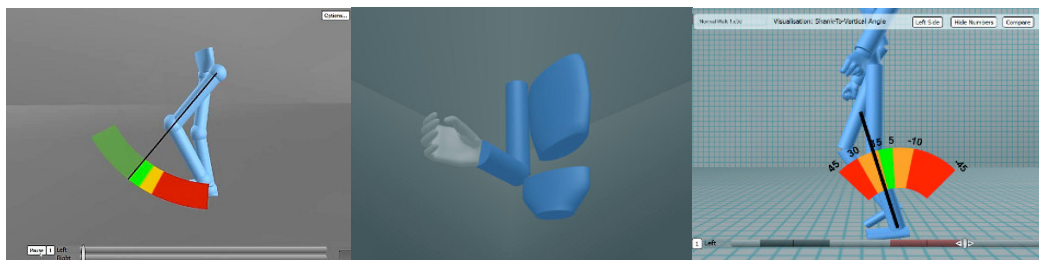


Figure 2. Examples of the visualisation tools used in the three stroke trials

Findings

The scope and intention of this paper does not provide space for a full discussion of the analysis of the data, detailed findings and the limitations of the study to be included here (these can be found at Envisage (2013)). In summary the findings are:

- » Understanding: the visualisation of the patient's own motion provided an aid to their understanding of their movement problems and the purpose of their rehabilitation tasks

- » Communication: the visual representation of the movement and the overlay of specific measures relevant to their rehabilitation provided a medium for improved communication between the patient and the therapist
- » Progress: the combination of quantitative measurement and clear visual representation of the measures provided an objective tool for therapists to monitor progress and communicate it to patients

By providing objective information, the visualisation tools were seen to enhance communication and understanding between the therapist and the stroke survivor in trials, while simultaneously enabling the trials leads' (biomechanists) contribution to be much more accessible and understandable.

Discussion

This is difficult territory for designers. Including designers in the team for the design, delivery and evaluation of an RCT trial, where their competences are not generally understood, is unusual. There is a paucity of reporting, by design researchers, of their work and their contributions within mixed discipline healthcare research (as distinct from discussions of 'designing' by non-design disciplines). For example, Freire & Sangiorgi (2010) discuss innovation strategies in the healthcare context both from within and outside the NHS, discussing methodologies and service outcomes from each of four healthcare-related case studies: however, none of these describe innovation within RCT design. A number of questions arise. What were the effects and benefits of including designers in the RCT research team? What kind of progress was made in addressing issues raised by Lewin et al. (2009), i.e., the designers' contribution to introducing mixed methods into the RCTs? What value for the field of Service Design arises from this study? The implications for designers' potential contribution to healthcare service improvement and re-design are now discussed.

Infrastructuring for open innovation

The importance of mobilising lay knowledge and experience has long been recognised in design as a driver of "open innovation" through working with "multiple sources of ideas" (Cottam & Leadbeater, 2004). Using people's experiences as the basis for co-designing healthcare services has some significant exemplars, such as in the work of Bate and Robert (2007) and those mentioned by NESTA (2013). "This placing of the user of a service or a product at the very heart of the design process has become today's *grande idée* in the design industry professions" (Bate & Robert, 2007, p. 42).

The prototype visualisation tools themselves served to change the social dynamics between the key stakeholders while at one and the same time embodying and manifesting the stakeholders' separate and individual requirements through subsequent iterations of the tools' features. They also provided a prototype experience, i.e. "something real that people can interact with" (Winhall, 2011, p. 136), offering everyone a preview of potential future service provision, with the post-trial phase interviews and focus groups providing the space to reflect on their experiences of using the prototypes.

AS a consequence, the various iterations of the visualisation tool prototypes together with the participative co-development process and its activities provided appropriate "infrastructuring" (Björgvinsson et al., 2012, p. 102) to enable a "greater proportional symmetry" (Strickfaden & Devlieger, 2011, p. 208) to develop between key players,

confronting traditional hierarchies, flattening decision-making and empowering all stakeholders. Thus, they helped reduce the “social distance” (Greger & Hatami, 2013, pp. 127-129) between trial lead, therapist and patient, mediating and changing the dynamics and nature of the conversation during physical therapy sessions. For example:

Aye, cause if you didnae have visuals and they were just saying to you “well this is what you are doing blab, blab blab”, me telling you what you are doing wrong “blab, blab, blab”, but you are not taking it in. You don’t understand what they are saying until you actually see it and then the conversation changes “oh right so I’m doing that and doing this”. So it does... the conversation does change when you’ve got the visuals. (female stroke patient, lower limb trial, post-trial patient focus group)

I took the time to, you know, play back recordings and talk through exactly what I was seeing and what we were going to work towards and talk a bit about sort of normal movement...we would play back something then I’d say... ‘you’re not stretching your elbow out as far as it can go, and you’re bending your wrist in, so what I want you to concentrate the next time we do this is trying to open this elbow up as much as you can and trying to bend your wrist back a little bit,’ so I think I was explaining more to her why I was doing what I was doing and what I wanted her to focus on, and I think that really helped. (occupational therapist, upper limb trial, post-trial professional interview)

RCTs are regarded as the ‘gold standard’ for research, and the evidence-base they generate often forms the basis for new treatment plans. However, creating space for the focus groups and interviews in the various phases of the RCT provided a more level playing field enabling fragments of patients’ and therapists’ narratives to begin to emerge, informing the design of the visualisation tools, and developing a sense of the patients’ (and therapists’) experiences. Without claiming this process as “directed storytelling” as defined by (Evenson, 2011, p. 69) these are narratives that can none-the-less help inform the future shape of the service through creating what Evenson (2011, p. 69) terms “empathetic connections” through the elicitation and presentation of new types of evidence not normally acquired in this type of RCT.

Conclusions

Whatever their recognised strengths, RCTs are necessarily reductionist in nature and do not mirror the real world context. As Wells et al (2012) state: “Instead of trying to test the efficacy of an intervention under ideal, experimental conditions, pragmatic trials are designed to find out how effective a treatment actually is in routine, everyday practice”. This may have been one of the designers’ contributions here – to shift the RCT design more towards an awareness of, and simulation of, the pragmatics of the real world context and to understand, acknowledge and allow for the dynamics, narratives and behaviours in that setting. To achieve this, the design-led approaches facilitated the introduction and integration of mixed methods approaches into the design of the pilot RCTs. An enhanced awareness of the social dynamic between therapist and patient in the rehab setting was developed (through the qualitative data) as well as a view into the patients’ and therapists’ experiences. The innovative visual tools themselves provided a more objective means of communicating progress, and developing understanding and enhancing communication. As a consequence, new (to this type of rehabilitation RCT) kinds of evidence were presented which may assist in catalysing “culture change through influencing organisational behaviours” (Heapy, cited in Meroni & Sangiorgi, 2011, p.232).

Implications for future healthcare service research and design

Implications for the shape of the future stroke rehabilitation service model informed by the collective analysis of all the qualitative and quantitative data acquired from these RCTs are yet to be determined. At this stage the work described in this paper cannot yet be described as service design *per se*, as only one potentially improved facet of a total rehabilitation service was being explored. However, within the structure of an RCT this work has documented the collaborative development of a 'complex intervention' using design-led approaches to introduce social and qualitative methods and processes together with an inter-related and iterative prototyping process. This work has utilised experience-based methods (e.g. survivors' experiences of surviving stroke, their rehabilitation journey, their preferred modes of on-screen depiction of themselves, within real therapy sessions, settings and situations). The approaches and tools also disrupted current hierarchies and behaviours providing the precursors for a service delivery rethink. The consequences of this approach led to extended design and pre-trial phases suggesting either: i) the factoring in of additional time within an RCT for people-centred participative co-development processes or ii) that the development of an intervention is completed in a prior study. The disadvantage of the latter may be the loss of the iterative reflective stages and a reversion to traditional 'RTC mode' thinking.

Through enabling the involvement of and engagement with all relevant stakeholders, designers can create the spaces, situations, methods and tools to help assemble and give form to these glimpses to move towards what Simon (1996) referred to as "preferred futures" allowing us to help others to begin to re-imagine the design and delivery of healthcare, and to provide the evidence to justify and support innovative approaches to healthcare service delivery. Freire & Sangiorgi's model (2010, p.46) needs to be extended further to discuss the type of work discussed here, as neither the patient-centred nor the patient-led category is sufficient: one has also to acknowledge equally the needs and contributions of the therapist, the clinician, and the carer, i.e. a multi-stakeholder-centred philosophy based on the 'community' and its real-life context to enable the co-creation and innovation required to help deliver improved services.

Acknowledgements

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Experience-based Co-design and healthcare improvement: realising participatory design in the public sector

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Abstract

Growing attention has been paid to the potential value of design theory and practice in improving public services. Experience-based Co-design (EBCD) is a participatory research approach that draws upon design tools and ways of thinking in order to bring healthcare staff and patients together to improve the quality of care. Through a six-stage facilitated process, EBCD uses filmed patient narratives to promote change that is grounded in people's experiences and engages participants in co-design activities to implement improvements. The co-design stage is a powerful and yet challenging one, as it requires both staff and patients to renegotiate their roles and expectations. When applied in the healthcare sector design approaches acquire a distinct political dimension by re-configuring the relationships of power between citizens and public services. From a critical review of approximately 60 EBCD projects, we reflect on lessons for effective participatory co-design approaches.

KEYWORDS: Experience-based Co-design, healthcare organisations, participatory design.

Introduction

Applying service design theory and practice in the public sector is an emerging and rapidly growing field. The Design Commission (2013) recently argued strongly in favour of more design input in the shaping of public services. In the healthcare sector - the focus of this paper - the National Health Service Institute for Innovation & Improvement (NHS IHI) has since 2005 drawn on design theory, tools and techniques to develop a suite of interventions to help NHS organisations improve the quality of the services they provide (Carr et al., 2009). Whilst attempts at mapping these and other design-led approaches to service

transformation are now under way (see the Service Design Research UK network funded by the Arts & Humanities Research Council), rigorous research into the implementation and impact of service design in the healthcare sector remains fragmented and limited in several important respects. In this paper we reflect on a ten year period that has seen the development, widespread adoption and implementation of one particular approach in the healthcare sector: Experience-based Co-design (EBCD). To inform these reflections we draw on peer reviewed publications and 'grey' literature reporting on EBCD projects, as well as the findings from a recent online international survey of those leading such projects, which included 18 follow-up telephone interviews with a sample of the 61 respondents. Our aims in doing so are (a) to explore issues shaping the impact to date of this particular form of participatory co-design in the healthcare sector and (b) to identify lessons for implementations of this and similar co-design approaches in the future.

Experience-based Co-design (EBCD)

EBCD is an approach to improving healthcare services that combines participatory design and user experience design to bring about quality improvements in healthcare organisations. It originated in 2005/06 as a participatory action research approach that explicitly drew on design theory (Bate & Robert, 2007) and was first piloted in a head & neck cancer service at Luton & Dunstable hospital (Bate & Robert, 2008). A recent international survey of completed, ongoing, and planned EBCD implementations in healthcare services found that at least 57 EBCD projects have been implemented following the pilot project in 2005/06, with at least a further 24 projects in the planning stage (Donetto et al., forthcoming). These projects span a broad range of clinical areas (including, but not limited to, emergency medicine, drug & alcohol services, cancer services, paediatric diabetes care and mental health care), not only in the UK but also Canada, the Netherlands, Sweden, Australia, and New Zealand. The number of projects appears to be growing year on year and most of the completed or ongoing projects involve some, more or less structured, form of evaluation. However, with a small number of notable exceptions (Iedema et al., 2010; Tsianakas et al., 2012; Piper et al., 2012; Bowen et al., 2013), robust studies of EBCD projects remain scarce.

Through a 'co-design' process the approach entails staff, patients and carers reflecting on their experiences of a service, working together to identify improvement priorities, devising and implementing changes, and then jointly reflecting on their achievements. The EBCD cycle - which typically takes 9 to 12 months - is divided into six stages (Figure 1): (1) setting up the project; (2) gathering staff experiences through observational fieldwork and in-depth interviews; (3) gathering patient & carer experiences through observation and 12-15 filmed narrative-based interviews; (4) bringing staff, patients and carers together in a first co-design event to share - prompted by an edited 20-30 minute 'trigger' film of patient narratives - their experiences of a service and identify priorities for change; (5) sustained co-design work in small groups formed around those priorities (typically 4-6); and (6) a celebration and review event (Bate & Robert, 2007; Robert, 2013).

Originally called 'Experience Based Design' (EBD) the later switch of title to EBCD was a direct response to observing how early projects - which did typically include extensive work to understand patient experience (much of it innovative at the time) - were paying insufficient attention to the co-design phase; staff were instead relying on traditional, narrower approaches to making improvements to services. As Bowen et al. (2013, p. 243) recently reflected, these early EBD projects were "initiated and led by local managers of

particular services’ which gave ‘rise to particular configurations of power both in relation to the performance of co-design and in the implementation of changes.’ We shall return to this issue later in this paper.

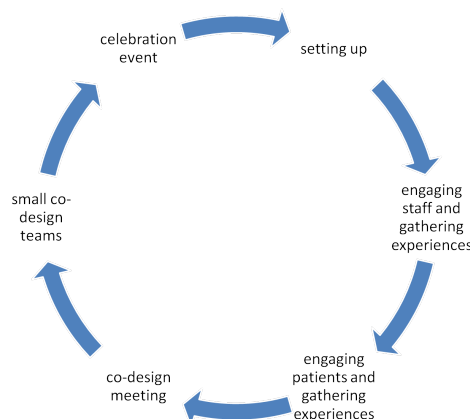


Figure 1 The six stages of the EBCD approach

Subsequent developments have included testing an ‘accelerated’ version of the approach, developed to address the time and costs involved in producing filmed narratives for the trigger film which drew some criticism from staff. This ‘accelerated’ version - which relies on the extensive archives of filmed interviews focusing on people’s experiences of their health-related conditions held by healthtalkonline (<http://www.healthtalkonline.org/>) - has recently been tested and evaluated in two Intensive Care Units and two lung cancer services (Locock et al., forthcoming) through funding from the National Institute for Health Research. The accelerated approach proved readily acceptable to staff and patients; using films of national rather than local narratives did not adversely affect local NHS staff engagement, and may in some cases have made the process less threatening or challenging. The resulting 48 co-design activities across the 4 services were similar in nature to those in EBCD but achieved more quickly and at lower cost.

Service design, co-design and EBCD

Design principles permeate EBCD. The approach is based on the foregrounding of experience, which is central to user-centred design processes in other fields of application (e.g. from product design to human-computer interaction design) and it makes use of concepts and practical tools - such as touchpoints and emotional mapping - that have long been applied in design (Gage & Kolari, 2002). The focus on patients’ and staff’s experience rests on the fundamental premise that successful healthcare service design must attend simultaneously to all three dimensions of ‘good design’ (Berkun, 2004): performance, engineering, and aesthetics, where aesthetics (to which the analysis of experience contributes the most) is not the ‘soft’ element of the triad but rather encompasses fundamental aspects of a product or service such as utility, usability, and interactivity (Bate & Robert, 2007). Furthermore, design-based and social science perspectives on how to enable in-depth understanding of the meanings and meaning-making practices of individuals and social groups have common origins; combining these can bring theoretical insight to a change intervention aimed at addressing very practical concerns (Bate & Robert, 2008).

Alongside the focus on experience, the other central thread underpinning EBCD is the participatory approach to the co-design processes that aim to bring about quality

improvements. Participatory design gives primacy “to human action and people’s rights to participating in the shaping of the worlds in which they act”, where participation refers to “the fundamental transcendence of the users’ role from being merely informants to being legitimate and acknowledged participants in the design process” (Robertson & Simonsen 2013, pp. 4-5). Participatory design approaches are seen as a way for public services to respond to the increasing pressure from contemporary societal challenges and to address disengagement and disillusion from citizens about politics and democracy (Bradwell & Marr, 2008; Iedema et al., 2010; Lenihan & Briggs, 2011). However, as well as important benefits, co-design as advocated in EBCD presents both conceptual and practical challenges. Below we provide a brief overview of co-design in the context of EBCD before presenting what we know about how it has been applied in EBCD projects to date; finally we discuss the benefits and challenges co-design entails within contemporary healthcare organisations.

Drawing upon participatory design principles, the co-design element in EBCD aims at opening up the boundaries of designing in healthcare services in order to include new stakeholders and forms of expertise; patients are called to share their specialist form of expertise (knowledge) and participate in the design process from the idea generation stage (Sanders & Stappers, 2008). In design science this is part of a major shift towards a new role for designers where “the practice of designing is not exclusive to professional designers” anymore (Carr et al., 2009). It also draws upon the notion of ‘co-creation’ as proposed by Cottam & Leadbeater (2004) entailing the use of distributed resources and the participation of service users as ‘vital to the design and delivery of services, working with professionals and front line staff to devise effective solutions’ (Cottam & Leadbeater 2004, p. 22; see also Meroni & Sangiorgi 2011, p. 20).

In the UK, there is considerable variation in what is termed as ‘co-design’ in different services and sectors, highlighting a range of interpretations and applications of co-design in practice. Co-design is conceptualised, defined and practised differently, ranging from practices such as user testing to feedback and consultation, to online collaboration and/or user research and workshops. The working definition of co-design provided by Bradwell & Marr (2008) leaves room for wide flexibility in how the concept translates into practice but is centred on four elements: participation, development, ownership and power, and outcomes and intent. In the case of EBCD we would operationalise these dimensions as follows:

- » *participation*: co-design is a collaborative process in which as many stakeholders as possible have input;
- » *development*: co-design evolves as a process, maturing and adapting as it takes place;
- » *ownership and power*: co-design involves a transformation of ordinary power relations between stakeholders and aims to generate collective ownership; and
- » *outcomes and intent*: co-design has a practical focus, notwithstanding that unplanned processes and transformations are likely to occur as collateral effects of the process.

In EBCD, the ‘co’ in co-design refers emphatically to partnership and shared leadership between patients and professionals within the NHS (Bate & Robert, 2007). Co-design means more than just being responsive to patients and listening to their needs; patients are not just active partners ‘having a say’ in their care but actively contributing to the design of their care (Bate & Robert, 2007, p. 30).

Co-design and the implementation of EB CD: lost in translation?

A free to access, online toolkit incorporating several case studies has been developed through a collaboration between quality improvement practitioners and academics, and is disseminated through the King's Fund (<http://www.kingsfund.org.uk/projects/ebcd>) charity. The toolkit is divided into 16 sections (for example, 'Interviewing and filming patients' and 'Running the joint patient-staff event'), each of which incorporates film clips of participants in previous projects talking about their experiences and passing on hints and tips for others who may be interested in the approach. Following the initial launch of the toolkit in August 2011 - when it received almost 11,000 views - views of the toolkit have subsequently averaged 3,500 per month (Adams et al., forthcoming).

The survey results indicated that users of the toolkit found it concise and easy to follow, and that it provided them with the practical tools for carrying out an EB CD project. They also highlighted the use of films in the toolkit as a way of demonstrating the experience of patients, staff and carers involved in other EB CD projects. Over 90% of respondents in the survey reported that EB CD 'really engaged patients' and almost 80% said it 'really engaged staff.' However, what is evident from the limited published literature - as well as from analysis of the survey responses - is that the EB CD approach proposed by Bate & Robert (2007) has undergone a variety of adaptations in response to a variety of local contingencies and organisational circumstances. In follow-up telephone interviews with respondents to the international survey (Donetto et al., 2013), it is clear how those leading the implementation of EB CD perceive the approach as inherently flexible, tailoring it to the nature of particular clinical services and their own local contexts:

Our learning re co-design is evolving. Using our first project as an example, we didn't use videos but collected stories through workshops. We had a pre-project workshop to get a mandate for the work. We didn't have separate staff and patient workshops, rather we had joint workshops. We relied strongly on journey mapping and identifying priorities together. We had a strong service design element, utilising the expertise of an external service designer. We also partnered with a bigger project which adopted a traditional PDSA project management approach. Each project since has involved different approach building on our learning and taking into account the situation and the timeframe..

We have already introduced a range of modifications as opportunity or constraints arise. I think EB CD is first a philosophy and only second a method, and methods need to evolve and grow as organisations grow smarter about working with patients/ clients. We use a lot of tools from service design and are evolving ones of our own.

These local adaptations have included the elimination of specific phases particularly - it would appear (Figure 2) - non-participant observation and the celebratory/review event. Beyond these obvious omissions, although over 80% of projects reported conducting patient interviews many have dispensed with the (time- and resource-intensive) filmed component, whilst others have dispensed with one-to-one staff and/or patient interviews and resorted to focus groups. Many of the adaptations we have observed relate to the main criticism of the EB CD approach - it simply takes too long (Figure 3), hence the development and testing of the 'accelerated' approach described above.

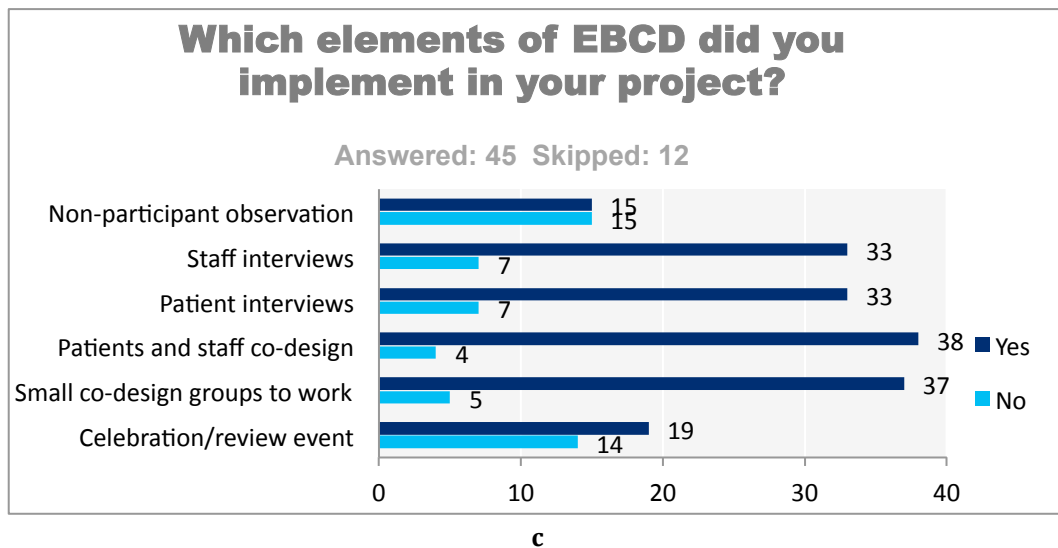


Figure 2. Adaptations to the EBCD approach (source: Donetto et al., forthcoming)

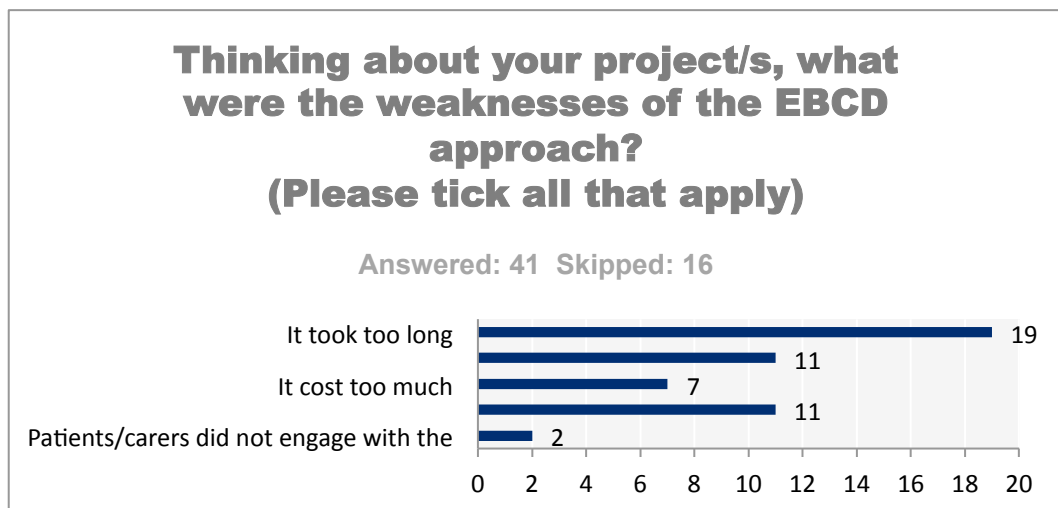


Figure 3. Weaknesses of EBCD approach (source: Donetto et al., forthcoming)

Most significant in our view are the adaptations to the ‘small co-design groups’. It is clear that some of those leading projects are still struggling with the notion of co-design itself, asking in their survey responses for more examples to be provided of co-design meetings and the tools used, more information on how to make co-design events work, the ‘fundamental’ aspects of co-design and where ‘shortcuts’ could be made. Although over 85% of survey respondents reported implementing these as part of their project (Figure 3 above), follow-up telephone interviews revealed a wide range of approaches. Some stark examples included one project which entailed holding just one ‘co-design’ meeting where experiences were discussed and solutions determined but only with patients present; staff were then charged with developing and testing the ‘solution’. Another project leader described how ‘as far as the [small co-design groups], these were mainly staff as most patients felt that they had told us the issues and just wanted to learn what changes we had made.’ This accords with Bowen et al. (2013, pp. 241-242) reflections on the application of EBD in an early case study involving outpatient services for older people suggested that “the modest service improvement that resulted may be due to the specific structuring of participation and the limited ideation tools in EBD”, arguing that a reported “perception of the designing as being something that was done by others” was a key shortcoming in this particular project. Others

reflected on the significance of co-design to which some wished they had paid further attention:

What worked for us was the frequent short meetings, and keeping in close contact. And I think for the patients and relatives to be there kind of held the staff to account, and to their action points. I mean they did divvy things up... there was something about, definitely for staff because of that thing that I said before about that humanistic kind of connection that it really drove them to complete actions.

I think I would probably do more co-design events and sort of do more feedback as you go along really. I think definitely I would have benefitted from more co-design.

The question of expectations of the scale of change that may result from co-design approaches is also an interesting one in the healthcare context; witness the contrasting views of two members of staff in a colorectal cancer service (Adams et al., forthcoming):

[for] the amount of time it takes you need to get some really good stuff out of it ... changing a little bit of [things] work that's good, but is that good enough?

'[People talk about minor but] How minor? ... if that minor change affects 100 people that year, and it's a better experience for 100 people, how wonderful is that?

Bowen et al. (2013) were clearly left a little underwhelmed by the changes brought about in the EBD project they led. There are, of course, several potential reasons why only 'modest' improvements were observed in this particular case (relative expectations being one) but we would certainly agree with the authors that one key area to focus on is the co-design phase of the approach. Interestingly, the authors comment that:

'our own expectations (as participatory designers) about trajectories of change can also be naive when working in unfamiliar and complex organisational contexts. The slow (and uneven) progress from ideas to implementation, and the way that project proposals have been adapted and fused with other inputs to stimulate the actual changes, challenged our own morale and confidence about the impact of the work.'

As noted above the 'accelerated' EBCD (AEBCD) approach led to 48 co-design activities across four services, and these were similar in nature and scale to those typically seen in EBCD (Box 1):

There were 28 activities across the two EBCD pathways, compared to 48 across the four AEBCD examples and a similar distribution of activities, with more small scale changes and process redesign within teams than wider process redesign between services and between organisations. In the EBCD pathways there were: 12 *small scale* changes (e.g. reviewing and improving patient information; regular updates on waiting times in clinic); 12 *process redesign within teams* (e.g. designated phlebotomist to reduce waiting time for blood tests); 2 *process redesign between services* (e.g. physiotherapists reviewed timing to give patients advice about exercise; information flow from pre-assessment to post-surgery redesigned); and 2 *process redesign between organisations* (e.g. link nurse scheme to improve cross-site working and visibility of test results). In AEBCD there were: 21 *small scale changes* (e.g. sourcing clocks to aid patient orientation in ICU; more comfortable v-shaped pillows for post-op patients); 21 *process redesign within teams* (e.g. new private room identified for receiving support after diagnosis; introducing mini 'Schwartz rounds'); 5 *process redesign between services* activities (e.g. changed process for porters to remove waste avoiding ICU rest times; redesigned discharge summary with input from all professions); and 1 *process redesign between organisations* (improved cross-site information booklet for patients transferring to another hospital for surgery)

Box 1. Examples of changes resulting from co-design: EBCD and AEBCD projects (Locock et al., forthcoming)

Although small-scale changes and process redesign within one service area are the most common result of both AEBCD and EBCD (see Box 1), it was observed that small-scale change is often remarkably complex to implement, and what looks like a small change can be immense valuable to patients. Moore & Buchanan (2013) have recently referred to this as ‘sweating the small stuff’. Where successfully implemented, the co-design stages of EBCD have proved powerful but still complex to implement in practice (e.g. Iedema et al., 2010; Piper et al., 2012; King’s Fund, 2011; Boyd et al., 2012). One of the survey respondents commented:

Co-design is very messy, and I'm totally comfortable with that, but it doesn't always work for clinicians in management because their lives are so regulated...they're often very cynical. Cynical in that they've seen everything tried...And probably their empathy, they believe they're empathetic, but they can't afford to be; you just see too much tragedy so you have a detachment that actually gets in the way. What I've found with co-design and particularly the conversation between staff and patients in co-design is the service connotations; it's often the first time they've ever talked with each other that way. So they're often very nervous initially, and I can almost time it, it's almost usually 20-minutes, a kind of a stand off. And then they realise they actually feel the same way, they both feel disempowered and frustrated, and away we go you know. So you know there's a difficulty engaging people, but there's a huge pay off because staff then feel they have a very clear mandate from patients to change things.

In the EBCD projects carried out in Emergency Departments in New South Wales, Australia, co-design demonstrated a number of strengths (Iedema et al., 2010) including: allowing project staff to learn new skills; enabling frontline staff better to appreciate the impact of health care practices and environments on patients and carers; engaging service users in ‘deliberative’ processes that were qualitatively different to traditional forms of engagement; and enabling the service to implement solutions that met the wishes, advice and insights of patients and frontline staff. However, where preparation, recruitment of patients and engagement of front-line staff were not possible or not consistent, co-design worked less well (Piper et al., 2012). In an EBCD project carried out in breast and lung cancer services in the UK, the co-design stages also proved challenging: not all the co-design groups that formed were subsequently maintained and there were issues with the composition of some groups, which ended up including mainly or exclusively managers and clinicians (King’s Fund, 2011). One member of staff considered the emotional demands of working - as clinicians - alongside their own patients in a co-design process (Adams et al., forthcoming):

[The co-design group was] nerve wracking ... I was sitting across a [meeting] table from a woman that I knew, I'd looked at her scan and I was going to have to tell her that her cancer had come back in the next clinic ... and she's telling me how brilliant her life is ...

Another staff perspective on this issue is that - whilst recognising the potential of co-design - it is very challenging for most healthcare staff to move easily between their ‘expert’ and ‘decision-maker’ role to becoming a partner and colleague:

I think that it worked because it was collaborative and there were mixed groups of people doing the work they held each other to account. And kept people on track where perhaps it might have slid... I think people enjoy the bit of collecting stories, it's like consultation, I think that it's harder to do the co-design or collaboration after that initial problem solving phase because I think health professionals are used to being in charge of making things happen.

The complexities of ‘co-design’ at the individual staff member and patient level in the healthcare sector become clearer when considering such insights. Implicit in participatory design approaches is the aim to change power relations but the evidence as to whether or not they do so in the health care setting is very scant; certainly we know little of the circumstances in which they are successful in this regard. Digging a little deeper into the detailed implementation of participatory design approaches such as EBCD often reveals tensions between co-design’s intended aims and its actual forms in practice. The authors involved in carrying out and evaluating several EBCD projects in Australian emergency care services make their own recommendations as to how to improve the co-design processes in EBCD - for example, by involving skilled facilitators, using a mix of involvement strategies, performing a ‘co-design readiness’ assessment, and obtaining recognition from management and policy makers (Iedema et al., 2010). However, what emerges from their and our considerations is that co-design is a complex social intervention whose impact and outcomes are difficult to evaluate and cannot be reduced solely to the design solutions it generates (Bradwell & Marr, 2008; Iedema et al., 2010). Other aspects could include, for example: the personal development of those involved in the process; changes in staff motivation, skills and self-confidence; and the development of trust and new relationships between participants in the process.

Realising participatory design in the healthcare sector

The adoption and implementation of co-design in public services requires critical approaches to both organisational processes and to design practice. When applied in the institutional healthcare setting, participatory design approaches acquire a distinct political dimension by seeking to re-configure the relationships of power between citizens and public services; they cannot be applied as perhaps in the private sector, where power dynamics are not necessarily aiming to be democratic and where hierarchies might not need challenging. We invite design practitioners to share their thoughts on what needs to be borne in mind when using design expertise in the healthcare sector, what their particular form of expertise brings to well established quality improvement processes in large and complex healthcare organisations, and the nature of the critical thinking needs to be applied in order to increase the impact of co-design approaches in this setting.

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Can awareness-based practices benefit co-creation in community social innovation.

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Abstract

Multi-disciplinarity requires team members to justify and competitively defend their disciplinary perspective, which creates a risk of them becoming ego-centric (Fisher & Smith, 2011). Whiteley (1993; 2010) examined the problem of multiple intentions affecting social development projects and recognised that to design responsibly, the designer must facilitate a co-creative process. Service Designers have been seen to accommodate co-creative design activities in recent projects.

In the UK, different studies to develop collaborative practices utilise diet, exercise, meditation and different group working strategies and are objective and empirical, conducted in clinical settings. However, design-based social innovation projects occur in real life (live) community contexts and mostly produce case-studies as outcomes, which are subjective and biographical. Therefore, this research looks to create a mixed-method. The research process is also multidisciplinary, whilst based in design it has a complexity science, holistic perspective, incorporating physiological and psychological methods.

The derived methodology described in this paper utilises social interactions, physiological information and psychological data to build a holistic set of methods to triangulate the effects that meditative practice can have on co-creating individuals and teams. The corresponding analysis requires a three step process; firstly, generating themes or hypothesis(es), secondly, coding data based on the hypothesis and thirdly, categorizing the themes based on their relevance and importance within a multidisciplinary social innovation context by reducing the instance of ego-centricity in its team members. The contribution of the paper is that it demonstrates that a hybrid methodology can be derived to create evidence-based research to support the development of more open, collaborative and human centred approaches to innovation.

KEYWORDS: Co-creation, research method, awareness based practices

Introduction

Service Design is being increasingly used to improve the experience and solve problems in the field of social innovation. Service design can address such issues in many different ways. One of these ways is Co-creation, where the designer is a facilitator for change so that stakeholders can generate solutions to bring about change from within their community. Co-creation in design is also called co-design, where not only the community, its representatives and support workers are learning to contribute solutions, but also the designer is learning to work 'with' these stakeholders instead of working 'for' them (Siodmok, 2011). Thus, the co-creation method challenges the traditional definition of designing, where the designer is in charge of generating solutions to bring about change, based on the requirement provided by the client. The difference is in two ways: Firstly, the designer needs to relinquish control over the solution and the process that generates the solutions. The designer has to patiently watch as solutions emerge from within the community being designed for; Secondly, the designer is responsible for manipulating the context so as to facilitate conditions that boost others to co-design solutions. This requires the designer to work within a multi-disciplinary team and understand different disciplinary viewpoints. Research into design shows that, understanding and defending different disciplinary viewpoints can be stressful to the designer and the design team (Bason, 2010, p. 52).

Reducing stress during the co-creation process in the workplace and at a community level has gained attention from the government and private initiatives in the UK, such as The Wellbeing Programme, Health Work Wellbeing Initiative, WEL program and many others. They utilise diet, exercise, meditation and different group working strategies to improve co-creation; But these initiatives are all clinical researches. This is because intervention in the real world and researching the effects during co-creation requires a rigorous research method that can justify the success of the intervention. The tools utilised for investigation by most researches today, involve either:

- » Case studies as biographical methods for gathering empirical evidence of change in experience (Sevaldson, 2010; Scott, Melles, Gavin & Howard, 2012) or;
- » Medical tests such as the cortisol test, heart rate variability, Electrocardiographs etc. as a Physiology based method for gathering empirical evidence of change in stress or;
- » Surveys as a Psychology based method for gathering empirical evidence of change in experience.

The context of this research, conducted at Northumbria University is to investigate if awareness based practices can bring about improvement in the co-creation process when used for service design-led social innovation. The criteria for successful change in the co-creation process, is the reduction of stress and improved experience during co-creation, rather than just successful outcomes. One of the objectives of the research is developing a robust method that leads to a holistic research, which is descriptive as well as objective. A mixed-method is described in this paper that can evaluate multi-disciplinary teams for changes in stress at physiological, psychological and social levels during the co-creation process.

Co-creation for Social Innovation (The Context)

In social development projects, participation of multi-disciplinary stakeholders is crucial as they bring different perceptions and criteria to the solution. This participatory approach is

essential to draw together all key stakeholders for common intention and collective innovation (Cooke and Kothari, 2001, pp.2-4; Kothari, 2001, p.134). Recent works have acknowledged the impact of multi-disciplinarity as sources of knowledge, technique and expertise within co-creational spheres (Cooke and Kothari, 2001; LeCompte and Schensul, 1999; Jegou and Manzini, 2004). This impact is true for any product-service-system, but in social innovation, the contributors can be part of a community and may possess no relevant expertise or experience. This makes co-creation a crucial ability. Harwood (2009, p.15) emphasises the importance of Co-creation when he says "...Our ability to co-create and collaborate with others will become business critical, and those unable to make the shift will be left behind." So what is co-creation?

The London Research & Consulting Group at the London School of Economics and Political Science defines co-creation as "creative, eclectic in its methods and theory based, facilitated, strong on the quality of relationships and a learning process and collaborative". Thus, co-creation can be perceived as an extension of Sfards' (1998) 'two metaphors of learning', namely, learning by acquisition and learning by participation. Participation in this case is; "contribution to a shared knowledge-base", where knowledge is generated through interactions and co-owned by the team (Platts, 2013). Thus, this aspect needs to be clear in its definition of co-creation. On the other hand, RED, a research group that spun out of the UK Design Council, defined co-creation in terms of interaction, participation and joint problem solving between users, workers and professionals. They argued that co-created services would differ in terms of their design, content, systems and their structure of delivery. Taking these into consideration, the authors' definition of co-creation for this research is: *an eclectic process of collaboratively creating shared knowledge and co-operating to generate outcomes that are co-owned.*

Breeding healthy competition within team members is the source of knowledge that distinguishes co-creation process from other processes. It is important to note that "Co-creation is neither the transfer or outsourcing of activities to customers nor a customization of products and services. Nor is it a scripting or staging of customer events around the firm's various offerings. Co-creation puts the spotlight squarely on *consumer-company interaction as the locus of value creation*. There can be multiple points of interaction anywhere in the system, which includes the traditional point of exchange" (Prahalad & Ramaswamy, 2004: p.10). In recent years, due to the rising need for collaborative efforts, co-creation has become a buzz word, and repeated interactions have blurred the boundary between different disciplines (Payne et.al., 2008; Jani and Sawhney, 2012). Formerly, every discipline had a defined role; Engineering would develop technology, Design would manipulate products to meet the needs of the market while Marketing would research and manipulate market needs to generate demand (Sennett, 2008: p. 24). Even the conventional value creation process defined discrete roles of production and consumption for companies and consumers respectively. Blecker and Friedrich (2007: p. 139) mention "Products and services contained value, and markets exchanged this value, from the producer to the consumer". But now, the traditional concept of a market being company-centric has changed (Fisher and Smith, 2011). So has the process of value creation (Vargo et.al., 2008). The fading boundaries, lack of clear roles for different disciplines and the transition from a firm-centric view to a co-creation view, have brought out a new endeavour between co-creating team members (Prahalad & Ramaswamy, 2012).

When dealing with a multi-disciplinary group environment, Stacey (1993, p. 303-323) notices day to day politics as affecting the decision making process and in turn the solutions that are generated and their impact. Similarly within social sciences, many researchers have

recognised issues in ‘the participatory approaches to social development projects’ (or co-creation) such as politics, representation (Cooke, 2001) (Kothari, 2001), transformation (Mohan, 2001), governance, citizen-state engagement (Taylor, 2001) and power relations (Cooke, 2001). With respect to multi-disciplinary environments, Scharmer (2010, p.2) brings to light “the challenge of missing collective leadership¹” which becomes more apparent during the long process of social innovation. It is our understanding of Scharmer’s work that, this missing collective leadership stems from multiple perspectives being input from multiple stakeholders and managing these viewpoints becomes difficult. All of these researches recognise that, the clash of egos between people from different disciplinary backgrounds, is causing certain hindrance to social development projects and that from this arises a need for transformation in multi-disciplinary designing.

With respect to co-creation for social innovation, critiques generally focus on differences in definition and interpretations, objectives of participation and personal agendas, appropriateness of techniques and tools and last but not least the applicability and impact (Nelson & Wright, 1995). Though these are major aspects to focus on, Cooke (2001, p. 6) explains that this is a limited critique and gives importance to ‘reflexivity’ and promotes teams being collectively “cognizant of the issues of diversity and differentiation.” Whiteley (1993, pp. 94-97) also examined the problem of multiple intentions affecting the social development projects in the context of Design. He recognises that socially responsible designing is the designers’ or design team’s responsibility. In recent years, Service Design has been utilised to address this issue e.g. IDEO (2009), NESTA (2012) etc. However, designers in multi-disciplinary groups rarely have the power or independence to be solely ‘responsible’ in terms of the design solutions they deliver to a market or an industry (e.g. www.designagainstcrime.com). If designers have the responsibility to rise to the challenge of letting go of the control of creation during the co-creation process and take charge of socially responsible designing as directed by Whiteley (1993), then how can they develop this ability?

Philosophical Understanding

Heidegger suggests that doing is more fundamental to understanding than reflection. As an example, Heidegger suggests that when hammering you are involved in the activity of hammering and not in reflection on the hammer and that reflection comes in when a “breakdown in the activity occurs” (Heidegger, 1988: p. 293). We believe that this interpretation is too restrictive and it is more correct to suggest that reflection exists in the activity of hammering all the time. The hammerer is tacitly aware and reflecting (moment by moment), at least on the current outcome of the activity, and adjusting his actions accordingly. Whilst doing and reflecting are inseparable from the process of knowing, we should realise that there is another form of action that (although often unappreciated within Western culture) is equally important to knowing the World: The action of examining personal experience, or as Varela puts it ‘the act of becoming aware’ (Depraz, Varela & Vermersch, 2001). Thus, Enactive Cognitive Science points to a disciplined act of cultivating our capacity ‘of becoming aware’ of the sources of our experience and, thus, opening up new possibilities in our habitual mind stream. In Varela’s work, this action of becoming aware is punctuated by three ‘gestures’: (1) Suspension – a conscious transient suspension of beliefs

¹ Collective leadership becomes possible when the members of a group, motivated by a common purpose, begin to build relationships with each other that are genuinely respectful enough to allow them to co-construct their shared purpose and work. This is about expanding from the solo perspective of “I” to include the “We” (www.ethicalleadership.org).

about the thing being examined; (2) Redirection – turning one's own attention from the object to its source, backwards towards the arising of the thoughts themselves; and, (3) Letting go - changing one's attitude from looking for something to letting it come (Depraz, Varela & Vermersch, 2001).

Rothwell (2010), Still (2006) and Martin (1997) all delineate two different intellectual environments that have influenced and contributed to the contemporary approaches to Awareness in research and clinical applications. On one hand there are the holistic approaches, mostly adopted during cross-cultural experiences with the east. They are associated with the basic insight of the meditative traditions, epitomized in the paradoxical turning towards one's symptoms and with an appreciation of the religious roots and resonances of meditation practice that can be found within contemporary psychodynamic, humanistic, transpersonal, and postmodern streams of psychotherapy (e.g., respectively, Epstein, 1995; West, 2000; Boorstein, 1996; Norum, 2000). In this approach, interventions incorporate meditation and spiritual practices to cultivate ways of being, rather than specific outcomes (Rothwell, 2006). Such interventions are building their own evidence bases, strengthening their appeal within the social and cultural discourse that has allowed integrative medicine to grow and flourish. On the other hand there is the discourse associated with the cognitive behavioural therapies. Within these therapies, identifiable forms of Awareness-based or informed intervention have arisen, which may or may not include meditation practice for cultivating Awareness, and which predict outcomes based on cause and effect (Rothwell, 2006). Such interventions have found significant appeal within the dominant social and political discourses and practices of health care, particularly in the U.S., where evidence-based practices have a preferred status (Ma & Teasdale, 2004). However, there have been very few Awareness based interventions for organizational learning, social experimentation and strategy development (Dryden & Wells, 2006). In physiology based studies the focus is on healing physical aspects and in psychology based studies the focus is on healing the mental aspects. But team members in co-creation scenarios do not necessarily suffer from any known mental or physical conditions. The study of social scenarios does not necessarily focus on a common illness or suffering. While studying co-creation, we focus on awareness enhancing practices affecting the clash of egos within the multi-disciplinary design team. We appreciate that people are fundamentally different from each other. A simple mental arousal in any person is dependent on many factors including; personality, time of day and use of stimulants. Different personalities will have different arousal levels; introvert people have a high arousal and extrovert have a much lower arousal level (Kofman *et al.*, 2006). Maximal mental arousal will not always occur in every situation, however in order to think logically and effectively a minimal degree of mental arousal is necessary. Thus to study Co-creation as a service design process we require appropriate tools and techniques for conducting research.

Past researches

Teaching awareness enhancing practices is an inductive process, but studying the effects on co-creating teams can be carried out in different ways. As discussed before, awareness enhancing practices are being utilised by different disciplines in different ways. The choice of methodology depends on the traditional research techniques that the researchers are well versed in. Thus, the methods for building evidence of improvement in practitioners differ based on the discipline conducting the research:

- » Physiology based methods for gathering empirical evidence of change in stress (Medical tests such as cortisol test, heart rate variability, Electrocardiographs etc.).

Responses to stress are difficult to quantify even in a laboratory setting (Cerutti *et al.*, 2006); however, computer analysis of physiological (HRV viz. Heart Rate Variability, BP viz. Blood Pressure and HR viz. Heart/Pulse Rate) changes could be studied and thereby make some conclusion on the physiological response to stress (Cerutti *et al.*, 2006). In the study conducted by Kofman *et al.* (2006) the occurrence of stress was identified by observing changes in HRV and questionnaires rather than by measuring arousal and alertness (Kofman *et al.*, 2006). These studies are objective and focus on the effects during the process and the outcomes of the process do not affect the research itself. But most studies are conducted in clinical settings. There are basic limitations for using clinical research methods for studying co-creation. Clinical studies simplify the complexities of the real world to study a few variables (Collins, 1999). The protocols for clinical study are rigid and predefined and not many changes can be expected while conducting the study. However, clinical study isolates the participants to controlled interactions. Thus, clinical settings may end up creating a simplistic understanding and a limited view if utilised for studying co-creation.

- » Biographical methods for gathering empirical evidence of change in experience (Case studies) (Sevaldson, 2010; Scott, Melles, Gavin & Howard, 2012)

Case studies are powerful tools that not only focus on results but also the context in which the results were generated (Collins et.al., 2004). IDEO (2009, p. 20) report that qualitative research methods such as case studies, enable the design team to develop deep empathy for people they are designing with, to question assumptions and to inspire new solutions. This method is widely utilized in design led research, for example, the Dott 07 and Dott Cornwall Projects (Siodmok, 2011) and the NESTA's Public Services Lab projects (NESTA, 2012). These projects are glowing examples of success for co-creation in service design being utilised for social innovation. Case studies have detailed descriptions of context, process and outcomes and do not alienate participants from the research. Thus, Case studies overcome most drawbacks of the physiological methods. But case studies have their own limitations. Case studies are subjective records of the researcher. This makes the case studies singular events, within singular scenarios. To become objective, multiple inputs from different stakeholders can be used. However, until the researcher is part of the project, subjectivity remains within the case study. A well defined scope of study is crucial for the case study, yet this also means that most case studies end up considering co-creation process, people and outcomes all as indivisible parts of the scope of research. Researching process on its own is crucial for objective analysis of co-creation, as the outcomes can take precedence and can end up justifying the process (Seppa, 2012). Thus, using case studies become insufficient.

- » Survey as a Psychology based method for gathering empirical evidence of change in experience

Psychology based surveys pre-define context and enquire into the process. The enquiry is of real life scenarios and can focus on the process while not letting outcomes influence the research. The questionnaires can be designed to gather as much information as needed about co-creation, but survey as a research method has a limitation because questionnaires are impersonal and rigid in the data they provide. The researcher can either confirm or deny certain facts, but cannot find new information outside the scope of the research.

Conducting Research

This research studies PG student working with the urban redevelopment community in a Northumberland post-industrial town. For this research, a combination of abductive, inductive as well as deductive thinking, and puts forward a mixed methodology for holistic understanding of the co-creation process. This research can be understood through an interpretation of Schon (1983) 'Reflective Practitioner'. The researcher in this research is just another tool, recording and analysing the reflections of a practitioner. It is appreciated at this point, that a certain amount of subjectivity is always expected in any qualitative research, but this can be tackled by defining robust coding and analysis techniques.

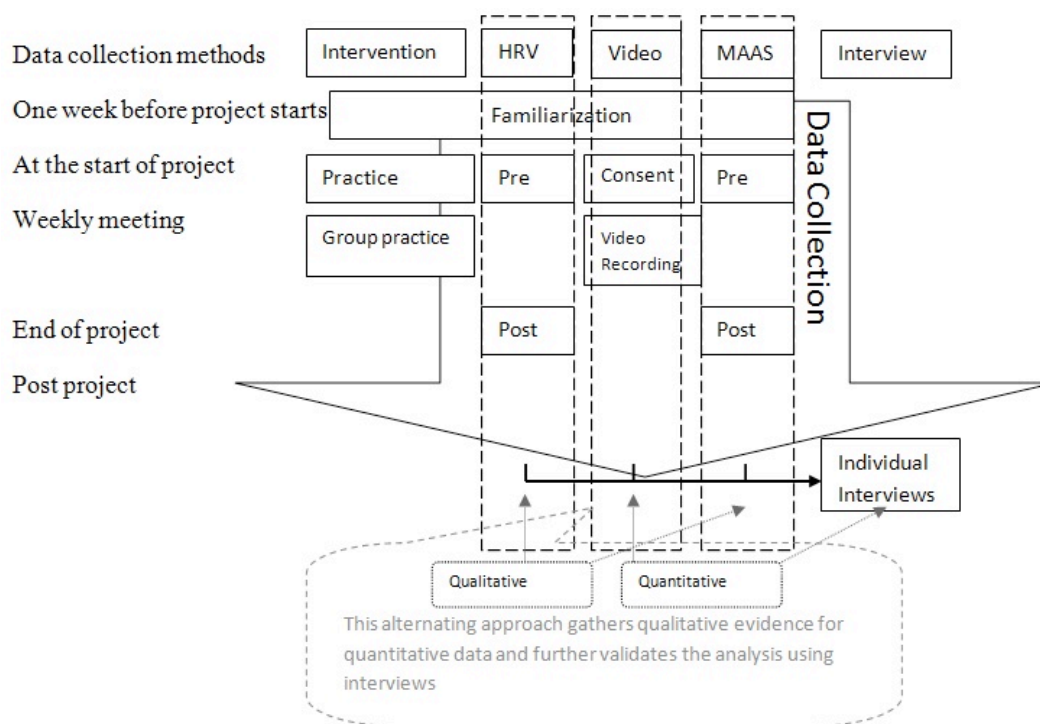


Figure 1. Pictorial representation of the research process

The intervention focuses on enhancing awareness. The participants are provided with access to the guided meditation, which they access remotely from a website. Thus, during the term of the social innovation project, the practice schedule of each participant can be monitored remotely using their unique login information. Interpretations and their representation are deeply intertwined (Denzin, 1998, p. 322) more so in empirical research. The process of evaluation and interpretation cannot be terminal or mechanical. It is an emergent and ongoing process of unpredictable iterations of analysis and reflection through writing. The evidence for sociological changes can be collected by video recording the co-creation process and through interviews utilising a self reflection technique and positive reinforcement questioning e.g. the questions asked in comparison to past hardships are followed by the steps the participant took to overcome those hardships. The researcher then highlights the progress the participants have made. Changes in the perception of participants during the project are observed using a psychological questionnaire called Mindful Attention and Awareness Scale (MAAS). Physiological changes are observed by analysing Electro Cardio Graph data to generate a Heart Rate Variability (HRV) score.

Key features of the research method

Qualitative data

Analysing qualitative data can be subjective. This is because the descriptive reflections from the participants are detailed yet a number of interpretations can be derived. To get an overview of the responses from the participants, the answers have to be expressed in a single word response and then tabulated. Though this approach is reductionist, it provides an overview of the complete data. The tabulated view can then be used to build themes for analysing interview transcripts. Following this, the audiovisual interview data is converted into a more accessible format. This can be done in many different ways. Clipping is a process of converting video recording into small pieces of recording based on certain pre-selected criteria. Clipping leaves data susceptible to physical damage because clipping is essentially breaking of information flow, which corrupts data at the beginning and end of each clip. The other method strips the audio from the video, but this leads to the loss of a very important aspect of the qualitative data; expression through body language. Transcribing is the most appropriate method for this research as transcripts of interviews can be made in different ways. The most common method is just making notes of what is said by the participant. However, the level of details can be added, like in a drama script.

Validity

During transcription, key expressions should be noted when interpretation of data can vary if the expressions is lost (Guion et.al., 2011). Thus, sarcasm, parapraxis, innuendo, euphemism, metaphoric expressions, slang etc. should be noted during the process of transcription. The transcripts are further coded at regular intervals with a timestamp of the original audio-visual file. This assists during the analysis process, also after the analysis is complete, to backtrack and verify the conclusions. Thus, validity of the qualitative data has been maintained by transcribing the interviews. The transcripts have been processed using the coding technique to maintain the confidentiality and anonymity aspects. Following these steps, the qualitative data was considered ready for analysis.

Anonymity

Anonymity is a crucial aspect of this data collection process. For maintaining anonymity, data is processed prior to analysis. The data is converted using a method called coding, where information on each participant is represented by their status as a meditative practitioner or non-meditative practitioner. This status is followed by the unique identifier number assigned to each participant or group of participant. For example, a participant in group 1 assigned the number 3 and who chose to meditate will be represented in data as Meditator 1.3. This method not only provides anonymity but also creates a back tracking system from the processed data to the raw data.

Confidentiality

Before the interview, participants are instructed to reflect on themselves. However, during the interview, some participants are expected to mention the names of their team members or the title of their current or past project. To maintain confidentiality, these sections of the interview transcripts had to be coded using the same process as explained before.

The three step analytical process

The first step of analysis in this research was generating themes or hypothesis(es) from literature of co-creation. The second step was coding data based on the themes. Codes are words, sentences, phrases, expressions etc. of the participant, categorised based on concepts determined for the research. Codes were derived by conscious or sub-conscious mental strategies that are required for analysis.

The third step was categorizing the themes based on their relevance and importance with regard to the aim of the research. The codes were categorised based on conceptual similarities or dissimilarities.

Quantitative data

The quantitative data was collected using the Mindful Attention and Awareness Score (MAAS) questionnaire and Heart Rate Variability (HRV) score. This data was collected either at the start of and just before end of the social innovation project, or periodically during the social innovation project. The choice depends on the length of the social innovation project. For example, for the six week project being studied at Northumbria University, data was collected at the beginning and towards the end of the project. The data requires normalization, which is a process of recognising the outliers using two steps viz.; goodness of fit (how a participant's data fits into data from other participants) and recognising the reason for it being an outlier. The need for normalization in statistics is, removing anomalies to provide a consistent data set for analysis.

The data collected for HRV and MAAS was checked for goodness of fit using the Anderson-Darling test, which is one of the most powerful statistical tools for detecting most departures from normality. The test assumes that there are no parameters to be estimated in the distribution being tested, in which case the test and its set of critical values is distribution-free. The Anderson–Darling test (1954) assesses whether a sample comes from a specified distribution.

$$AD = -N - \frac{2i-1}{N} (\ln(F(Y_i)) + \ln(1 - F(Y_{N+1-i})))$$

When the goodness of fit (represented by p) is lower than 0.05, then Grubbs test is used to pinpoint the outlier. The Grubbs test (1969) is based on the difference of the mean of the sample and points to the most extreme data considering the standard deviation (Grubbs, 1950, 1969; DIN 32645; DIN 38402). The test can detect one outlier at a time with different probabilities from a data set with assumed normal distribution. If $n > 25$ then the result is just a coarse approximation but it's perfect as the data sample $n < 25$ for current data set.

$$T_{\max} = \frac{x_n - X_{\text{mean}}}{s} \quad T_{\min} = \frac{X_{\text{mean}} - X_1}{s}$$

where

X_i or X_n = the suspected single outlier (max or min)

s = standard deviation of the whole data set

For analysis, the data was arranged in two groups for comparison, viz. meditators and non-meditators. The first step of the quantitative analysis is called regression analysis during which, certain assumptions with regards to co-creation can be verified to generate a set of hypotheses (Cooper & Torczon, 2005). The second step of analysis is Dependence analysis. This step was carried out to statistically verify or deny the hypotheses generated in step one

(Cooper & Torczon, 2005). The most to least statistically important hypotheses were further analysed by iterating the above two steps.

Triangulation

The key themes generated from qualitative and quantitative data were categorised from the most relevant to least relevant with regards to the aim of the project. The themes were used to find relationships between the evidence from qualitative and quantitative data. This cycle will be repeated for all possible themes. During the triangulation phase, quantitative data in the form of ECG was collected using the PowerLab device to connect the physiological state of the participant to their already analysed psychological and social states.

Limitations and Conclusions

This hybrid method is new, and risk analysis shows limitations of the method at different stages. The awareness based intervention is dependent on the intentionality of the practitioner. The remote delivery makes developing intentionality very difficult. A teacher can clear doubts and answer questions during the meditative practice. On the other hand, remote delivery is non-restrictive and a practitioner can utilise the guide at any time and any place. But the participant slowly becomes irregular in practice and may stop practicing completely. The ethical implication is about maintaining the participant's arousal level, so that they do not get bored or agitated (under aroused or over aroused). A simple monitor of the sleepiness created by the intervention can help the researcher with the problem of arousal. The data collection needs to be conducted in a place, which imbibes confidence in the participant.

The qualitative and quantitative analysis is time consuming and triangulation is cumbersome. Thus commitment of the researcher to the process is as important as the rigor of the process itself. Similarly, choosing a project, which lasts around four to eight weeks and is being conducted by a team of six to eight people, is ideal for appropriate application of the research method. Qualitative data is the reflections of the meditative and non-meditative practitioners. The researcher has to take special precautions to not draw interpretations and to remain objective. Quantitative data is HRV and MAAS scores. Data storage is a crucial part and should be planned before any data collection is conducted.

Further Research

The project selected for data collection was with the Ashington Community in collaboration between Northumbria University, Akzo Nobel and Northumberland County Council. The participants co-designed as teams along with the people from the town of Ashington to encourage social innovation in the local community. Ethical approval for this project was acquired from the ethics committee at the Faculty of Arts, Design and Social Sciences, after a consultation and feedback form the ethics committee in the Faculty of Health and Life Sciences in Northumbria University. The data was collected for the selected project using the method described above and analysis is currently being carried out.

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What triggers us?! A close look at socio-material situations of co-designing services

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Abstract

Relations between Service Design and Participatory Design have been established. Yet, on the topic of how, in the situation, in the conversation, to stage and establish fruitful co-designing practices, a closer relationship can still be established - to further support practices of co-designing for complex service futures. Based on various participatory and socio-material theoretical perspectives including my previous co-design research, this paper goes beyond focusing on tools for co-creation, and rather looks into various ‘triggers’ of participation in the co-design situation. Through analysis of some conversations around mapping people, places and things in a ‘service project landscape’ in a teaching context, it is explored and discussed what seems to trigger ‘us’ – the various stakeholders – in such co-design situations. The paper particularly takes a close look at how diverse (tangible) materials, relations and questions in various ways can trigger participation.

KEYWORDS: participation, triggers, service co-design situations and conversations, service design, participatory design.

Introduction

Services are complex and services are networks of relations between people and people and things, as Ezio Manzini pinpoints in his introduction to the *Design for Services* book (Meroni & Sangiorgi, 2011). Thus, designing in a complex world (Thackara, 2005) is a premise of companies, service (co-)designers and others who engage in (co-)designing for future services. Additionally, it is also increasingly common for these different stakeholders to engage in *fuzzy-front-end* processes and collaborations (Sanders & Stappers, 2008), where the problems, issues, challenges to be designed for are quite open and continues to be complex. Or, as Kimbell suggests (2011), we can understand practices of designing for services as explorative and constructivist enquiries during which problems and meanings are constructed among different stakeholders. Still, it is in the situation, in the quality of the conversation, that the different people, working with such often-conflicting challenges, need

to find ways to collaboratively deal with it (Buur & Larsen, 2010). It is such situations of co-designing this paper takes a close look at.

Service Design (SD) is a multidisciplinary and in many ways a hands-on field, yet, as indicated in the call for this ServDes.14 conference, within its (research) community it is still increasingly recognized, that HOW collaborations between different stakeholders are staged in practice needs more attention: i.e. how to support researchers, different business partners, ‘users’, co-producers, distributors, NGO’s, public organizations, etc. in processes of (co-) designing for innovative future services addressing complex societal and business challenges. In other words, it becomes essential how we practically stage and establish situations and conversations in multidisciplinary settings. Here the research fields of Participatory Design (PD) (Simonsen & Robertson, 2012) and Participatory Innovation (Buur & Matthews, 2008) fruitfully can intertwine with and contribute to SD.

Already a decade ago Sangiorgi & Clark (2004) suggested a PD approach to SD, and for example with the title ‘Co-creating Services’ of the ServDes.12 conference, a merge of PD and SD is in many ways already happening, as other recent SD authors also have addressed (e.g. Participle, 2008; Holmlid, 2009). Still, ‘co-creation’ is typically the phrase used in the SD community to capture the aim of supporting a desired open and ‘innovative’ multidisciplinary, collaborative atmosphere. Different from considering participation as an overall approach - so common in PD - for many service designers ‘co-creation’ seems to be considered as a ‘tool’ to choose to apply sometimes e.g. a ‘co-creation workshops’. Stickdorn & Schneider (2010) for example describe co-creation as a “core aspect of the service design philosophy” and as a “principle that can be used in conjunction with many other tools in the service design toolbox” (p. 198). In their visual and very brief descriptions of how to practically organize open ‘co-creation’ sessions, they for example recommend that the materials used can be both 2D and 3D for participants to freely express ideas, but they do not go much further into the situation than that.

From a more hands-on angle, within the field of SD, many collections (‘toolboxes’) of ways of working (often called ‘tools’) are available, for example to work with complex relations and networks (e.g. in Stickdorn & Schneider, 2010; Meroni & Sangiorgi, 2011; www.servicedesigntools.org). Partly related to architecture, in my experience, a very important practice in SD to navigate service complexities, is working with various ways of ‘mapping’ – e.g. service blueprints, extended journeys, stakeholder maps, flows of breakdown scenarios, service ecologies (e.g. Moggridge, 2007:414; Stickdorn & Schneider, 2010: 150, 176, 210). Many of these common hands-on ways of designing for services are drawing together a mixture of people, things, environments, activities and processes, and they have also proved to work well in participatory settings. However, despite the core focus on ‘touch’ points within the SD field, with the often schematic structures and largely paper-based materials, I will discuss how some conversations about services do not arise. Thus, as a possible hands-on addition, for example in the fuzzy-front-end of processes when still formulating and identifying the main challenges, focuses as well as during the initial ideation, this paper takes a close look at participatory situations and conversations engaging tangible three-dimensional materials, as a part of what I elsewhere have described as ‘Project landscapes’ (e.g. see Eriksen, 2012; Halse et al., 2010).

In particular the discussions will relate to detailed co-design situations from a service design teaching course themed *Sustainable transportation services*. This was the topic of an intense 5-week service design course with interaction design BA students at K3/Malmö University in Sweden in 2009. Working in four parallel teams the students addressed four angles of their choice on this topic and co-designed four service concept proposals: 1. Returning stolen

bikes service; 2. Bus-driver competence-courses to enhance experiences of using public transportation; 3. Sharing alternative means of transportation and leisure equipment service; 4. Coordinated public travelling system service. Co-designing several versions of a three-dimensional 'service project landscape' worked as a red thread throughout the course, formatting conversations and negotiations about core touchpoints and the complex systems and networks of the single service concepts and of fruitful overlaps between their different related service proposals. Related course structures and topics have been taught once a year since then, with me as a co-teacher and supervisor, and successfully in close collaboration with relevant local municipal stakeholders.

Data about the discussed co-design situations was captured both as video and still images and through the actual materializations, core documents, presentations, research and supervision-notes, used and made during the course. I am aware that this Exemplar does not involve many multidisciplinary stakeholders, and in that way does not capture a fully complex project set-up. Also, I am aware that the teaching setting of the course was very open yet it adopted a constrained frame for the situations discussed. Alongside five other Exemplars, this teaching Exemplar has already been thoroughly illustrated, analysed and discussed in Eriksen (2012), yet without this paper focus on 'triggers'. (The term 'Exemplar' is deliberately chosen rather than 'case' e.g. see Brandt et al., 2011). However, for this paper this Exemplar was chosen to provide detailed fragments from actual practice for the purpose to support a more general discussion about 'triggers' in co-design situations and conversations about services.

A socio-material analytic approach (to case studies)

This paper is partly inspired by Blomkvist, Holmlid & Segelström (2010) arguing for a move "from justifying service design to research on service design" (Blomkvist et al. 2010, p. 309). They see two main directions of SD research, and here I focus on the second: They argue, to support more academic rigor in SD research, the many existing (and new) SD case studies must be further elaborated in order to contribute new knowledge to the field (ibid, p. 315). The *Design for services* book (Meroni & Sangiorgi, 2011) with seventeen clustered and elaborated case studies; and the *Designing for Services* research project led by Kimbell (2011) with three compared and elaborated cases, are two recent publications doing this. Quite systematically and intertwined with an extensive study about different views of design and service in (service) design and service management theories, in her discussion Kimbell does describe some interaction details. For example, in one of the case she details how a sketch visualizing the core challenge becomes a *boundary objects* (Star, 1989) between service designers and a company manager or how a question focusing on the user's view was repeated to understand current practices. However, in her case summaries she often remains at a level of details, not really allowing the reader to get much sense of what triggered the next move in the specific co-design situation.

Methodologically, with a design background, my practice-based, action co-design research combines various approaches (see Eriksen, 2012). Partly inspired by anthropological accounts and *Actor-Network Theory (ANT)* (Latour, 2005); the socio-material analytic approach applied also in this paper is based on a thorough 'designerly' revisiting, tracing and 'drawing together' of the various data from the detailed experienced co-design situations in the Exemplar. Generally with focuses on materiality and (roles of) non-humans in co-design processes, and additionally in this paper, with the perspective of 'triggers', the narrative

accounts of what actually happened are intended to make the discussion concrete. Further, intertwining with the various chosen theoretical perspectives the main purpose is to trace some more general characteristics of ‘triggers’ in (service) co-design situations. Additionally, in a SD research context, this close socio-material look and analysis is also intended to suggest a way of understanding situated details of interaction in ‘service co-designing’ or ‘co-designing for services’ to almost paraphrase Kimbell (2011) and Meroni & Sangiorgi’s (2011) work.

Underlying participatory and socio-material perspectives

Now, let me uncover the core underlying perspectives behind the arguments of this paper. A basic principle and value when working with a Participatory Design (PD) approach, is establishing situations of *mutual learning*; aims of openness for agonistic views are therefore a core common principle throughout the process and when staging situated participatory conversations (Simonsen & Robertsson, 2012; Buur & Larsen, 2010). Another commonly recognized view within PD is that situated practice is always *socio-technical* and *socio-material* (e.g. Suchman, 2007; Björgvinsson, 2007); in many ways in line with Kimbell’s understanding of designing for services, where the designed is seen as “relational and temporal”, “socio-material configurations or systems” and that “value is created in practice” (2011, p. 41, 48, 49). Furthermore, I have previously also argued the need to understand and analyse (service) co-designing practices as such. To practically establish openness for participation many also engage with (e.g. physical) materials as *things-to-think-with* (Brandt, 2001) and acknowledge the importance of *boundary objects* (Star, 1989) as shared reference-points in the collaboration among diverse stakeholders. Also, building upon Schön’s understandings of reflective practitioners (1983), that the *back talk of the material of the (co)design situation becomes a part of the reflective conversation*. Within structures viewed as performative event-driven processes, more practically, hands-on in collaboration with many others, I have many years of experience of staging and formatting quite open ways for engaging diverse stakeholders in co-designing (e.g. Halse et al. 2010; Eriksen & Vaajakallio, 2013).

Finally, based on these PD experiences, principles and views, this paper also largely builds upon underlying assumptions and arguments in my doctoral research on *Material Matters in Co-designing* (Eriksen, 2012). There I e.g. show and argue how *materials are participating* and having *delegated roles* in co-design situations not only as a part of a tool or method for collaboration, but rather, (as people) they are participating and intertwining in the continually transformative practices and networks of co-designing (projects). This assumption and argument largely builds upon *Actor-Network-Theory* (Latour, 2005) and *communities-of-practice* perspectives (Wenger, 1998) that suggest how participation and relations (of human and non-human actors) cannot be separated. I will return to these later. Now let me get into details of ‘triggers’ for participation.

Diverse materials as triggers

Different materials, as much as people, are often ‘invited’ to participate into collaborative settings such as workshops, to explore the content of current project topics and challenges. Event organizers often bring these materials along, and of course also depending on how

they are introduced and how their situated use is formatted, they can (or can not) open up for different focuses, conflicts and conversations (e.g. Buur & Larsen, 2010).

On the first day of the Sustainable transportation services course, co-designing the ‘Service project landscape’ started from a white foamboard (format) on one table in the middle of the room (Figure 1) and a ‘buffet of materials’ on another table. The ‘buffet’ included different kinds of fabrics, paper, buttons, pipe-cleaners, etc. as well as brochures, magazines and newspapers more or less related to the topic (Figure 1 - middle). With the one restriction not to write on post-it notes, as teachers we gave the students an open invitation to modify and add material to the board capturing what they found important in relation to the course topic.



Figure 1: (left): Some start around the foamboard base of the ‘service project landscape’; (middle): Others start by making with selections from the ‘buffet of materials’; (right): The materializing landscape triggers negotiations of meanings and relations of the added content material.

Participant responses varied widely. Some went directly to the buffet, grabbed some materials and started making something, others gathered around the still-white foamboard base format with a bag of small shiny rectangular buttons picked from the buffet and started their dialogue around organizing them in a corner of the board, while yet others started by flipping through and tearing out images and words from the available magazines and newspapers. Different tangible materials appealed to different people, personally they were comfortable with and got triggered by different materials, but even though they were mostly making in parallel, there was lots of talking (Figure 1 – left & middle). Conversations about what one was doing, what it was supposed to mean, how it connected with what others were doing, etc., and as soon as it was placed in the landscape further discussions of relations to what was there already emerged.

More generally, one perspective for understanding why this happens, is the learning theory of *communities-of-practice* developed by Lave and Wenger, where organizations are understood as different communities with their established ways of ‘participation’ and what they call ‘reification’ processes (Wenger, 1998). They basically argue, that processes of reification (materialization, making into a thing) are intertwining with participation. However, when people from different *communities-of-practice* get together, so common in multidisciplinary (service) co-designing processes, what sometimes causes conflicts is that people are not comfortable with the processes of doing and making commonly applied in another community. There will always be different interests and preferred practices among different stakeholders, but as Eva Brandt (2001) and I (Eriksen, 2012) previously have shown and argued, to make such conflicts fruitful, establishing a (shared) temporary project-community for example through collaborative exploring and making, has proved constructive (see also

Halse et al, 2010). In the Sustainable Transportation Exemplar, all the students could be viewed as coming from the same community (as interaction design students), but they were all new to the service design perspectives and approaches. Also, as the story above shows, different materials did appeal to them individually, and the broad repertoire in the buffet opened up for many triggers to start making and to start different conversations about what they were beginning to work with, which led to the creation of four thematic teams.

Relations as triggers

As many SD practitioners and researchers argue, services are composed of complex network of people, places, objects, activities and processes (e.g. Stickdorn & Schneider, 2010; Meroni & Sangiorgi, 2011). As described above, the various ways of mapping that are widely explored in many service design processes, largely aim at navigating complexities of current and/or future services. Mapping can open up for exploring, uncovering and negotiating 'gaps' in current relations and links that could establish new relations – for example between different service providers or across different departmental borders within municipalities.

In the Sustainable transportation services course, after the first service project landscape session described above, the students undertook 2 ½ weeks of quite conventional field observations, interviews with relevant stakeholders, sketched journeys of existing practices, presentations of two-three possible service concepts and quick roleplaying with simple mock-ups of possible core touchpoints. Then we staged for all the teams to get together again around their shared landscape. It had been in the corner of the classroom, and when it was 'brought to life again' – or it was 'de-frosted' as Björgvinsson (2007) suggests to phrase such processes - much of the content and especially their positions from the first day/version did not make much sense now.



Figure 2 (left): Again conversations start in different ways; (left-middle): Some clean up and re-organize the shared service landscape; (middle-right): The stolen-bike-service team e.g. negotiates functionalities and relations of the core spaces of their service;(right): With the landscape discussions of relations and overlaps between their different proposed sustainable transportation services arise – in the front the 'station' and equipment by the team working with a lending-service of alternative means of transport and in the back the stole-bike service spaces.

Again, the students were working with different materials, some started by cleaning up in the current landscape, while others were making new miniature things (touchpoints) and identifying places matching with their currently proposed service concepts (Figure 2 – left & left-middle). To start with, the four teams were now mostly working in parallel, however, when their different new parts entered the shared landscape, it became clearer and triggered conversations within and between the teams about overlaps and possible relations between different core parts of their service concepts (Figure 2 – middle-right & right). The team working with lending out alternative means of transportation for example spend most of the time by the buffet making examples of Here-you-can-borrow-everything 'stations' (using disposable cup, balloon, sticker) as well as examples of what they would imagine to lend out

– for example bikes and blankets. Yet, when they entered the landscape they were negotiating their positions ‘in town’ with some from the other teams, conversations about the functionalities of the stations also arised. By relating to the stolen-bike-return-and-repair service, it triggered conversations of how all the things they imagined would be lent out, would be repaired and transported around town between the lending stations. They could use the repair workshop and the trucks from the bike-service, but to avoid having to move everything to one place, the ‘manned’ stations could probably also work as places for fixing stuff – and maybe even also for registering a stolen bike.

Further, towards the end of making the second version, as a teacher I deliberately asked them to individually add specific notes with names of backstage actors that they would further keep in mind in their continuous processes. This partly relates to the service design practice of working with ‘stakeholder maps’ (e.g. Stickdorn & Schneider, 2010, p. 150-153). Our (pedagogical) motives for doing it this way, in this already complex ‘mapping’ were twofold. First, not to isolate and only focus on people, but to continually keep the focus on the relations between people, places, things, activities and processes in the overlapping service networks. Second, making within and across the teams enabled possibilities of *mutual learning* by uncovering sustainable relations and overlaps of resources between their otherwise separate services and processes.

More generally, as briefly mentioned above, the recognition of networks as both human and non-human actors (things, laws, places, events, etc.) is a core concept in *Actor-Network Theory* (ANT) (e.g. Latour, 2005); in many ways practically overlapping with how these students and service designers broadly pay close attention to the various human, tangible, technical, touchpoints (and in-betweens) of a service. ANT is one theoretical perspective and approach for understanding the importance of relational mappings, still Bruno Latour argues, applying ANT is not simply to identify actor-networks of humans and non-humans. Rather, he claims, the importance is to ‘draw things together’ related to ‘matters of concern’ (e.g. sustainable transportation challenges of the city) and especially to trace the ‘mediators’, the actors making others act often in unexpected ways in such complex networks. In *Reassembling the Social* Latour (2005) further distinguishes between the concepts of these *mediators/actors* making us act and the, to him less relevant, so-called *intermediaries* not causing any transformations (ibid). With this argument Latour does not particularly relate to design practices, but tracing *mediators* that makes others act is fruitful to further understand what happens and triggers participants in situations of co-designing for service.

As described above, it is not fully clear which of the content that came to work as *mediators* in the continuous four parallel processes of further detailing sustainable transportation related service concepts. Yet, something did happen in the situations of collaboratively reworking the second version of the sustainable transportation service landscape. For example, in a very hands-on manner, the relations between and functionalities over time of both the (manned and un-manned) lending-stations and the bike-repair-trucks did mediate and trigger the participants to further develop their respective service concepts and identify overlaps that eventually would make both their service proposals more sustainable over time.

More broadly, returning also to the diverse materials as triggers, for example the white foamboard with the *delegated role* as the base *format* of the service project landscape, together with other guiding instructions and the whole scheduling and staging of intertwining this collaborative process throughout the course, also became a *mediator*. Combined with the broad ideas of SD, practically it was mediating the students to act and collaborate in more holistic ways than previously in their training as interaction designers.

Questions as triggers

Lastly, (often verbal) questions are very common in conversations with others, and they sometimes work too as *mediators* triggering people to (re)act. Responses to questions – often also verbal – can be many of course depending on the specific situation and situated relations. It happened in the situations of collaboratively making both the first and second versions of the service landscape, that several of the questions we posed as teachers triggered the participating students to respond in various ways.

As interaction design BA students, the participants here were very used to focusing on the (frontstage) user experiences of interactions, for example, when deliberately asking them to further consider the backstage of their service proposals, after a couple of repetitions, it made them act. The team working with the stolen-repair-bike-service for example gathered around their corner of the board as the question triggered them to discuss by referring to the different parts they had made and ended up slightly rearrange the spatial relations between their (frontstage) ‘office’ and all the other (backstage) support needed to provide the service such as the ‘storage space’, the ‘repair workshop’, trucks, and later the P-guards walking around the streets scanning and spotting stolen bikes were added too. The team working on developing competence-training courses for bus-drivers, in a sense focused their whole service backstage, with the expectation to then enhance the driver’s capabilities to assist in creating a more positive experience for users of the public transportation. Still, the question triggered them to add yet a bus – the green regional bus – to remind themselves and the rest of us about the importance of relating support-services like they were proposing both to city and regional bus services, to different actors in the transportation network.

More generally, again with the broad view of materiality applied in my research, questions can too be considered as a ‘material of the (co-)design situation’, to paraphrase Donald Schön (1983). As a part of their work on *innovative learning spaces* and *innovation pedagogic*, Aakjær and Darsø (2014) too empathize how carefully formulated open questions can be an important and mediating format both in the preparations and running of meetings and when wishing to change conversations. The questions we posed as teachers triggered new conversations, and rather than only answering verbally, the complex but quite open layout of the landscape (e.g. rather than a schematic grid) easily allowed the participating students to collaboratively see, negotiate and tangibly make and re-arrange their responses.

What triggers us - Discussion

Through this socio-material analysis of taking a close look at some co-design situations with (parts of) the ‘service project landscape’ as a *mediating boundary object*, it is clear that collaborating in such ways triggers lots of different conversations about services. In other words, many of the materializations and identified overlaps captured negotiated meaning in the situated socio-material interactions (Heinemann et al., 2009). More broadly, as partly shown, and as seen in many other co-design situations too aimed at *mutual learning*, working with questions and diverse tangible (*content* and *formal*) materials can assist in inviting all participants to contribute and share their knowledge, independently of organizational status and power asymmetries (e.g. Simonsen & Robertsson, 2012; Buur & Larsen, 2010).

Practically, throughout many of the conversations, intertwining with the making, much of the concerned practices could be described as collaboratively *naming*. Donald Schön’s widely referred work on reflective practitioners, particularly from in his studies of architectural

practice, has recognized that in the *reflective conversations with the materials of the (co-)design situation* a core characteristic of design practice involves *naming* as a part of *framing* and *reframing* the problems/issues to attend to (Schön, 1983). The many ways of mapping used in architectural as well as service design practices too intertwine (collaboratively) *naming* different parts or clusters of the mapping. But names only as words e.g. on post-it notes, can too be associated with so many meanings, depending on the *communities-of-practice* of the participating stakeholders. Thus, exploring services through making, for example as exemplified above, sometimes happens in silence, but typically not for long. At least in those situations, often, the making was exactly intertwining with talking and *naming* as a part of negotiating the specific meanings of the different materialized parts entering the project landscape. This triggered the participants into different conversations about services. But you might still ask: what are the purposes of triggers?

In short, combining various *formats* and triggers, as the ones discussed in this paper, in situations aimed at co-designing for services, can enable e.g.: evening out hierarchical imbalances between participants and allowing people to effortlessly contribute with their different perspectives; identifying and formulating core challenges which the service being designed for actually should address; deepening the understanding of the complex relations of people, places and things intertwined in a service or network of services; developing (new) ideas for (frontstage and backstage) touchpoints – not for isolated interactions but for enabling continual relations / thinking beyond service moments/ interactions and thus further exploring (parts of) what is needed to make a service sustainable over time.

As emphasized in the beginning of this paper the basic purpose of establishing triggers for participation in processes of co-designing for services, is largely to enable situations of *mutual learning*, so much at the core of a PD approach. This, I will argue, also should be at the core of any co-designing for service process – also to support ownership of the future solutions. In the situation, some are triggered by words, some by images, some by pipe cleaners, some by uncovering relations, yet others by provoking questions; therefore when working in multidisciplinary projects with stakeholders from various *communities-of-practice*, establishing triggers for different people comfortable with different (participation-reification) practices is key here. Providing different triggers to invite for engaging in co-designing enables an indirect means to commence talking about complex challenges and possible future services, which may be difficult to approach head on.

To summarize, as initially mentioned, the fruitfulness of intertwining Service Design and Participatory Design have increasingly been recognized and established during the last decade. Still, in the future of co-designing for services, I encourage an even closer relationship of theoretical foundations, basic principles, approaches and practical ways of working. In my future practice-based co-design research, I aim to further trigger and engage in such conversations and relations.

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How to get a leader to talk: Tangible objects for strategic conversations in Service Design

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Abstract

This paper presents explorative work investigating how tangible objects can assist the understanding and discussion of the strategic implications of future scenarios. The paper draws upon theory and practice from co-design, particularly from the area of collaborative workshops using gaming, objects and tangible tools.

Three iterations of objects were developed, then evaluated through discussions with leaders in three commercial service providers. The results show that the tangible objects encouraged efficient and effective discussion and reflection regarding strategic implications of future scenarios. Further, they directed the discussion towards unexpected areas and helped the leaders gain an overview that supported meaningful discussion of future strategy.

The paper contributes to the field of Service Design by bridging co-design and service design and introducing tangible models, particularly as a tool for strategic discussion. It describes the development process and the results and discusses the important role that tangible objects might play in the future service co-design process.

KEYWORDS: co-design, tangible objects, business strategy

Introduction

Design is moving from designing objects and services to designing business (Martin, 2009). This is particularly true for service design, since design for service (Sangiorgi, 2012) is closely related to the design of the organisation itself. Service designers are therefore participating increasingly in strategic discussions (Gloppen, 2012) and leadership insights, will, in the future possibly become as important as customer insights.

Service Design has a tradition of using visualisation as a tool in the co-design of services (Kimbell, 2009, Segelström, 2010) and we regularly see post-its and posters as part of co-design processes. However, recent developments within co-design have focused upon

tangible objects in co-design processes. This could be gaming, using tangible pieces (Brandt, 2006), or tangible objects in group processes for business model innovation (Buur, 2012).

Within co-design and participatory design, the use of tangible objects has developed rapidly. However, we do not see the same development or uptake of tangible tools within the Service Design literature, and would, with this paper, like to encourage a natural migration of service design practice towards using tangible tools, and developing a link to the co-design field.

This study presents the results of an explorative five week study as part of an MA service design course. It was run in collaboration with the Customer Care research project, a three year project, developing new organisational approaches to the improvement of customer experience. This work relates to one of the first phases, in which scenarios were developed for the year 2020. The project wanted to discuss these scenarios with business leaders, to obtain their perceptions of the strategic challenges that the scenarios implied for their organisations. Further, we wished to discuss typical organisational measures that might need to be introduced in relation to these foreseen futures. The work required a close collaboration between researchers and students, as the students joined a research team.

Tangible models in Co-design

Wenger (2002) claims that tangible objects in co-design “may create tools, standards, generic designs, manuals, and other documents – or they may simply develop a tacit understanding that they share” (Wenger et al., 2002, p. 5,9). This leads to one of the main characteristics of co-design: it is viewed as an intertwining relationship and inseparable pair of “participation and reification” (Wenger, 1998, e.g. p. 63,105). Reification is viewed as ‘making into a thing’, (p. 133) and as “...giving form to our experiences by producing objects” (ibid, pp. 58-60).

Brandt (2006) introduces the notion of design games and how they can be used for organizing and aiding participation. She notices the need, in design processes, to include project participants actively in the design process, and suggests design games as a way to do so. Brandt describes how ‘rules’ and ‘tangibility’ are important factors for different situation in co-design that should be taken into account.

Bogers & Sproedt (2011) discuss playful collaboration in the field of open innovation. They seek the balance between pre set rules at the beginning of playing a game and then let the game flow free with room for improvisation while using tangible objects in the game play. Sproedt & Buur (2009) also describe innovation as a game where again tangible objects are used. Here innovation is seen in a business context.

Alvarez (2012) mentioned the same types of tools with a specific focus on education. Mitchell and Buur (2010) focus upon tangible models in the field of participatory innovation with a strong focus upon business models. They show how tangible model sketches help to:

“Facilitate thinking in systems, create simplicity, express the vivacity of the business, take it easier to think big, provoke new connections and associations, support story telling, work across language barriers, and provide easy to recollect experiences. In addition the interactive and collaborative nature of tangible business models show potential as catalysts to co-construct new possibilities for innovation.”
(Mitchell & Buur, 2010, p32)

Lübbe (2011) sets up principles for business modeling to frame organizational knowledge through the use of particular thinking tools. He recommends these thinking tools to be

tangible, basing this for example on the work of Clarke (2008), who suggests thinking does not only happen in the head but in collaboration between the mind, body and the world.

As well as Brandt (2005), Buur & Mitchell (2010) describe tangible model sketches functioning as boundary objects (Star & Griesemer, 1989). Boundary objects have attributes that enable a common understanding across disciplines. Star & Griesemer define boundary objects as being both plastic enough to adapt to local needs and constraints, yet robust enough to maintain a common identity. Boundary objects do not mean that they form agreement in groups, other than an agreement of representational meaning. Carlile (2002) describes three classes of boundary objects; syntactic, semantic and pragmatic, with specific reference to product development. Carlisle follows this up by describing the enabling characteristics of each type of boundary objects: syntactic=transferring, semantic=translating and pragmatic = transforming (Carlile, 2004). A pragmatic capacity establishes common interests for making trade-offs and transforming domain-specific knowledge. A semantic capacity develops common meanings for identifying novel differences and dependencies and translating domain-specific knowledge. A syntactic capacity requires the development of a common lexicon for transferring domain-specific knowledge. According to Carlile, boundary objects have the potential to transform thinking within a team. He describes this in the following way:

The ability of actors to change their own and other's knowledge only emerges when there is a pragmatic capacity, a way of representing the consequences of how the knowledge of one group generates consequences on the knowledge of another group, and then making changes accordingly (Carlile, 2004, p. 563).

Furthermore there is the idea of metaphors in co-design. Lackoff & Johnson (1980) describe how central metaphors are as part of our everyday lives. The use of metaphors is so much embedded in our way of thinking that we express a considerable amount of our thoughts through them. For example Pedersen & Buur talk about how metaphors in games and movies create understanding in co-design. (Pedersen & Buur, 2000). Van Oorschot (2013) has a critical view on the use of metaphors, based on the work of Djajadiningrat, Wensveen & Overbeeke (2005) who claim objects should have meaning in themselves. They take the position that because metaphors are so much embedded in our thinking means that the designer can allow himself to chose the simple solution by using metaphors in new design. They consider it is the responsibility of the design to create new meanings. Translated to tangible models von Oorschot (2013) introduces the idea that in the field of Co -Design it is the responsibility of the participators to create the meaning of material, rather than holding back too much on the presumptions that lie in the use of metaphor.

As shown above, several researchers show that tangible objects help in developing conversations in co-design, participatory design and participatory innovation. However, this vibrant discourse occurs in fields related to service design and there is little discourse within service design itself about this. Looking through earlier ServDes conferences we see a focus primarily upon visual tools. For example Teal et al. (2010) discuss tools for collaboration in Service design and point to visual maps and service narratives. Diana, Pacenti & Tassi (2009) discussed tools for communication in service design and describe visualisation to give insights in maps, action flows and to tell service narratives. The area of enactment and role play are described by several, including Kaario et al. (2009). However, tangible objects are not specifically mentioned at ServDes. We aim therefore with this paper to bridge the gap between these related fields, by bringing tangible models into the ServDes conference. In addition, we contribute new knowledge specifically related to tangible models related to scenarios within a service design context.

What we wanted to achieve

The project wanted to engage business leaders at DnB (Norways largest bank), Telenor (a major global Telco) and the Norwegian Post in strategic conversations regarding scenarios for 2020, in particular one specific scenario. We wanted them to talk, reflect, explore and understand all at the same time. Not only this, we wanted to help them discuss things that might take them outside of their learned corporate position, and perhaps reflect upon new aspects to them. In addition we wanted to give them insights into strategic aspects that they might not have thought about just through talking.

Its important to state that scenarios are possible futures, and that the project has developed multiple possible futures. However, to make the task a little simpler, we chose to focus upon one specific scenario (see figure 1).

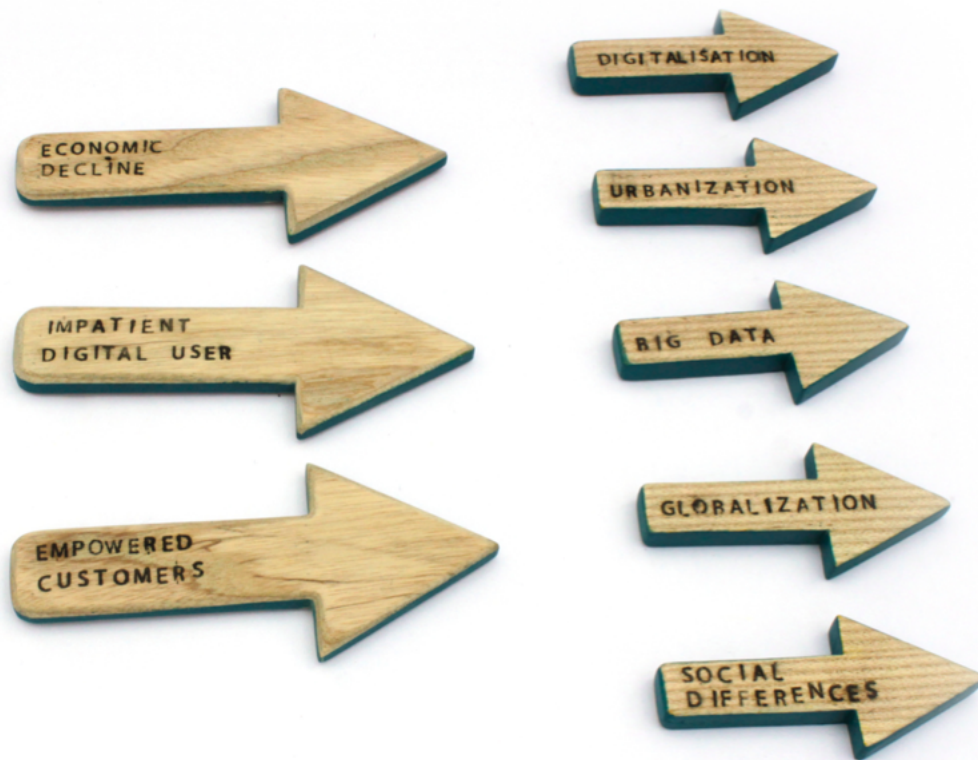


Figure 1: This describes the scenario chosen for discussion with the leaders. The larger arrows are the uncertain drivers, used as a basis for discussion for this particular scenario. The smaller arrows are the certain drivers and used across all scenarios that were developed. (Image: AHO students; SD 2)

The discussion that the project wanted the business leaders to engage in related to their perceptions of the what and the how of change that was needed within their organizations to ensure that their companies were strongly positioned within the future market described in the scenario. We were kindly allotted one hour each with a leader in each of the companies to explore this question, and wanted to get the most out of this one hour. An hour goes very quickly, and we wanted to get more out of a discussion than an interview alone would give. We felt that tangible objects would help us do this.

What do leaders do, and what would be a successful solution?

As a basis for idea generation we developed a list of tasks and responsibilities that leaders have in organisations. This was to give context to the task, and aimed to help generate

metaphors for the final solutions. This included terms such as balancing, seeing the bigger picture, taking responsibility, managing assets, develop strategies etc.

We also discussed the success criteria for any solutions, and the trade-offs that might be necessary when choosing solutions. We wanted to very much focus upon finding metaphors that could assist a leader to discuss and explore, and through this have new insights. We were clear that metaphors have different characteristics. Some metaphors afford a great degree of flexibility, whilst others are more narrow. Some metaphors might have a very low threshold for understanding the metaphor, allowing rapid take-up, whilst others might have a higher threshold that might require explanation, thereby slowing progression.



Figure 2: We developed criteria for the solutions we wanted to develop. (Image: AHO students; SD2)

Three iterations: from five prototypes to one final version

The students worked through three iterations in small groups, and increased their level of prototyping for each as they went along. The first iterations of the tangible models explored a wide range of options. These ranged from direct metaphors, such as a journey, to solutions with little metaphoric association, such as a doll with different clothes (see figure 3).

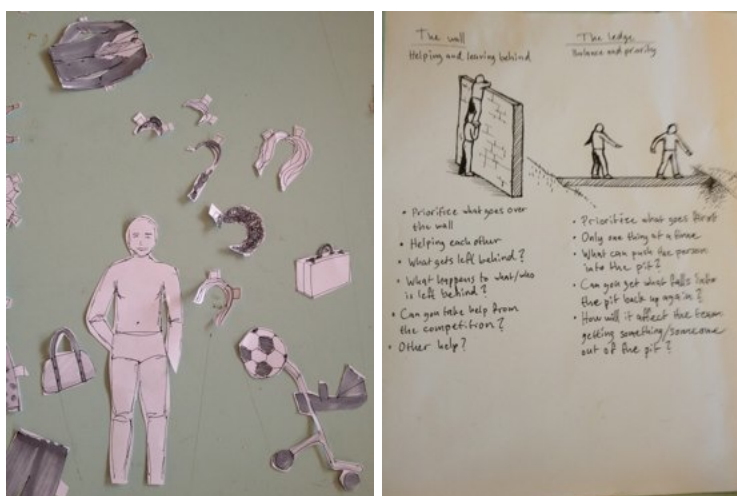


Figure 3: Two examples of simple first ideas and mock ups. The dress up doll on the left, and the obstacle course on the right. These ideas were discarded after testing. (Images: AHO students SD 2).

These first iterations were simple mock-ups and sketches and each group developed five alternatives. These were then evaluated, and reduced to three, which were prototyped and tested. From these, one was chosen for further development and then finally tested with leaders in the three participating companies (Posten, Telenor and DnB).



Figure 4: Three final solutions were tested during one hour interviews with leaders. Top left, Flight 2020 using a migrating birds metaphor. Bottom left: Angels, a multi layered solution using blocks, which didn't use a metaphor. Right, The Boat, using a clear journey metaphor. (Images: AHO students SD 2)

Evaluation and discussion

Each of the three tools was tested with a different company. 'Flight 2020' was tested with DnB (a bank), 'The Boat' was tested with the Norwegian Post, 'Angels' was tested with Telenor (an international telco). The student groups were each responsible for planning and running a one hour discussion with a leader in each company. Discussions were filmed.

Semi structured interviews were used to interview the leaders from the companies during a period of one month after the discussions took place. The interviews were recorded but not transcribed. Group discussions with the students discussed the results.

Reflective conversations with the materials of the design situation

Agger (2012, p. 219) describes the use of tangible objects and states that they can help "identifying issues of interest, and concerns". This fits with the goals of the project, namely to get leaders to discuss issues of relevance when considering a particular future scenario.

Brandt et al. (2008) discuss tangibility in relation to tangible objects and design games, stating:

An important point with using exploratory design games as formatting design dialogues is that they can engage intended users, various stakeholders and the design team in joint inquiry into existing practice and participatory design of possible futures. (Brandt et al. 2008, p. 60)

This highlights two aspects of relevance to our work, firstly engaging stakeholders, and secondly enabling joint enquiry related to possible futures. They further state that:

For games to be engaging for all parties involved, they must be both relevant and challenging. (p. 60) ...these materials helped them remember many different issues and situations and thus sped up the process of discussing valuable things within a short timeframe. (p. 61)

This helped us develop criteria for evaluation, namely relevance, challenge, aiding memory and the ability to move quickly towards relevant and valuable aspects. The latter of these is particularly important, since we only had one hour available with the company leaders.

Our evaluation of the tools show that the developed objects were relevant to the desired task, namely to support discussion about the strategic implications a specific future scenario. All three groups found the conversations quickly became relevant and went into detail.

The model allowed us to quickly move to very interesting parts of the discussion. It would have taken hours to get to the same result without it.

... If I had called a meeting and said we would make 10 strategic decisions within an hour, then everyone would have said it was impossible. Interviewee from a bank

We also observed that the tools, due to their physical form, aided memory and seemed to reduce cognitive load, such that the participants were free to discuss implications due to multiple interactions of scenario variables. This supports the research by Tversky et al. (2002) showing cognitive improvements through manipulation of tangible objects. It was also clear that the tangible objects supported *joint enquiry* such that the discussion developed rapidly through dialogue around shared understanding and meaning. The objects can therefore be described as boundary objects (Star 1990). Furthermore, the objects allowed the discussions to very quickly go into detail regarding challenging questions. This covers two aspects, firstly the affordance of the objects allowing a rapid shared understanding, and secondly, the ability of the models to 'ask' challenging questions. This ability of the models to challenge thinking is particularly interesting, and it is difficult to identify exactly where such challenges come from. It seems that they partly come from the reframing of an issue through its transformation into form (i.e. its reification). Naming is an example of this, since the models require that individual aspects are given names with shared meaning. This challenges participants to be specific, and names therefore become important. Secondly, the metaphors or objects have both possibilities and constraints, and challenge the participants to think and rethink their understanding of a situation. For example, the boat model had both a sail and the possibility to add engines. A discussion ensued regarding what is the sail of the organisation, and what are the engines (if any). These were rapidly converted into a discussion regarding core competences of the firm, but not only this, the objects required specific weighting - which core competences are the wind, which are the engines, and what makes them different? This physical reframing of a question was clearly visible and challenged the participants in a positive way. The bank leader expressed this as follows:

I had to prioritise, and that is something that we are not good at here in the bank. At a strategic level, you have to prioritise.(The physical models) helped me prioritise. The physical form, well the fact that it was physical gave it an emotional direction, I felt that (the customer segment) was going to literally disappear (when it was removed). Interviewee from a bank.

Concept shifts, role shifts and causality shifts

Buur (2012) describes specific effects that can be observed from the successful use of tangible objects in conversations. He calls these ‘concept shifts’, and ‘causality shifts’ and describes them in the following way:

Concept shifts are moves in which participants discover new meanings of the words they use. In daily conversation, the meanings of words we use are seldom up for discussion. But with the tangible objects that from the outset have no connotation relating to the business under discussion, every object poses a question as to what we mean by the concepts. The connotations become explicitly socially negotiated. Causality shifts are moves in which participants discover that the business logics may not apply in the way they assumed. Customers or competitors react in unexpected ways. The rolling balls cannot be controlled in simple ways. These moves relate to changes in assumptions. (Buur, 2012, p. 12)

We could clearly see both concept shifts and causality shifts through the use of the models. The naming of objects that the metaphors required gave important reflections upon terms and their meaning. For example, the leader from the Norwegian Post picked up a motor that could be attached to the boat, and discussed what the motor could represent, and did represent. This discussion was not only a discussion to fit his business understanding to the metaphor, but was a discussion regarding the concept of a motor, a major driving force, for the organisation.

When it comes to causality shifts, it became clear that the models challenged the business model logic that the leaders had, but did so in a constructive way. This was both observable, but also reflected in the interviews afterwards. Two interviewee comments show this. Firstly how the models cause a restructuring of something already known, and secondly that they adapted their assumptions for the scenarios.

I liked the associations, boat, motor, islands etc. They made me structure things I already new in a different way. Interviewee from the Norwegian Post.

I experienced that I thought both more deeply and differently. Something happens in your head when you have objects to move around, such that you see the scenarios in a different way. Interviewee from a Telco.

Integrated/ synthetic thinking

In addition to the categories mentioned above, the models seemed to support the integration of many aspects into a new whole. This can be described as a synthesis that is supported and encouraged by the physical representations. It is often a characteristic used of designers and design thinking, and we can recognise that the type of reflection encouraged by the models was *designerly* in character. One of the interviewees said the following about this:

I thought more holistically about the different customer segments. The ability to move them and between them. I saw things more holistically, at a higher level. That helped me. Visually and physically it was really helpful that I had an overview of the whole. I saw ahead and from above at the same time. Really useful. Interviewee from a bank.

This is an aspect we haven’t seen commented upon in co-design, where the focus is often upon shared group understanding, rather than individual synthetic thinking. This study does not offer enough data to be able to conclude, but it can be a useful direction to explore.

The role of metaphor

Two of our solutions were based upon metaphor, whilst the third was abstract, and although this does not give a great deal of data, it was clear from the evaluation that the metaphor-based solutions worked best. They allowed the leader to quickly understand the context of the discussion, explain the meaning attached to the various aspects of the metaphor and share this meaning - the metaphor afforded a contextual framing without dictating the meaning or role of specific objects. As an example, the solution 'Flight 2020' set the context of a journey, but the leader themselves had to identify who the birds were (were they the company, the customers, the employees?), the stops underway, the food consumed, the dangers on route etc. This offered considerable opportunity for naming and meaning reflections. The journey metaphors had a very good affordance with the scenario discussion:

It was really good that you chose a journey. Genius. ... the metaphor supported a shared vision and how we can get there. The journey idea helped. ... The flexibility of the model allowed multiple interpretations and views. It was important that some things were predefined in the model, so we avoided a lot of discussion before getting going. Interviewee from a bank.

We were interested if the metaphors limited discussion, and although based upon very limited data, we conclude that metaphors do not do this. Indeed, we consider that metaphor asks questions of the participants, since they have to transform their business thinking to a given metaphor (and vice versa) with certain affordances as a guide. This challenges the leaders to choose terms with care and to be precise. Such a transformation gives new insights, and therefore supports innovative thinking.

We therefore give cautious support to the use of metaphor as an enabler for discussion. although the choice of metaphor is important and should afford the type of conversation desired. At the same time, it should not dictate rigid terms and identity. We would like to see further work to explore this area, particularly the notion of metaphor fit for tangible objects.

A move towards tangible models in service design

In the introduction we suggested that knowledge about tangible models from the field of Co-Design might contribute to service design, particularly when it comes to strategic conversations. This study, shows that service design could benefit from the move from a post-it based approach, to a physical model based approach (we are aware that service design has some tools from co-design, such as role-play, as a basis tool in the toolbox). We conclude that service designers can utilise their design backgrounds to make the move from paper to physical models, and that service design can benefit from physical representations.

I think the (physical) tools are more useful than drawings. Everyone can move a boat. If you encourage people to draw (in a workshop), they just don't. Interviewee from a Telco

The importance of form and finish

Finally, we would like to highlight the importance that the aesthetic qualities of the solutions had upon the discussion. The high quality finish communicated aspects to the leaders about the situation. These were variously commented upon as professional, serious and planned:

I was impressed by how the model looked. I realised that they had really prepared. It's important how things look. It was serious, and prepared. It gave a professional impression. Bank Interviewee.

This supports earlier findings from the authors, also from areas such as cultural probes. The finish and attention to detail have importance for the dialogue that follows. Not only this, the whole and the detail create a form for implicit agreement between the designers and the co-designers - you have put effort into this, and therefore, so will I. This has therefore consequences that make the start-up of a session easier and more effective.

Conclusions and further work

We have shown that tangible objects function well as a means of getting a leader to talk and they enable effective and efficient use of the limited time that a leader has available. The objects encourage the leaders to rethink roles and structures through manipulation of objects, and they help challenge many taken for granted assumptions in business.

One aspect that deserves further exploration is the relationship between metaphor and the content of the discussion. We have found that metaphor was useful in the discussions, and our results indicate that the correct choice of metaphor affords a good reflective discussion. However, our results are based upon far too small a sample, and the results really encourage us to explore the role of metaphor in tangible objects for strategic discussions.

A second aspect to explore is if and how tangible objects encourage synthesis, or integrative thinking, and as such, encourage what can be termed “design thinking” from participants. Our limited observational data imply that this is the case.

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Using Information Visualization to Support Creativity in Service Design Workshops

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Abstract

In this paper we outline ongoing PhD research in which we are exploring how information visualization can be used to make quantitative data more accessible and engaging to key stakeholder representatives during service design workshops. We also outline how such visualizations could be used in conjunction with applied creativity techniques to identify ideas for design requirements that are both novel and appropriate, and therefore considered creative. We illustrate this research with details of a workshop held with customers and staff of E.ON Energy in which the objective was to design new services that utilise the data generated by smart energy meters.

KEYWORDS: information visualization, creativity, smart energy services

Introduction

In this paper we describe research exploring how quantitative data can be used to support the creative ideation of participants in service design workshops. We discuss how information visualization can make data more accessible to a wide audience and how applied creative thinking techniques could stimulate ideas that are both novel and useful. To illustrate this we describe a case study in which customers and staff of E.ON Energy came together for a workshop in which the objective was to design new services made possible by the data generated from smart energy meters. This research is important because a better understanding of how to stimulate creativity in workshop participants can help us address Norman's criticism that user-centred design methods often fail to produce major enhancements (Norman, 2005, 2010). In addition, our aim is to find ways of extracting value from data, which compliment more common algorithmic techniques by utilising human creativity.

Background

Data play an increasingly prominent role in modern life. We nearly all carry smart phones that help us contribute to the large amounts of personal, social and location data being generated. In addition, devices such as smart energy meters that generate fine-grained consumption data or 'black box' vehicle monitors that record data about our driving are also becoming increasingly familiar. At the same time, data such as census and demographic information, government spending and service provision, housing market statistics and real-time transport information are readily accessible via websites such as data.gov.uk. These data are becoming key to the way major societal issues are approached. For example, one primary motivation behind the planned rollout of smart energy meters to upwards of twenty four million UK homes and businesses by 2020 is the expected impact the data they generate will have on consumption behaviour. It is hoped that these data will enable new services that encourage customers to shift energy consumption away from peak demand times, reduce the need for standby power stations and help the UK meet sustainability targets (DECC, 2012).

Many current approaches to extracting knowledge and therefore value from these data are algorithmic and statistical, often making use of machine learning techniques (Witten, 2005). However, there are a number of potential problems with such 'Big Data' methods. These may relate to data's context and meaning, to the ethics of using data, and to claims for data's objectivity and accuracy (Boyd & Crawford, 2012). Our research takes a different approach, utilizing human creativity to place data in their wider context, to investigate the impact they might have on the lives of various stakeholders, and to suggest ideas for new products or services that respond appropriately. We believe that these data are an important resource that can be used to inspire creativity, particularly at the front end of design projects, where outcomes are not yet certain. To achieve this we employ information visualization tools to provide representations of quantitative data generated within the domain for which new products or services are to be designed, as part of workshop activities undertaken by representatives of key stakeholder groups.

Information visualization has classically been defined as "the use of computer-supported, interactive, visual representations of abstract data to amplify cognition", its purpose being "insight not pictures" (Card, Mackinlay & Shneiderman 1999, p. 7). To achieve this, information visualization techniques make use of the human visual system's powers of pattern recognition and discrimination to explore large amounts of what may be complex data (for a detailed explanation, see Ware, 2012). Wattenberg and Kriss (2006) have demonstrated how information visualization is an effective method of making data more accessible and engaging to a public audience, encouraging people to undertake data analysis socially. Authors such as Tufte (1983) and Few (2009) have provided influential design guidelines. Information visualization has also been identified as a key tool to support creativity in the 21st century (Shneiderman 2001). In particular, the opportunities it provides for comparing alternatives thoroughly and rapidly by coding with visual variables such as colour and size; using computational power to filter or refine dynamically; and then utilising human perceptual skills to identify patterns trends or outliers and gain insight. Hans Rosling's Gapminder (www.gapminder.com) presentations of international development data, and Aaron Koblin's Flight Patterns (www.aaronkoblin.com) which displays the flight paths of US air traffic, are well known examples showing different styles of information visualization.

A Case Study in Designing Smart Energy Services

This case study describes a workshop held in Milton Keynes, UK with customers and staff of E.ON Energy. The objective of the workshop was to generate ideas for new services that utilise data generated by smart energy meters. There were thirteen participants, ten male and three female. Eleven participants were E.ON customers recruited from households taking part in a long-term trial of smart energy technologies being run by E.ON in Milton Keynes. The remaining two participants were members of E.ON staff, employed on their smart meter programme. All participants were familiar with energy monitoring and the data that smart meters generate, they had prior experience with simple visualizations of energy data through the monitors used in the technology trial. The customers who took part in the workshop were already engaged in and informed about energy related issues. This is evidenced by their voluntary participation in E.ON's technology trial and the commitments required for this.

Visualizing Energy Consumption Data

We designed a custom information visualization (Figure 1) to use in the workshop. This was based on simulated smart meter data generated from a model of typical energy consumption built for the wider project this case study was part of (Gruber & Prodanovic, 2012). These data represent seven days' energy use for one household, based on a selection of possible consumption patterns rather than particular demographic factors. There is no single correct description of the people who might make up such a household. The design of this information visualization was informed by a pre-workshop study in which we found that increasing the ambiguity in the visual encoding of data elements resulted in ideas that were considered significantly less appropriate to the domain of domestic energy.

In the information visualization we show the energy consumption data for nine classes of appliance. Each class contains a number of specific instances of appliance. For example, the cooking class contains instances of cooker, hob, kettle, microwave, coffee machine and extractor hood. Consumption can be explored as kilowatt-hours or as a cost in pounds sterling. The appliance type and unit of measure currently selected are indicated with a red highlight. To introduce participants to the idea of tariffs in which the price of energy units vary at different times of day we created five simple price bands covering different periods. These are indicated through colours ranging from green to blue. Such variable price tariffs are one possible route towards shifting peak energy demand.

In designing the information visualization we used in this workshop we were informed and guided by our work with visualization experts at City University London's giCentre, who we were collaborating with to design new visualizations for E.ON energy analysts (Goodwin et al 2013). Further guidance came from considering Tufte's (1983) and Few's (2009) influential design guidelines; Moere and Purchase's (2011) discussion of the role design plays in information visualization; and Wattenberg and Kriss' (2006) description of designing for social data analysis through the use of expressive spectator interfaces. The visualization uses a linear timeline and bubble graph to show consumption over time, with a colour scheme derived from colorbrewer.org to represent the variable pricing scheme, and area chart to depict the percentage of energy used when different prices are in effect (Figure 1 left). Details for each hour's consumption are available by selecting the bubble representing that hour (Figure 1 centre), with further details available for each day's consumption (Figure 1 right).

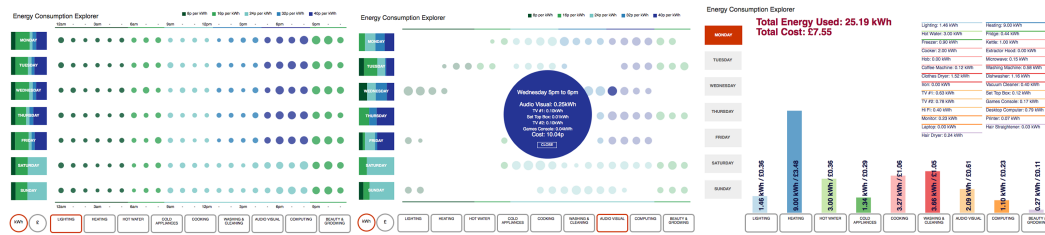


Figure 1: Screenshots of the information visualization used during workshop activities

This follows Shneiderman’s mantra of “Overview first, zoom and filter, then details on demand” (Shneiderman, 1996). The information visualization is available in its interactive form online at www.dadc.co.uk/eon. Workshop participants were given the information visualization on iPads. This was to support interactive exploration and because the form factor and portability of an iPad makes it particularly suitable for small group collaboration in a workshop setting.

Workshop Activities

The workshop was made up of five main activities. The first two of these were information gathering, data exploration activities. These activities played the role of the preparation phase common in many models of creative processes such as Wallas’ four-stage model, which includes *preparation incubation illumination* and *verification* stages (Wallas, 1926). Treffinger (1995) characterises this preparation stage as including processes of mess finding, data finding (through information search), and problem finding. Here, the information visualization played a key role and it is these activities that will be discussed in greatest detail. The third activity was designed to gather evaluation data, this is discussed in the Evaluation section and the fourth was a group brainstorming activity, which is not discussed here. In the day’s fifth and final activity, participants developed their favourite ideas and described them at three key stages. This activity will be outlined in more detail in the Activity 5: Generating Service Designs section of this paper. The activities described here were undertaken in small groups of three or four participants. Participants self-selected these groups, with the only criterion being that each group should have at least one member experienced and confident using an iPad, as this was how they would interact with the information visualization.

Activity 1: Who Lives Here?

For this activity each of the small groups was given an iPad showing the information visualization app, an A1 sized worksheet and a creativity toolkit consisting of marker pens, post-it notes, coloured paper shapes, glue, tape, scissors and around three hundred photographs of people, buildings, transport, food and technology.

Participants were asked to explore the information visualization and imagine what type of household might be represented by the energy consumption data it is based on. They were asked to spot patterns of consumption indicating who the household were, what their lifestyle is like and what their attitudes to energy and technology could be. The purpose of this activity was to encourage participants to explore possible energy consumption behaviour and use the insights they found as the basis for discussions about the context in which that behaviour might take place. We wanted participants to share their knowledge, experience and concerns regarding energy related issues. The information visualization is based on simulated data, derived from models of typical consumption patterns rather than from demographics. We had no single correct answer in mind to the question ‘Who lives here?’.



Figure 2: Participants creating representative households in Activity 1

Each group used the worksheet and creativity toolkit to create a collage that described the household they imagined best reflected the insights they found in the data (Figure 2). The importance of this type of generative activity has been demonstrated by Sanders (2005), who describes how understanding what participants make, as well as what they do or say, brings to light their experiences and highlights desires or requirements that might not otherwise be expressed. The worksheet contained areas to show the household's members, the type of property they live in, the type of energy consumer they are, how they might feel about technology, what their mealtimes might look like and the ways they travel. The activity ended with each group presenting their household to camera. These representative households were subsequently used as personas that the group would consider when assessing the appropriateness of their smart energy service ideas.

Activity 2: Win a State of the Art Smart Home

In this activity, participants were again asked to explore the energy consumption data represented in the information visualization. This time their task was to suggest ways for their representative household to be smarter in their energy use. This could mean reducing the total amount of energy they consume or changing consumption behaviour to reduce their potential energy bill. Activity 2 took the form of a competition with each group completing an entry form on which they listed their top five ideas. The entry form also contained a tiebreaker question in which we asked each group to briefly describe a piece of smart home technology that would improve their representative household's lives and lead to smarter use of energy.

Activity 5: Generating Service Designs

In the final activity, each group of participants selected one or more of the ideas generated during the day, which they then developed more fully into a new service. This service would utilise smart home energy data and reflect the needs of the representative household they had created in the first activity. Each group was given three more A1 worksheets to describe their service at three key stages. On the first worksheet they were asked to describe what it is like when the household sign up for the new service, addressing factors such as their household's motivations. On the second worksheet they described how it felt the first time that the service was used by their household. On the third worksheet they described what it was like once the service was an established part of their household's life. These worksheets were completed in a similar fashion to those in Activity 1, using the same toolkit. This activity ended with each group presenting their service idea to camera.



Figure 3: Representative households created during Activity 1

Evaluation

We used two methods to evaluate the support the activities incorporating the information visualization provided for participants' creativity. In the first, we asked each participant to complete three postcards. This task was the third workshop activity. On each of these postcards we printed a prompt that addressed aspects of creativity or insight support identified from the literature. These prompts were derived from the Creativity Support Index questionnaire (Carroll et al., 2009) that we have used previously and from an understanding of how users gain insight using information visualization derived from Yi et al. (2008) and North (2006). Participants were asked to reflect on and respond to these prompts when they completed the postcard. This evaluation method is discussed in detail in (Dove & Jones 2013). Participants' responses were transcribed for analysis, which was undertaken in a manner similar to the analysis of open questions from a questionnaire.

We also assessed the creativity of the outputs produced in the workshop's activities. In the outputs from Activity 1 (Figure 3) and Activity 2 we were looking for evidence that participants had explored a number of possible alternatives and that they had used these to develop rich descriptions of their representative households. A rich description would show detail in their household's background and would consider the context around its energy use. We looked for evidence that insights gained exploring data were developed into rounded characteristics by the addition of aspects from the participants' own experience and knowledge. Here, the differences between each of the groups' representative households and the imaginative details in the stories behind these households would indicate that visualized data can provide effective stimulation for participants' creativity. In the service design outputs created during Activity 5 (Figure 4) we were looking for evidence that participants had developed ideas appropriate for their representative household and which reflected the insights into energy consumption they gained. We were also looking for evidence of novelty in the form of new services or new implementations of services.

Results

Our analysis of the postcards completed by participants during Activity 3 indicates that using the information visualization during Activity 1 and Activity 2 was engaging and supported collaboration. This is demonstrated when we look at individual quotes from our participants: *"Our group was engaged and excited. We really used the tech to answer the Q's"; "I felt engaged and absorbed with the tasks.... The technology was very useful"; "I fully immersed myself in the activity.... The technology was extremely useful and very interactive"*.

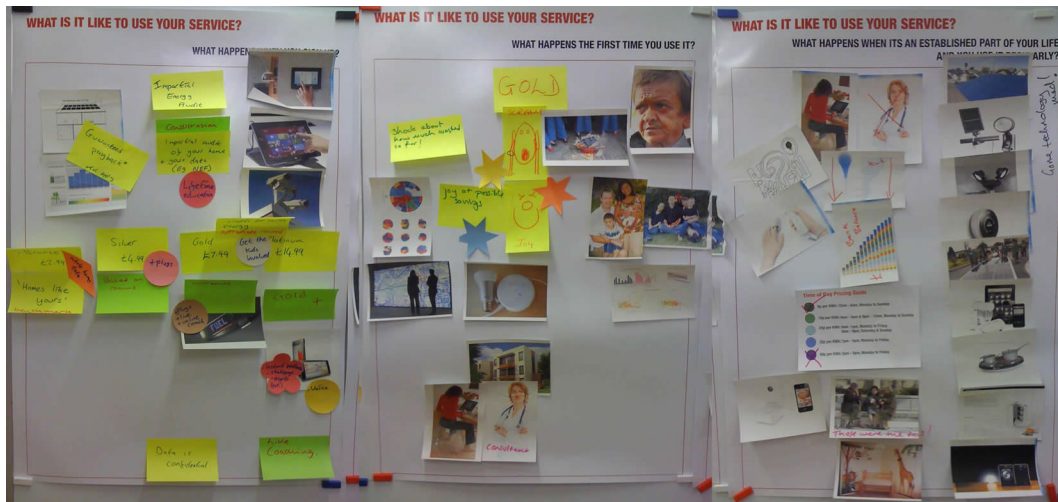


Figure 4: Example service design output from Activity 5

We also found that participants were able to build on their existing knowledge, with individual quotes again being informative. *“The iPad data visualisation was very useful as it made it surprisingly easy to look at each piece of data.... I could also use it with my own knowledge which I had to do for the first task.”*; *“Easy to imagine the type of people in the house. My existing knowledge fitted well with the issues raised by the data”*; *“It was easy to incorporate this data with existing knowledge”*. Insight seeking was also supported, with both overview, and patterns and relationships being easy to discover. Once more this is well illustrated with individual participant’s reflective comments. *“Yes it clearly helped you to understand patterns. Usage, timelines and others quickly”*; *“Definitely. You had a broad overview and you could drill down to get clearer answers”*; *“It was easy to get an overview about each group of data.... and that made it very easy to compare the data and come to assumptions about it”*.

The worksheets completed during Activity 1 (Figure 3) show how each group found insights they thought important in the data and then used their existing knowledge and experiences to develop these into rich descriptions of the kind of household they thought the data might represent. The following are a few brief examples. The first group saw a pattern in which the household used entertainment equipment late at night and another pattern showing relatively frequent washing machine use. They thought the data best represented a family with children. Our second group also saw these patterns but thought that additional patterns showing irregular cooking and repeated use of a hairdryer indicated that the household might be single, urban and female. Our third group also spotted the irregular cooking patterns but thought that this indicated an outdoor lifestyle, which suggested that the household were ‘concerned greens’. Finally, the fourth group spotted that more cooking was being done on Monday and thought this meant the household might batch cook meals and reheat them later in the week. They also noted a pattern in the heating that suggested a household member worked from home or worked part-time.

In our assessment of the final service design outputs (Figure 4) we were looking for evidence of two key factors. First, that participants had developed ideas appropriate for their representative household and which reflected the energy consumption patterns they uncovered. Here there was evidence of success as each group’s service was a development of the insights and ideas gained exploring the information visualization in the first two activities. In each case we can tell a coherent story of how the service ideas respond to the needs of the representative household users. The second factor we were looking for was novelty in the form of new services or new implementations of services, different from those already familiar to participants. Here the evidence is less strong. Two groups developed ideas for detailed energy audits. This takes the desire for more granular information and for

historic reports, both of which had been expressed elsewhere during E.ON's longer-term technology trial, and extends them into a complete service. A third group developed an automated shopping service based on a smart fridge. This is similar to ideas that have been around for the last decade, occasionally gaining a high public profile (Kuniavsky, 2008). The final group developed a service to automatically manage heating and lighting based on what it has learnt about the household's behaviour. This is similar in many ways to the Nest thermostat (www.nest.com), a product the group were aware of. All of these ideas were expressed creatively, with elements of novelty and in a format appropriate to the needs of their users. However, they can be considered to show what one might term incremental creativity as they build on the already familiar and are not suggestions that would necessarily lead to radical new solutions.

Discussion

The type of workshop we describe in the case study requires significant commitment from participants, takes a large amount of planning and can be expensive. Whilst it is important to develop techniques that engage participants and which help them express their existing ideas creatively, our objectives go some way beyond this as we aim to use data to help participants develop ideas they would not otherwise have. Norman & Verganti (2014) discuss the difference between incremental innovation, which leads to doing something better, and the more rare radical innovation, which leads to doing something different. They argue that it is changes in the meaning ascribed to a product or service, perhaps following or alongside the introduction of new technology, which leads to these radical innovations. Such a change in meaning, they say, may be arrived at by exploring wider social and cultural changes that lead to a reframing of current solutions. Such a distinction between incremental and radical innovation echoes our desire to encourage a more radical creativity in the ideas for design requirements expressed by our workshop participants, and perhaps offers a framework that we can borrow to inform the design of future workshop activities. It is not uncommon in co-creation workshops for designers to work with participants, helping to facilitate and hone or develop ideas. In future workshops it may be useful for designers to help identify and explore social changes and future technologies and use these to direct participants' ideas towards areas of greater novelty.

Another approach that may prove instructive can be found in applied creative thinking techniques. Prominent examples of which include Osborn and Parnes' Creative Problem Solving (Parnes, 1992), Gordon and Prince's Synectics (Gordon, 1961), and De Bono's Lateral Thinking (De Bono, 1970) and Six Thinking Hats (De Bono, 2000). These techniques all start from the common premise that everyone has the capacity to think creatively and that the skills needed to do so can be systematised. Such applied creativity techniques have been effectively incorporated into the process of gathering requirements for large-scale socio-technical systems (Maiden, Gazikis & Robertson, 2004). Here, workshops using techniques such as constraint removal, brainstorming with creativity triggers and analogical reasoning, have helped stakeholder representatives generate important ideas for requirements that were considered both novel and appropriate and that may otherwise have remained unexpressed. These techniques again suggest a framework through which we could deliberately provoke participants to explore ideas that are outside their normal frame of reference, leading them to generate novel ideas for design requirements. In particular, the techniques characterised by McFadzean (1998) as being 'paradigm breaking' offer a way to view a given problem or opportunity from different perspectives. Such a deliberate

reframing of the problem at hand has been shown to promote creativity and innovation (Seelig, 2012), and offers a possible way to explore new meanings.

Future Work

One of our key challenges is to develop workshop activities that enable participants to critically explore data in the context of wider trends. Another is to use the insights found through data exploration as inputs to applied creative thinking activities. Through this we aim to prompt participants towards greater novelty and increased creativity in their idea generation. Additionally we should seek to use information visualization to identify domain constraints. Onarheim (2012) has discussed how manipulating constraints can enhance design creativity.

Conclusion

Data are likely to play an increasingly prominent role in the design of new services. In this paper we have discussed how information visualization can make these data more accessible and engaging to key stakeholder representatives during design workshops. We illustrated this with examples from our case study in the energy domain. We also outlined how applied creative thinking techniques could be used to extend these methods; stimulating creative, novel and appropriate ideas for design requirements that may not otherwise be expressed.

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Components of a Visual Language for Service Design

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Abstract

The increasing interest in service design implies the need for more formal approaches to the analysis, conceptualization, and implementation of services. In particular, this is critical when multiple actors, such as designers, developers, and managers are to apply a service design approach for a customer centric transformation of the organization and its service offerings. In this paper, we present key components of a formal language for the modelling of customer journeys. The language is developed, in particular, to support customer journey analysis and design; its formal character is meant to facilitate an unambiguous communication of a customer journey throughout a service organization, and to bridge the current gap between fuzzy front-end service design and service implementation. Application of the language is illustrated through case studies from a large web-based service provider and a power company.

KEYWORDS: visual language, customer journey, touchpoint, CJML

Introduction

In recent years, we have witnessed a tremendous increase in the interest in service design. This increase is in part due to a general servitization trend (Baines et al., 2009) where product providers add services to their products or present their products as part of a service offering. Also, the increasing availability of channels for service delivery (van Dijk et al., 2007), and service delivery through the integration of multiple service providers (Saco & Goncalves, 2008; Tax et al., 2013), have made service offerings ever more complex both to the customer and to the service provider.

A key driver in service design is the understanding of customer experience as a differentiator in competitive markets (Mascarenhas et al., 2006), which in turn motivates a customer-centric approach to the design and management of services (Polaine et al., 2013). Designing for experience and managing the experience associated with a service is challenging (Zomerdijsk & Voss, 2010), in particular due to the number of actors and service channels involved in the service delivery process and the need to match lofty aims for improved customer centricity with down to earth challenges associated with legacy infrastructure and

organizational barriers. Key challenges for service providers are related to gaps in the service offerings. In the service development process, there is a gap between fuzzy front end service concepts and implemented services (Bitner et al., 2008). In service implementation, there is a gap between involved actors' understanding of the service process, and between service providers' and customers' assessment of services (Bitner et al., 2010). To close these gaps, we depend on precise, unambiguous descriptions of service delivery processes. In short, we need a common language for service design. Such a language will facilitate analysis and implementation of services, as the involved actors, such as designers, developers, and managers, are given the terminology to precisely model services and support a common service understanding. In this paper, we argue the need for a visual language for service design and present components for the part of service design that concerns the customers' journey. We will also exemplify the usefulness of such a language by presenting results from two case studies.

Background

To describe and visualize service delivery processes, today's field of service design (Blomkvist et al., 2010) draws heavily on the pioneering work of Shostack (1982) in developing the service blueprinting technique. Service blueprinting allows modelling of the onstage and backstage processes to facilitate a common understanding across the different stakeholders involved in service development and delivery. The method has evolved significantly in recent years to become more customer focused (Bitner et al., 2008), and to account for the multi-channel nature of service delivery (Patrício et al., 2008).

In contrast to service blueprinting, the service journey (Parker & Heapy, 2006) or customer journey approach (Zomerdijs & Voss, 2010) only concern the customer's perspective of the service delivery process. Service blueprinting has introduced some of the needed formalization and precision in service design (Bitner et al., 2008). However, the formalism of service blueprinting does not adequately capture important aspects of the customer journey; in particular, the distinction between journeys as they are expected by the service provider, and journeys as they are actually experienced by the customers. Though the customer journey approach is widespread in service design (Segelström & Holmlid, 2009), there is an apparent lack of rigor or formalism in the visualizations of such journeys (Følstad et al., 2013). Moreover, service design as a discipline lacks a common language and description format (Jonas et al., 2009) and the terms are often vague (Hume et al., 2006). A formal approach for precise modelling of services from the customer perspective would therefore be beneficial, in particular for implementation of service concepts within the framework of existing infrastructure and service portfolio (Moritz, 2005). As argued by Bitner et al. (2008), such an approach should be visual to facilitate cross-departmental communication.

We aim to develop a visual language that supports a translation of static service concepts into dynamic representations in the form of customer journeys. Also, the language should support analysis and maintenance of existing services. By using such a language we expect to facilitate cross-departmental communication and collaboration between different stakeholders involved. In this paper we present components of such a language for service design, and demonstrate how it can be applied in two industry sectors.

Introducing the Customer Journey Modelling Language (CJML)

The development of CJML is based on existing knowledge and practices spanning several related domains, like service design, HCI and service management. Central terms and visualisation techniques have been identified through relevant research articles, whitepapers, books, and web resources. An explorative research approach has been adopted in developing the visual notation. In the next sections we introduce the key terms and the visual notation.

Terminology

In the literature, customer journeys are interpreted in different ways, like "an engaging story" about user's interaction with a service (Stickdorn et al., 2011) or a collection of touchpoints and interactions between a service provider and customer (Gloppen, 2009). A recent literature review has revealed that customer journeys generally are understood as the process a customer goes through to achieve a specific goal, involving one or more service providers (Følstad et al., 2013). When modelling a customer journey, we need to restrict our scope to key elements. In CJML, a customer journey is modelled as a sequence of *touchpoints* and *actions* involved for a customer to achieve a specific goal, see Table 1. CJML distinguishes between expected and actual customer journeys.

Term	Definition & attributes
Touchpoint	<u>Definition (dynamic touchpoint):</u> Instance of communication or interaction between a customer and a service provider <u>Definition (static touchpoint):</u> A potential point of communication or interaction between a customer and a service provider <u>Attributes:</u> Type: expected or ad-hoc Initiator: customer, service provider or subcontractor Times: T1 (originated) T2 (available) T3 (consumed) Channel: carries/mediates touchpoint (e-mail, SMS, letter, etc.) Status : completed, missing or failing
Action	<u>Definition:</u> An event or activity conducted by a customer or service provider as part of a customer journey
Customer journey (expected and actual)	<u>Definition:</u> A sequence of touchpoints and actions involved for a customer to achieve a specific goal. An expected journey is the journey as anticipated by the service provider, while an actual journey is the real journey as experienced by a customer. <u>Attributes:</u> Status: in progress, completed or aborted

Table 1 Definitions and attributes for modelling of customer journeys

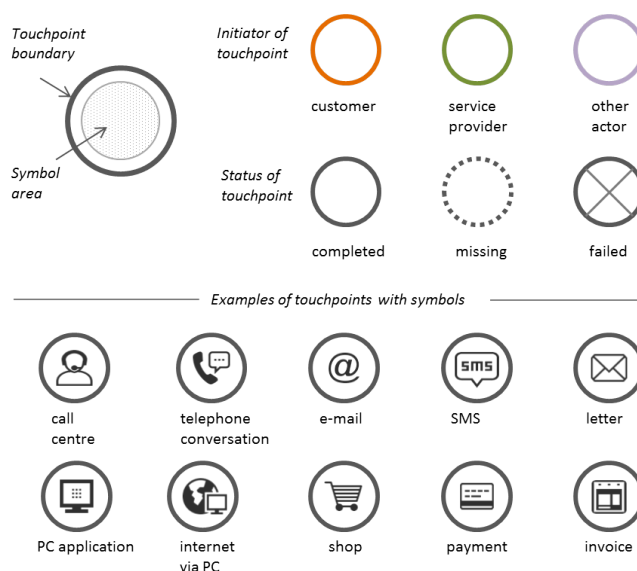
The term touchpoint has become an umbrella term for service encounters (Howard, 2007). Meyer and Schwager (2007) defined it as an instance of direct contact, either with the product or service itself, or with representations of it by the company or some third party. Jonas et al. (2009), defined touchpoint as the point of contact between the user and the service. CJML concerns service delivery both as expected by the service provider and as experienced by the customer. Therefore, we have introduced a static and a dynamic mode

for touchpoints. The static mode signifies the intended or hypothetical encounter. In contrast, the dynamic mode represents the execution of the touchpoint. In CJML, touchpoints have the following attributes: type, initiator, time, channel and status.

Other important terms in CJML are *customer*, *service provider*, *actor* and *channel*. The *customer* is a person or organisation receiving the outcome of the service (Edvardsson & Olsson, 1996). A *service provider* is a company or organisation that provides services to customers, customer groups or organizations. An *actor* is any person (or entity) who is involved in service delivery or service consumption, including both customers and service providers. A *channel* is a service provider's means of communicating or interacting with its customers (Osterwalder, 2004).

Visual syntax and visualisation modes

An explorative approach was used for developing the visual notation. An early modelling of services as a chain of interconnected circular elements is described by Gustafsson & Johnson (2003) in an analysis of airline travel experiences. By supplementing the circular elements with symbols and means for encoding of touchpoint attributes, Halvorsrud & Kvale (2014) developed a framework for visualisation of customer journeys. The CJML notation shares some of these basic principles, but offers more expressiveness in terms of symbols and attributes. The inner area of the touchpoint is reserved for a symbol while the boundary itself carries information about the actor and the status of the touchpoint, see Figure 1. The symbol area of the touchpoint carries information about the channel or the device that is used. The actor who initiates the touchpoint is encoded in the colour of the boundary: customer (orange) and service provider (green). Additional colours may be introduced to distinguish additional actors. A solid boundary style indicates a touchpoint that is completed, while a touchpoint that is missing is indicated by a dashed outline pattern. A touchpoint that



fails, like an unsuccessful attempt to reach a call centre, is marked with a cross.

Figure 1 Visualisation of touchpoints

An effort was made to develop simple and intuitive symbols. Preliminary evaluations suggest that consistent use of symbols may compensate for symbol clarity. The diagram elements of

CJML are outlined in Figure 2. The basic elements of a customer journey are touchpoints and actions, and special symbols are used to indicate the start and end of the journey.

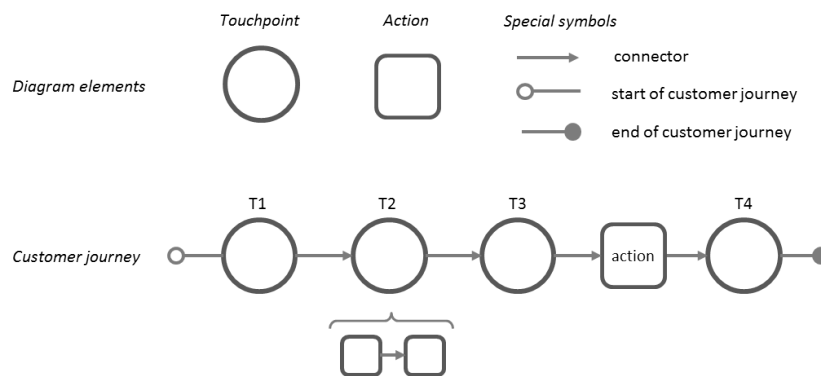


Figure 2 Diagram elements involved in visualisations of a customer journey

The touchpoints are labelled consecutively with unique identifiers (T1, T2, T3, etc.) for easy referral. However, when dealing with actual journeys, it can be useful to introduce labels indicating whether the touchpoint was expected (E) or ad-hoc (A). Touchpoints can also be labelled according to their status: completed (T), missing (M) or failing (F). When convenient, a customer journey can be divided into phases, corresponding to service moments in Koivisto (2009), which are temporal sub-units of the journey.

The visual notation of CJML comprises three visualisation alternatives:

- » Plain sequential view
- » Concurrency view
- » Deviation view

The customer journey in Figure 2 exemplifies the plain sequential view. In this ‘basic mode’, the touchpoints are represented as they (would) appear. A horizontal time axis with suitable units (hours, days) may be added to emphasize the timing of individual touchpoints. A visual notation for concurrency is provided to account for touchpoints that occur at the same time. The deviation view can be used when comparing an actual journey to an expected sequence of touchpoints, as it is often the case with transactional journeys. The visualisation alternatives will be demonstrated in the next sections through the case studies.

Application of the visual language

CJML has been tested and evaluated during a service design workshop with 26 librarians at the Norwegian University Library (Lee & Karahasanovic, 2013), and when analysing existing services in two Norwegian organizations. In both organizations, an insight research approach was applied, where the purpose is to generate large amounts of insight based on qualitative data from a small number of customers (Polaine et al., 2013). In the following sections, we will elaborate on how CJML was used to identify and analyse service offerings in an eMarket company and an energy company.

Case study: researching sales journeys in an eMarket company

A case study was carried out in the eMarket company with the aim of researching and mapping the company's current customer journey for new sales in the B2B market. The process was known to be handled manually by sales personnel, involving many instances of phone calls and e-mail exchange between customer and service provider. A redesign of the resource-demanding journey was the ultimate goal of the eMarket company. The case study was designed with two main research activities. Mystery shopping contributed first-hand experience and an overview of the touchpoints. This was supplemented with co-listening and observation of phone calls and e-mail exchange between customers and sales personnel. The co-listening sessions resulted in the mapping of 16 customer journeys. Figure 3 shows an actual customer journey visualised using a plain sequential view. The first action describes parts of the customer's decision-making process, in which the customer browses information and decides to become a customer. The customer journey includes two phone conversations (T1 and T3) and three e-mails (T2, T4, and T5).

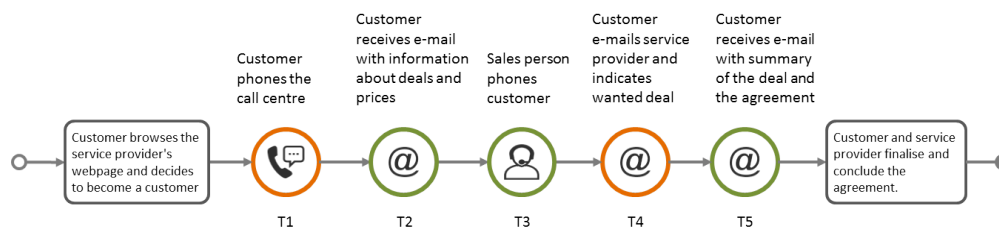


Figure 3 Visualisation of an actual customer journey using the plain sequential view

The plain sequential view is particularly useful for mapping journeys without comparing it to an expected outcome; for instance when a company does not have a generic way of delivering the service, or large variations in customer preferences exists. Anyway, mapping the journey using the plain sequential view may reveal strengths and weaknesses of a service, and contribute useful input to redesign of the service.

When researching the eMarket services, it became evident that a touchpoint could occur while another one was being carried out. For such situations we developed the concurrency notation. Figure 4 shows a customer journey where two touchpoints (T3 and T4) occur within an on-going phone conversation (T2). While the customer is talking to the sales person, he receives information (action) and there is an e-mail exchange. Here, T2 is visualised with two touchpoint symbols where half the boundary is dashed to emphasize the on-going status. The actions and touchpoint that occur during the conversation are depicted below the time indicators.

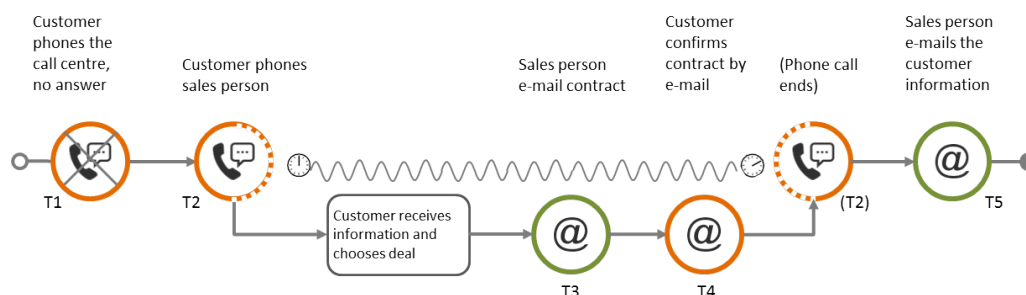


Figure 4 Visualisation of an actual customer journey using the concurrency notation

In the eMarket sales process, concurrency of touchpoints occurs frequently through the conversation between customers and sales personnel. Concurrency notations can be useful in providing a detailed mapping and visualisation of the timing of touchpoints and activities. It provides an opportunity to review procedures concerning documentation and closing of agreements with digital signature during the conversation. Visualisation of concurrency can also be applied to redesign of the journey, particularly in structuring the information exchange and the formalities associated with the sales process.

Case study: researching the customer on-boarding journey in an energy company

The purpose of the energy company case study was to investigate the expected and actual customer journeys associated with on-boarding of new customers. This journey was to a large extent characterised by automated touchpoints from the company's IT-systems. However, it also involved touchpoints with human intervention. In this case study, quite a few different expected journeys was identified due to the multi-channel nature of the service delivery systems. A customer could choose different ways of getting in touch with the company, and their journeys depended on their explicit channel preferences stated during the initial touchpoint. In this section we will demonstrate the deviation view of CJML as the service delivery has a transactional and deterministic nature.

The process of becoming a customer may last for several weeks, and we chose to approach the actual journeys through interviews in combination with a customer diary. Customers were recruited through interviews shortly after they contacted the energy company, and were asked to document their experiences in a paper diary until receiving the first invoice. Follow-up interviews were conducted with the purpose of reviewing the touchpoints and associated experience. Figure 5 shows part of a customer's journey involving notification of meter-reading and payment. In the deviation view, a horizontal line separates the expected touchpoints from ad-hoc touchpoints, being depicted above and below the line, respectively. Expected touchpoints that are missing in the journey are shown using a light grey colour. In this example, the SMS from the energy company notifying the customer of meter-reading is missing, in addition to the touchpoint where the customer was supposed to submit the meter. It is not unusual that actual journeys are missing some touchpoints. Figure 5 also exemplifies the presence of external actors like a bank (A4) as part of the journey.

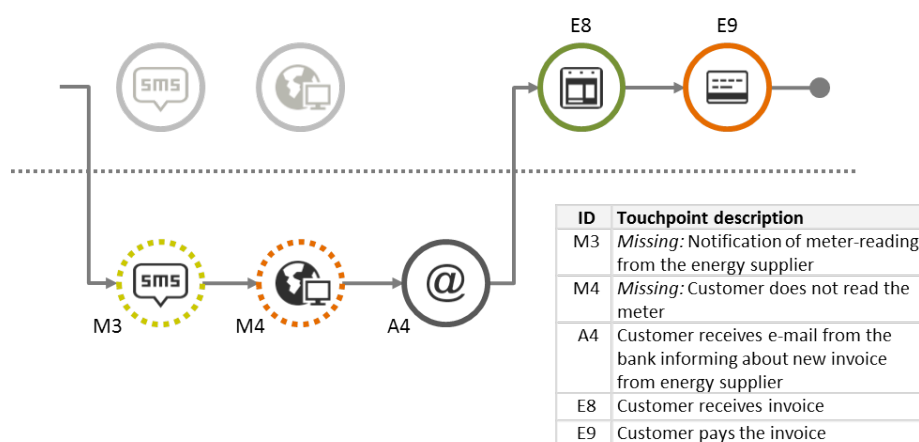


Figure 5 Visualisation of an actual customer journey using the deviation view

A customer journey analysis often reveals subtleties in the customer experience that are not readily available to the company. The deviation view is a way for service providers to identify gaps in their service offerings by comparing actual journeys with the expected journeys. However, it is important to bear in mind that deviations from the expected journey do not necessarily imply an unfortunate customer experience. Furthermore, a mapping that includes external actors can be useful in providing an overview of all the touchpoints that forms the customer's service experience. Customers seldom distinguish between the different actors of a journey, thus actors that initially are not a part of a service are experienced as if they were.

Discussion

We have introduced components of a visual language for service design and demonstrated how it can be applied to identify and analyse service experiences in two industry sectors. Although a formal evaluation of the language has not yet been conducted, we have collected feedback from workshops with our case partners, through e-mail questionnaires, and through a workshop at a public library site (Lee & Karahasanovic, 2013). This provided valuable information about how CJML were perceived and understood, and the potential usefulness of such a language as seen from a service provider's point of view.

For the most part, the feedback relates to the visual notation of CJML, and less to the terminology per se. In general, employees of the case providers (referred to as 'users') reported that the visual representation of customer journeys was clear and easy to understand, offering a comprehensive and valuable overview of what the customer went through. The language was perceived as useful in pinpointing parts of the customer journey that needed improvements. Most of the symbols were perceived as intuitive and easy to understand. However, some of the symbols, such as the symbol for payment, were argued not to be sufficiently suited to the particular sector of the case. Furthermore, some users called for additional symbols that were specific for their industry sector. Several users from the energy company found the coding of the boundary colour problematic when more than three different actors were involved. They suggested repeating the colour coding in each diagram. One user suggested a computerized tool with the possibility of personalized colour coding. Yet another suggestion was to superimpose a company logo onto the touchpoints initiated by the company, or to visually express the responsible department within a company. Finally, when working at the concept level of a new service, it was suggested to extend the visual notation to facilitate swim-lane diagrams when many actors are involved.

In the eMarket company, the CJML toolbox has been distributed internally across several groups and product teams, and is seen as a potential platform for cross-departmental communication around service design. The language has been perceived as valuable for understanding the end-to-end customer journey and the associated experience. In particular, CJML has been used for redesign of services; for conceptualization, drafting, and scenario generation, and for communicating new ideas within the company. In the future, the eMarket company wishes to use CJML to increase awareness about the total customer journeys within the organization, and to ease communication across departments.

The energy company found CJML valuable in specifying the expected customer journeys, as well for identifying the customer processes. In particular, the case study results have been used for customer-orientation purposes through disseminating the customers' experiences with the on-boarding journey. They expressed several possibilities when asked how CJML could be used in the future. First, the language could be useful in clarifying responsibility

areas between departments, which in turn could lead to a common understanding of the customer journey. Secondly, the company found CJML beneficial for valuating current customer journeys, for making improvements, and for designing new services. However, many pointed out that these issues would require internal alignment and a common focus, which is not easy to achieve. Finally, they pointed out the need for robust visualisation tools in order to adopt CJML across their organisation.

Conclusion and future work

In this paper we have introduced components of a visual language, and preliminary evaluations suggest that CJML can support service providers both in developing new services, and for maintenance of existing services. The visual representations were perceived as useful for increasing the general awareness about customer experience associated with service delivery. The visual language will be further developed, and the visual notation will be systematically evaluated in annual cycles through case studies with industrial partners. Future developments will serve to extend the vocabulary, to increase the visual expressiveness, and to conduct systematic assessment of the visual components. For more practical and easy use of the language, efforts will be made to develop a computerized application for CJML.

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Incorporating the customer experience along different iterative cycles of service design

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Abstract

The creative transition from understanding the customer experience to defining the service solution, from current situation to preferred future, is central to Service Design. However, the incorporation of customer experience factors can change along the different iterative cycles of service design. To address this challenge, this paper presents the results of a study of how the path of customer experience was followed, studied and incorporated along a mobile service development. Three iterative Service Design cycles enabled a holistic vision of the service and raised 'customer experience' awareness on the development team. Following a design research approach, experience factors were actively taken into account and incorporated along ideation and implementations cycles involving a total of 61 interviews. The research work contributes to Service Design by providing a global vision of the experiential changes, especially in mobile and technology based services. It describes the reframed situations working with experiences at each cycle of design, and making use of service design tools and methods at each moment.

KEYWORDS: Mobile Service Design, Service Design iterative cycles, mobile customer experience.

Introduction

Customer experiences have become increasingly important, differentiating and adding value to services. Mobile phone experiences stand on every aspect of a mobile service offering, from the quality of customer care, to its usefulness, surrounding environment, or reliability. Value is co-created by customers through their interactions with service providers, resulting in a unique contextual outcome (Vargo & Lusch, 2004; Moggridge, 2007).

However, creating valuable experiences is more challenging as mobile services require an awareness of all the aspects of the customer journey in a dynamic and context-dependent environment (Karapanos, Zimmerman et al., 2009). To design successful mobile services it is crucial to understand these customer experiences while integrating designers' and technology's

viewpoints. To accomplish this integration it is important to identify experience attributes to which customers give more importance at each stage of design. Mobile service experience dimensions might have different importance degrees along the diverse stages of service adoption and regular use. Therefore it is necessary not only to clearly understand them, but also evaluate when they may be more critical. Moreover it is necessary to articulate the best tools to incorporate experience along the iterative cycles of service design. The experience aspects cannot be dissociated from the physical, technological contexts, the social environments or even the emotional sphere and are increasingly affected by the stage on the service development.

Literature review

Service design is an iterative process that passes through several stages such as inspiration, ideation, reflection through prototyping and testing, and implementation (Brown, 2008; Stickdorn, Schneider et al., 2010). The designer is a facilitator, a provoker, but it is required to take the tools and work the content (Meroni & Sangiorgi, 2011). It is suggested that service designers should attend the different stages in the service development so problems can be solved quickly and creatively (Stickdorn, Schneider et al. 2010). The creative transition from understanding the customer experience to defining the service solution, from current situation to preferred future, is a central issue of service design (Dubberly, Evenson et al., 2008; Patrício, Fisk et al., 2013).

Verhoef et al. (2009, p. 32) suggest that the customer experience is holistic, covering cognitive, affective, social and physical responses to the service provider. According to their definition, "This experience is created not only by those elements, which the retailer can control (e.g., service interface, retail atmosphere, assortment, price), but also by elements that are outside of the retailer's control (e.g., influence of others, purpose of shopping)".

To cope with the complexity of designing for the customer experience, Patrício et al. (2011) advocate, a multilevel understanding and design of the service offering. These authors suggest a layered approach to experience using different service design tools that are best suited for each level. Three hierarchical levels to approach service experience are therefore established: the value constellation, the service system, and the service encounter. These service design tools help to explore, create, reflect, test and implement the service for the customer experience (Tassi, 2009; Stickdorn, Schneider et al., 2010). Although there are several service design tools and techniques, they become more useful if they help to integrate the experience in a systematic manner along the different stages of the process.

The iterative design process in mobile services is fast and implementation is made through several releases that involve technological changes but sometimes may also affect the service concept. Accordingly further research on mobile customer experiences is demanded so it can be articulated and their interactive effects may help companies to develop better strategies and foster customer loyalty (Helkkula, 2011). There are some studies showing how experience can be incorporated in the design process but further research is needed showing how that integration changes along the different iterative service design cycles.

Method

Along with the research process a new mobile service was followed as an empirical ground, in several stages from exploration to implementation - the MOBSEV - This mobile service supports the management of loyalty programs through a mobile application. Loyalty programs are activities designed to encourage purchasing through a marketing process (usually through cards) and the distribution of its rewards. The application provides for digitizing and storing these loyalty and membership cards. Through a design research approach, three design cycles were followed, where the study of experience was used to learn about customers, and was integrated in mobile service design (Reason & Bradbury 2008; Koskinen, Zimmerman et al., 2011; Sangiorgi, 2011). On one hand there was research of customer experience requirements, on the other hand there was the incorporation of the ascertained experience factors in the Service Design path (Sarmiento, Patrício et al., 2009). In the first cycle the service concept was investigated and discussed with 25 potential users; followed by a second study with the 21 early adopters and a third phase involving interviews with 15 regular users. (Sarmiento & Patrício, 2012). These study results were iteratively incorporated along the different cycles of Service Design, with the purpose of feeding the creative process with the gathered experience requirements (Figure 1).

The main research goal of this study was the incorporation of customer experience requirements in an iterative manner. This process resulted in a sequence of non-linear cooperative events between research and development, between ascertaining elements for design and the design itself.

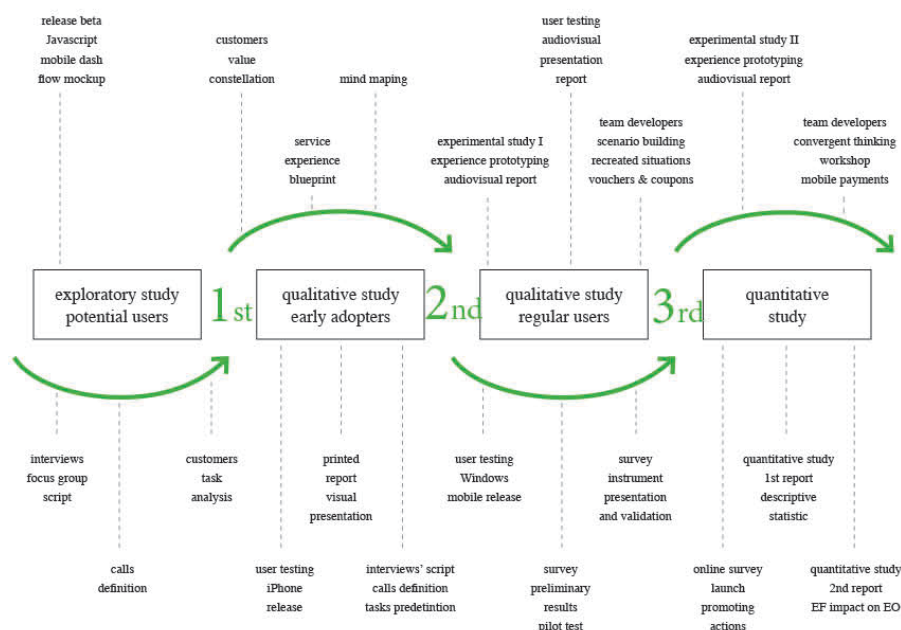


Figure 1 Incorporating service experience requirements along the service design path

First Service Design cycle

In the first exploratory study of customer experience, the Beta version of the service was launched only for JAVA SCRIPT mobile platforms. This first assignment included the analysis of the mobile application mock-up, generating, therefore, the preliminary suggestions for the service design with experience on adoption and use.

Modelling enabled the creation of visual abstractions that helped developers to solve problems and find tangible solutions. Once specific hypotheses were defined, they could be initially tested inside the development team.

The developers' first concern was then to focus on the webpage and improve the way people would learn how to download and install the application. Beyond the ease of learning, the team was also concerned with the lack of mobile service awareness. As a result, the interdisciplinary work promoted the discussion and the construction of a model articulated between the different channels: homepage, online communities and mobile app. Some discussions took then place over the preliminary proposals for graphic interfaces. By this time, the developers and the researchers also got together for the first time.

In the Beta version, the identification of experience key factors was mainly focused on the conceptual transition from a loyalty card service to a multichannel loyalty service with a more active participation of all the stakeholders. This meant that the service concept would have to be explained to all actors involved - from early customers to managers or service partners and their associates. The service would also need a strong and, above all, a coherent image.

This qualitative study with potential customers provided important insights for the development of the MOBSEV service concept. The analysis of the customer activities concerning loyalty programs management enabled better understanding the overall activities involved and how MOBSEV could enhance the customer experience. The analysis took into account the different touchpoints between the customer and the service along the usage of MOBSEV.

This study enabled the identification of new activities connected to MOBSEV first release in comparison with the classical methods for managing loyalty programs. These new tasks would also reflect new experience attributes, which were also ascertained. Loyalty programs in the mobile phone were a new service, not necessarily known by all shop assistants, and customers had to explain the new service themselves (Figure 1). The analysis of customer and service provider activities through service design tools, the customer experience was graphically communicated to the team developers, so it was more easily observable how these new tasks would affect the customer experience.

This approach also identified new steps on the process for managing loyalty cards, as was the case of inserting customer data in the server. The service users had to fill all their personal data from their loyalty cards in the service file system, so it would be available whenever they wanted to. However this was a new task, something that was not needed until the MOBSEV appeared. The understanding of these new customer procedures gave support to the MOBSEV conception (Figure 2). Since this preliminary study there was a consciousness of implications of being a self-service, and of how customers would have to serve themselves. Following this analysis, the development team became aware that the MOBSEV should be designed to reduce customer efforts.

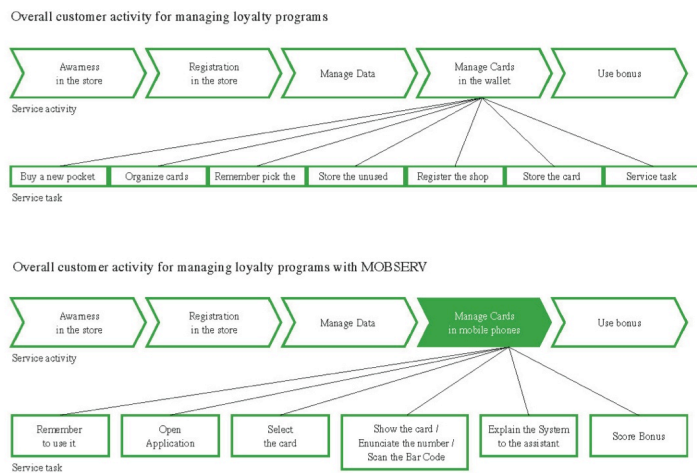
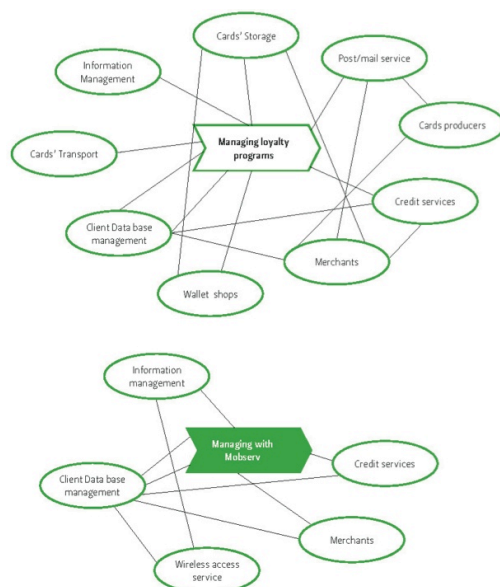


Figure 2 Identification of new customer' activities

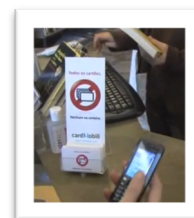
Figure 3 icons to code bar editing



The second study on customer experience was performed and its results helped the redesign of MOBSERV for its first release. Right at the end of the first cycle of interviews for this qualitative study, graphical representations of the service value constellation were assembled and presented to the service developers (Patrício, Fisk et al., 2011). These diagrams aimed to analyse the existing service concept and to explore new service innovation possibilities to enhance the overall customer experience and the company's contribution, creating new service concepts and offering integrated solutions (Figure 4). Through this analysis, the development team could up frame its perspective, and understand how the company's offering would fit as an input into the value-creating system, also considering the inputs offered by other firms (Normann & Ramírez, 1993). This way, for instance, they developed a featured to edit code bars, so the customer could best adapt to scan it in store (Figure 3).



Figures 4 Understanding the MOBSERV experience with customer value constellation



Figures 5 Brochure produced to explain the MOBSERV concept in stores.

With the MOBSERV a new value proposition would be offered, establishing new connections in the value network and changing the way customers managed their loyalty cards. As presented in Figure 4 the service experience would be moved from the traditional model to a new mobile experience model. The action of ‘managing loyalty programs’ would from now on involve fewer actors in the value creating system. Nevertheless the structure simplification revealed the demand of an increased effort from each stakeholder, and repositioned the company in the value constellation. To manage loyalty programs on a mobile phone would bring new technological, functional and even social challenges. Therefore the development of the customer value constellation, within which the MOBSERV was integrated, helped to understand how the service contributed to the customer experience and pointed out directions for positioning the service in a way as to enhance the customer experience and the firm’s competitive position. This pointed out the need for the company to create good partnerships considering all the parts involved in order to enhance experience (Figure 5).

Second Service Design cycle

The first release was launched in Java Script in order to cover a broader number of mobile phones. A new qualitative study was undertaken, six months after the first study and after this MOBSERV launch. The goal of this second study was to comprehend the early experience factors, and this way to use them as design attributes, optimising the service offering according to the different experience levels (Patrício, Fisk et al., 2011). The experience factors derived from this second study enabled a detailed understanding of the interaction between the customer and the service provider across the different service touchpoints.

Service Experience Blueprint

The in depth understanding of the customer interaction with the service enabled the identification of difficulties at different service touchpoints. The study therefore helped identifying the moments and what was involved in order to improve customer experience covering all levels of interaction with the service.

The Service Experience Blueprint (SEB) was used to support the service in the enhancement of the interaction experience (Patrício, Fisk et al., 2008). SEB allowed for the understanding of the details of the interaction experience for each touchpoint, as well as for the connection between touchpoints. These mapped outcomes, divided into the different tasks involved in the service operations, were helpful in the communication of the message to the development team.

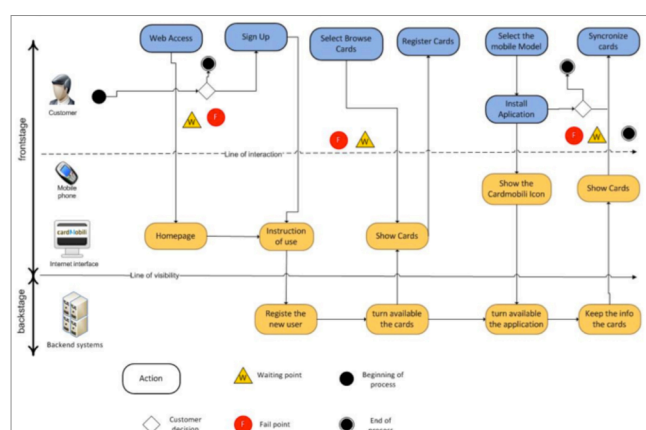


Figure 6 Service Experience Blueprint for MOBSERV - Registration

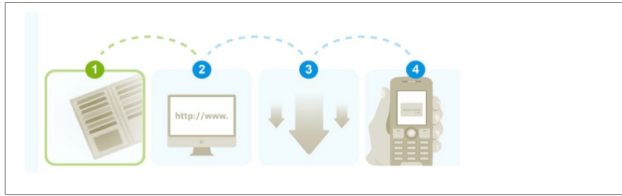


Figure 7 MOBSEV webpage tutorial - Registration

These tools contributed towards analysing the fail and waiting points they should focus on. As an example, the installing of the application in some models of mobile phones could be difficult and harm the registration experience for a new loyalty program (Figure 6).

The team of developers easily perceived SEB as they were using a common diagrammatic language used for programming as well (they were all made in Visio Microsoft release 2007). Attached to these SEB, several examples were reported, either being contributions from the qualitative interviews or small images illustrating the situations. The SEB also enabled the identification of failure points. For example, in the registration moment, the customer could experience several failing points: first they might not have wireless to access the webpage and first register. Then the customer had to select and browse his/her cards. Then he/she had to install the application on the mobile phone and synchronize his/her list of cards. These tasks took time and effort and might fail due to customer's network packet data or difficulties in understanding the procedure (Figure 7). Some customers would give up and blame the MOBSEV for lost of time. SEB helped to better visualize the steps where developers should get involved to enhance the customer experience.

Mind-Map for 'Security'

In view of subsequent milestones the development team had to be focused on specific topics of progress - Security was considered a priority, as potential users had revealed fearing the unknown. The interviewees had referred the security dimension several times in the first and the second qualitative studies. Therefore a brainstorming session was used and facilitated by the research team in order to open the concept for 'Security (Figure 8). The Mind-Map tool was a relaxed task, promoting team building. This session took two hours of work and counted with all the development team, (eight members at that time). All the process was video recorded allowing therefore the analysis of flows for idea generation.

Participants first wrote individually, seven words about security, which then they mind mapped with everyone's contribution. This broad topic was even more stretched generating more possibilities. Hence the security's centre was opened into ten branches - 'Trust, Theft, Backups, Hackers, Vouchers, Critical Cards, Encrypted, Encrypted perception, Phishing and Merchants. However the different paths were visually structured, and even if it had an organic shape, each one could understand relations and hierarchies among the sub-topics. This tool promoted a broader perspective on security issues, involving all research and team developers. Several actions were implemented afterwards as insertions of pin codes according to the different mobile platforms.



Figure 8 Mind-Map for Security issues.

Figure 9 Pin coding on different platforms.

Third Service Design cycle

At the third SD cycle several versions of the service adapted to different mobile platforms (Iphone, Symbian and Windows mobile) had already been launched. Along with the evaluation of these different versions in different contexts, new service features were also being conceived. The MOBSERV was being used regularly and so this SD stage came after the third qualitative study of experience as well. The third study aimed at understanding MOBSERV regular users and their experience requirements in order to incorporate them in the service, with increased accuracy.

Service Experience prototyping

Working with all service components and reaching a detailed design led to exploit Service Experience Prototyping (SXP). Prototyping is still an important challenge when dealing with the intangibility of services (Stickdorn, Schneider et al. 2010). The MOBSERV being mobile and involving several stakeholders had an increased complexity. While the 'Iphone's' version was being released, two researchers used the application and their own mobile phones were monitored so they could give a first input; several different tasks were performed in real context of use and were evaluated. In the same way during this last qualitative data gathering as its results were being implemented, the 'Windows Mobile' version was also developed, and the researchers' team were again invited to pilot this platform.

Service role-play

With the third qualitative study a short movie was made with the most important data gathered. The recorded interviews were presented to the developers' team. A task list of features and functionalities had been defined with the company support and approval and so this study results were also presented not only as a checklist but also with graphical indicators of performance of the regular users. Conversely, it was decided to study the EFs with the developers themselves, within role-playing activities for specific service tasks. At this point new features were being developed involving geo-referential location vouchers and coupons. Developers were especially considering the new tools for scoring bonus and the geo-referential commercial information. So researchers challenged them with two different circumstances - shopping at Christmas time and trying to buy a waterproof camera. Christmas time is the period where customers frequently buy many things, in many different places and with many different purposes, so customers may consider the stores where there are loyalty programs. On the other hand, to buy a waterproof

camera involves technological advice and the customer may want to compare prices on specialized stores. Developers had to act in pairs. The studied interfaces were fold-up into 3d low-tech mock-ups that participants had to use (Figure 11). A cardboard state the situation, for example: 'Christmas time'; then, there were pens, markers and other crafts' material to stimulate the edition in real time. These settings had the ability to promote conversation around the shopping situation.



Figure 10 Searching for offers role-play.

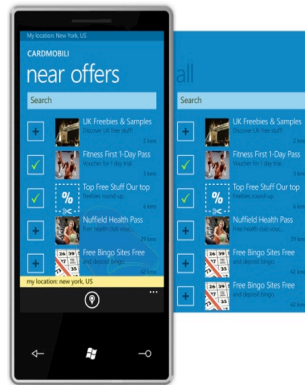


Figure 11 Offers' global search

At the end of the workshop, the different reactions were compared. With this exercise the development team could diagnose lived problems with their own application such as dealing with the reactions of other customers or feeling lost and share it loud and spontaneously. This activity had relevance in the sense that developers could feel by themselves the complexity of the realm experience. The situation promoted their sense of experience in what concerns shopping decisions and beyond technological features. Consequently it raised the need for new features such as a global search for new offers (Figure 11).

Conclusions and contributions

This study contributes to the incorporation of mobile service experiences through the whole Service Design cycle. This is particularly important with mobile services or services with a technological base with several releases and stages of concept development and implementation. This approach enabled the incorporation of customer experiences in the design of a mobile service considering different stages for adoption and use of it. The designer used a range of methods such as observations, interviews, context mapping, and journey mapping to better understand the customer experience. Then the different dimensions of experience were integrated according to the importance in relation to the different service development stages. The different tools in each phase allowed for service improvement and supported all stages (see Figure 12).

In the 1st Service Design cycle, the analysis of customer activities and of the value constellation enhanced the service innovation potential. These analyses also permitted the understanding of how new tasks would affect the customer activities and experience. The problems that were detected in moments of customer interaction were communicated to the developers based on their feedback. Consequently situations like the need for assistance in the app installation ceased to be an important issue when the service started to be designed for a smartphone. In the same way features like the code bar editing were implemented and taken out some releases afterwards.

The code bar scanning was not entirely functional and so these features only disturb the procedures.

In the 2nd Service Design cycle the failing points also led to outline possible solutions. Mind mapping gave clues and opened paths to work experience. Service experience prototyping enabled developers to evaluate experience considering the service as a whole, beyond technological features. The designer prepared each one of the activities described and took part in all the actions beyond being up to date to every evolutions of the service. The role of the designer was immersive, as expected, giving to the development team weekly feedback of what was being observed. This work was at all times visually and graphically represented with a language easily understandable but also different from the developer's common ground. The focus on specific aspects like 'awareness' or 'security' were demanded requirements and thus developers observed:

(...) Good time to put the whole team to dissect an issue that was bothering us. And allowed to exchange ideas. It concerned reorganization of how the various elements were bonded, and a deeper understanding of problems and solutions. (...) The Brainstorming later supported and structured the discussion around identifying priorities for the service in a relaxed way.

At a 3rd Service Design cycle activities to evaluate and prototype were prepared with low-tech mock-ups and labelled to framework a scenario and simulate a service event, this way making the developers put themselves in closer to real situations. The use of probes had a valuable contribution. Tangible items gave to the implemented actions the necessary step to bridge from the abstract to the concrete:

(...) We put ourselves in the place of the final user's experience living their difficulties attitudes and a more naturally use of the application. (...)The one that interested me most was the purchase of a photographic camera / Christmas shopping, because it was one that allowed me to see and feel for the first time what it was to use our product (or part of it) and allowed me to realize early design faults that had not even passed through my head, had we not tried to "use" the application in that context.

	Goal	Method	Outputs
1 st SD cycle	Identification of new experiential key factors Identification of new customer activities	Task analysis Explore MOBSEV concept with customer value constellation	New tasks with the new service. Stakeholders identification - Leaflets were distributed to the store helping to explain the service concept
2 nd SD cycle	In depth understanding of customer interactions with the service Open up key concepts	Service Experience Blueprint for different tasks Mind Mapping 'key topics'	Help on registration – web instructions step by step. Security issues. Mapping all the Inputs. Pin coding to all platforms, and, later on it was increased to security measures to specific loyalty cards.
3 th SD cycle	Detailed Service design Test Geo referential information To understand back office on mobile payments, coupons.	Service Experience Prototyping Piloting the new platforms Service Role-play	Mapping different contexts of use. Bar code orientation. The question of navigation within the app when making purchases in different pathways or with different purposes. Global search at the top of the display with the tab for coupons. The mobile payment has not yet been implemented.

Figure 12 shows the outputs attained through the SD cycles

Advantages were actively taken from the intrinsic design communication skills promoting internal communication required for new service development (Edvardsson, Gustafsson et al. 2000). As the service development was running the use of visualizing tools brought into play divergent and convergent ways of thinking. Developers were not familiarized with these ways of working and often a results' presentation or a playful deed had the power to break routines and to reach unformatted ideas. These approach and the activities developed allowed the team to draw attention to the customers experience requirements and take into account the perspective of the service globally. The iterative work has supported, above all, to decode the experiential requirements and systematically materialize them into design characteristics supporting the MOBSEV development and accomplishing customer aspirations. *Moreover the design researcher informed the developers of the MOBSEV impact following the service implementation in real-time. Therefore the technologic development for each MOBSEV release could more effectively incorporate the experience and consider their impact on the business environment.*

The work developed with MOBSEV start-up had an important and noticeable managerial implication: The iterative experience requirements incorporation affected the company's course and consequently their business model. The approach helped to think and judge in their relationship with their customers, with consequent change from B-to-C towards a B-to-B model. That is to say that the study of the end users revealed to be such a broad field for this specific service offering, that it was difficult to reach and answer properly to their experiential requirements. Therefore the MOBSEV ceased to be so focused on the end users, but went on to sell the solution for large operators, conclusion for which, this work has contributed. With the rapid evolution of Service Design, service designers have now a rich set of methods and tools to support the incorporation of customer experience inputs into their creative process. However, choosing the right combination from this set can be challenging. This paper shows how these methods and tools can be used across the iterative service design cycles, highlighting their contributions at each specific stage, which may provide guidance for other service design projects and contribute to a systematization of usage of service design methods and tools.

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Wearable probes for service design

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Abstract

Probes are used as a design method in user-centred design to allow end-users to inform design by collecting data from their lives. Probes are potentially useful in service innovation, but current probing methods require users to interrupt their activity and are consequently not ideal for use by service employees in reflecting on the delivery of a service. In this paper, we present the ‘wearable probe’, a probe concept that captures sensor data without distracting service employees. Data captured by the probe can be used by the service employees to reflect and co-reflect on the service journey, helping to identify opportunities for service evolution and innovation.

KEYWORDS: Service innovation, design probes, reflection, participatory design, personal informatics

Introduction

Service designers rely on a broad range of methods to elicit insights and contributions from stakeholders at different stages of the design process. Examples include role play (Svanaes & Seland, 2004); co-design (Sanders & Stappers, 2008); ethnography (Blomberg et. al, 1993); design games (Brandt & Messeter, 2004); make-tools (Sanders, 2000); situated and participative enactment of scenarios (Iacucci, Kuutti & Ranta, 2000); and design probes (Mattelmäki, 2006; Gaver, Dunne & Pacenti, 1999).

The above methods have to a large extent been used to learn about end customers, but currently service designers are increasingly involving service employees rather than end customers in their service innovation projects (Blomkvist & Holmlid, 2011) for reasons of efficiency, time, and availability. Various methods have been developed that focus on capturing insights into the service moments from a service employee perspective, including service mapping, sequential incident technique, and customer-sensitive walkthroughs (Rasila, 2012). However, little has been done on capturing the in-situ, moment-by-moment aspects

of the service delivery that provides a more detailed understanding of the service as it is performed (Holmlid, 2009).

In user-centred design, probes allow end-users to inform design by collecting in-situ data from their lives. This paper proposes a probing approach that enables service designers to continuously gather insights, elicit reflections, and establish a dialogue amongst the service employees. This can be used both for innovating new services and for improving existing services.

Probes in design

Probes have traditionally been used in user-centred design to provide user participation through self-documentation. Users are given specific assignments that match the information needs of the designer. The assignments are generally in a form that enables the user to capture the tasks and describe them through reflections; most commonly using diaries and cameras (Graham & Rouncefield, 2008). The results of a probe enable a designer to take a look into the personal context of a participant, uncovering elements such as cultural environment, feelings, values, needs, and attitudes. Probes must have open and exploratory qualities. These qualities enable the participant to record and reflect, in addition to exploring new opportunities for design. Since the early 90's, Gaver et al. (1999) and colleagues' *cultural probes* have manifested into various forms: Informational probes (Crabtree et al., 2003); Technology probes (Hutchinson et al., 2003); Domestic probes (Vetere et al., 2003); Mobile probes (Hulkko et al., 2004); Empathy probes (Mattelmäki & Battarbee, 2002); and Urban probes (Paulos & Jenkins, 2005).

Mobile probes (Hulkko et al., 2004) allow for in-situ capturing of data, and can provoke dialogue between the participant and the designer during and after their use. One drawback with the existing mobile probes is that they are disruptive by asking the users to stop and reflect on their actions. Taking inspiration from the emerging field of personal informatics and self-monitoring, we believe that a probe can be built that reduces these in-action disruptions on service delivery moments, while at the same time promoting individual and collective reflection.

Sensing and reflecting

The role and purpose of reflection and reflective practice in supporting technology for learning and play has been of interest to the Interaction Design and HCI community for some time (Fleck & Fitzgerald, 2010). Schön (1987:102) defines the concept of reflective practice as "*the capacity to reflect on action so as to engage in a process of continuous learning*". It can be seen as a three stage process: (1) going back to the experience that has happened in the past; (2) re-evaluating and understanding the experience in the light of current knowledge or experiences; (3) and deriving insights for future behaviour (Prilla et. al, 2013).

Reflecting on action through interaction with technology has extended through approaches in slow design, reflective design, critical design, inquisitive design, and technology as experience (Dalsgaard, 2008; Hällnas & Redström, 2001; Sas & Dix, 2009).

More recently *personal informatics* tools have reignited this interest in the community with research moving towards defining the many purposes of reflection (Fleck & Fitzgerald, 2010), and in particular making use of these new sensor-based technologies for reflecting on felt-life everyday experiences (Sas & Dix, 2009). Personal informatics tools and services facilitate the process of collecting, analysing, and presenting personal data on various aspects of an individual's life for reflection. A large percentage of the services focus on monitoring and understanding patterns in relation to wellbeing and health (Swan, 2009).

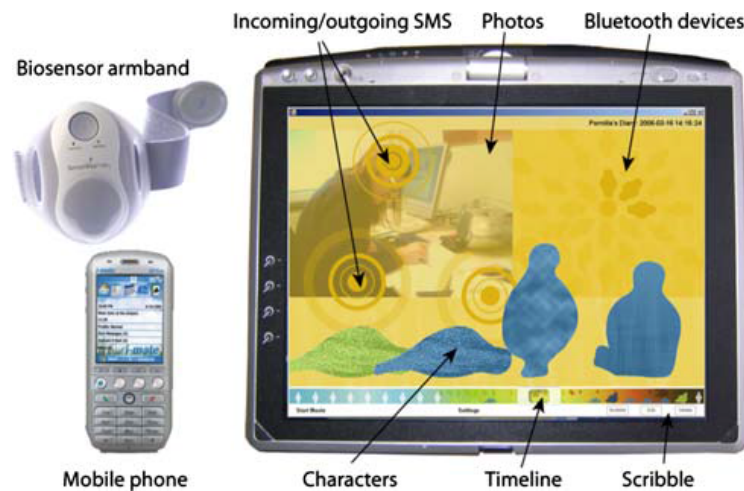


Figure 1: Affective Diary (Lindström, 2006, page)

Figure 1 shows the Affective Diary system (Lindström 2006), a personal informatics tool for stress management. It allows the user to automatically record stress levels during the day through a skin conductance biosensor that continuously sends data to the user's smartphone. The recorded stress levels are uploaded to the user's PC in the evening, allowing for reflection and annotation on a timeline. The resulting stress diary can be shared with others, e.g. a therapist, to allow for co-reflection.

In the context of work, it has been advocated the importance of the social dimension in reflection (Boud et al., 2006; Hoyrup, 2004) and the ability of collaborative reflection to craft new knowledge from shared experiences that can inform work redesign (Wood 1997; Hoyrup, 2004). As discussed by Prilla et al. (2013), little has been done in tapping into and designing tools to inform this type of collaborative reflection on work practice, or as in this case, service delivery. Müller et al. (2013) recently studied the use of proximity sensors to record daily interactions and duration of the service provided by home carers and dementia patient. The visualisation of data enabled carers to reflect on their work, identifying behaviour patterns, and was used as a starting point to discuss carer practices.

Similarly, in this research, we see the potential of using probes as part of a longitudinal method of evolving the service. This could be achieved by probing, non-intrusively, elements of the service employees' service moments, then facilitating both individual and collaborative reflection at a later stage on what was collected regarding this moments over time. We believe that this method can act as kind of feedback mechanism that will help both designers and service employees in a dialogue that will inform the continuous evolution and improvement of the service in question.

Service Case: Food Delivery for Elderly Citizens

As part of a research project on technology support for service innovation, we were presented with the challenge of designing technology to capture the experience of service employees distributing pre-prepared meals to elderly citizens in a large Northern European city (Figure 2). They were employees of a large logistics organisation that had not provided services of this kind in the past. The organisation's goal in the research project was to enhance the dialogue between the service employees and management, in an attempt to tune into insights that could improve the existing service or help identify new service opportunities for innovation.

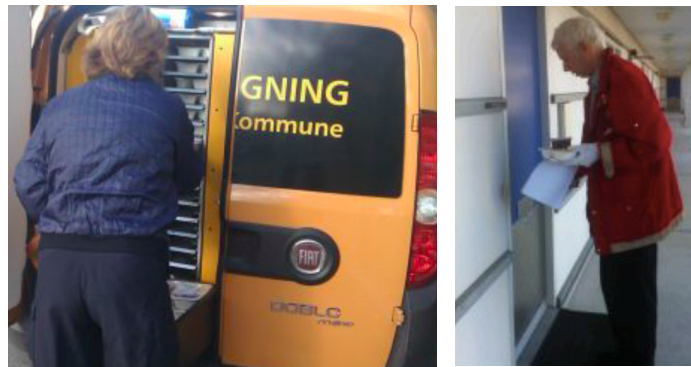


Figure 2: Food delivery service (preparation and delivery).

To learn more about the service context we did a small fieldwork involving shadowing three service employees, observing and interviewing, during the completion of a typical daily route of delivering meals. We found that even though every move is monitored, controlled and planned down to seconds, the service employees still find room to do things their own way. In fact their ability to 're-design' or fine-tune the procedures seems a necessary part of what makes the logistic of this service work in practice. From this, it was clear that these service employees have the potential to identify and re-imagine new service opportunities.

The following insights from the fieldwork identified specific characteristics of this type of service:

- » *Flow and mobility*: Quick delivery interactions are required to fulfil their service obligations.
- » *Tacit Knowledge*: They take on the task of looking out for the elderly citizens they deliver to: calling for assistance; dealing with incidences; understanding that Mrs. X takes longer to answer the door; and sometimes becoming a 'handy-man' (e.g.. change batteries in a wall clock).
- » *Community-driven*: They share experiences and stories from their job with each other during breaks, they discuss the planning of the routes together, and they occasionally help each other out when they are out on their delivery routes.

Requirements for the probe

From the service insights a list of requirements were identified that were specific to this type of service and therefore considered important for the use of existing, or the development of new, design methods for gathering insights from service employees:

- A. *“In the service moment”*: The method should allow for capturing data about the service and the service context *in-situ*;
- B. *Non-disruptive*: Due to the nature of the service employee’s work, there should be minimal disruption from an external task, or method;
- C. *Mobile (on the user)*: The varying contexts and movements caused by the high degree of mobility and non-disruptive nature of the service prove the need for an “on the user” method of capturing their service moments;
- D. *Capturing the temporal aspects of service moments*: The method must employ an approach that takes into consideration the entire service journey;
- E. *Senses the environment*: The method should have the ability to sense the external factors that surround the employees environment;
- F. *Supports collaborative reflection*: It must have the facility to support collaborative reflection;
- G. *Scalable*: It can be used by all service employees;
- H. *Longitudinal usage*: It can be used over a short or even continuous period in identifying the changing nature of events and various contexts.

Analysis of existing service design research methods

To help us understand how existing research methods in service design fit the service context outlined in this paper, we mapped the methods against the requirements A-H identified above. The results are shown in Table 1.

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Interviews	-	+	-	-	-	-	+/-	-
Observation	+	+	-	+	+	-	-	+/-
Cultural Probes	+	-	+	-	+	+	+	+
Technology Probes	+	-	-	+/-	-	+	+	+
Mobile Probes	+	-	+	-	+	+	+	+

Table 1: Matrix representing method capability against service requirement

The list of methods is based on Segelström’s (2013) review of current research methods in service design. Comparing eight commonly used textbooks in the field, including (Stickdorn & Schneider, 2010), he found that the three most popular methods were *interviews*, *observation* and *probes/diaries*. We have divided the probes category into *cultural probes*, *technology probes* and *mobile probes*.

A plus indicates that the requirement is supported by the method, a minus indicate that it is not supported, while a “+/-” means that it is supported to some degree. Observation and interviewing are less disruptive in the reflective process during service moments. However, in these methods do not support collaborative reflection. Methods like traditional culture probes and mobile probes can be kept on the user (mobile) and they are good at capturing the environment (e.g. photos) and support reflection. However, their disruptive nature

proves to be cumbersome for this service context. We see from Table 1 that no single method satisfies all requirements, and there is consequently clearly a need for new design methods for this kind of service design projects.

The Wearable Probe Concept

The requirements inspired the *Wearable Probe* - an exploratory probing concept that helps elicit forms of reflection after a daily route of a service employee for developing dialogue toward service improvement. The probing device (leftmost in Figure 3) disguised as an app. running on a mobile phone, placed in the service employees uniform, captures changes in the environmental elements of service moments throughout the entire service journey. The captured sensor data are later represented using an ambiguous representation (middle of Figure 3). This interface is intended to be used upon completion of a route to prompt individual reflection on past service moments (reflection-on-action) during the route. The reflections of one service employee can later be shared with other service employees through a collaborative reflection space (rightmost in Figure 3).

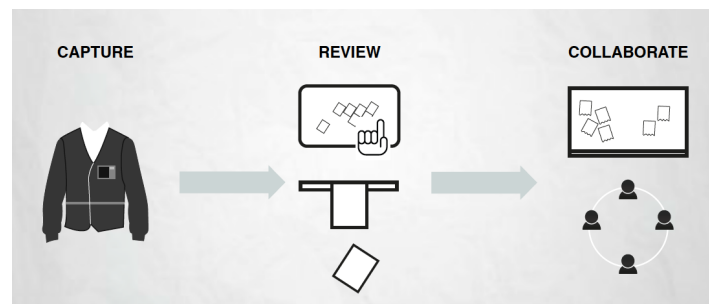


Figure 3: Three steps for reflecting using the Wearable Probe

Capturing service moments

Today the service employee uses various cues to help them reflect on the service route. At this stage, the following more concrete and visual elements of prompting reflection were considered as cues: physical location; people they interact with; activities; time of day; duration; landmarks; temperature; and sounds.

We decided to use a standard Android smartphone as a prototyping platform and built an app running in the background capturing the following data elements solely from sensors on the smartphone.

- » *Smartphone camera: Blurred/pixelated photo of the surroundings.* Using the power of visual imagery for meaning making; we focused on using light intensity and colours as a source for ambiguity;
- » *Smartphone microphone: Sound levels.* Sudden changes in sound levels were recorder;
- » *Smartphone accelerometer: Movement.* The accelerometer captured elements of physical movement over a period of time (i.e. running up stairs), and incidents leading to quick actions (i.e. helping citizen falling out of bed);
- » *Smartphone GPS: Location.* The GPS gave data that about time used at various locations, and the speed between locations.

Visualisation and reflection-on-action

In the first version of the probe, we have used ambiguity as an approach. Ambiguity empowers people to form their own understandings from what is perceived during the reflective practice (Gaver & Beaver, 2003). Thieme et al. (2011, p. 284), state “*design of more open-ended artefacts that leave space for multiple and idiosyncratic interpretations have the potential to challenge individuals to resolve their inherent ambiguity through sense-making processes*”. Furthermore, too narrowly constructed artefacts are less likely to make us reflect, or even wonder (Paulos & Beckmann, 2006).

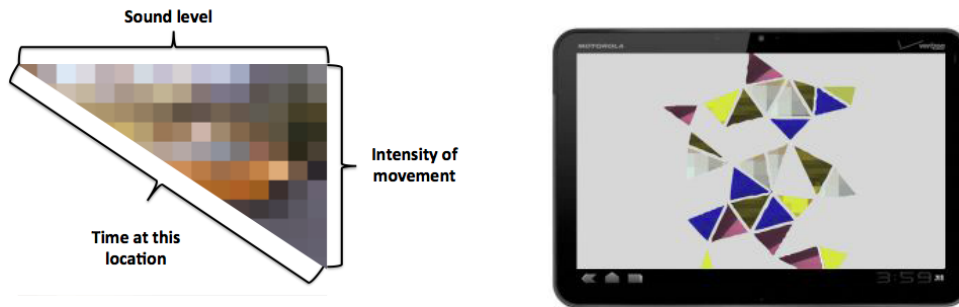


Figure 4: (left) Data from service moments as prisms and (right) prisms mosaic.

The service moment prism is the starting point for visualising a service moment. A prism represents a snapshot of a period of time based on the surrounding elements captured by the smartphone. The triangle shows a pixelated snapshot from the smartphone camera, while the lengths of the three sides of the prism represent sound level, intensity of movement, and duration. The temporal aspects of data from the service moments captured were represented spatially as a mosaic; in towards out indicated the time it was captured during the route (Figure 4).

Collaborative reflection

The service moment prisms can be printed and viewed in a shared physical or virtual space by service employees. The reflections that have taken place, notes and discussion held amongst peers, can then be discussed, as *collaborative reflection*, in meetings held amongst the supervisor and colleagues. The ability by the service employees to print any of the prisms enables further pondering, annotation, and usage in collaboration with each other and management. The physicality of such interactions creates richer dialogues that express insights into possible new ideas for services or improvement of existing services.

Prototype and initial trial

A working prototype of the *Wearable Probe* was developed on an Android-based smartphone, and as an initial proof-of-concept test we captured data elements during a route with three service employees carrying the phone in the pocket of their uniform. This initial test was purely a feasibility and technical test aimed to give us a first impression of what kind of data will be captured by the probes. The probes recorded a snapshot every 10th second, each consisting of: a pixelated image from the camera, the sound level from the microphone, the activity level from the accelerometer, and the position from the GPS. Each route lasted

about two hours, leading to a total of approx. 250.000 snapshots from the three routes. The prototype was found to work, and to provide data that could be used for visualisations.

Further evaluations of the concept in dialogue with the users are required. These evaluations will focus on experimenting with the representations and range of experience elements captured by the probe. The concept as it stands focuses heavily on extreme changes which would result in more the unfamiliar (i.e. loud sounds, long durations, etc.), however representing data elements of common experiences, once exposed, may result in questioning the familiar which makes way for alternative ways of reflecting on moments between events of delivering the service.

Discussion

We are interested in further exploring collaborative reflection. The concept has similarities personal informatics systems such as the Affective Dairy (Lindström, 2006) that focuses on capturing data for individual use, however we are also interested in the process required to share reflections and work on them collaboratively. We believe it is possible to create methods and tools, such as the *Wearable Probe*, that extend individual reflection into a collaborative dialogue.

An obstacle of the probe is related to issues with privacy and security of the data captured. Employees could become hostile in their use of the probe if management does not enforce policies regarding access to raw data. They would be worried that their daily routes are being monitored and the raw data would be used to gauge their efficiency. There is also an issue in the motivation to use such a probe. Here, further studies are required to help understand the incentive-driven and motivational qualities of use and to what degree the ambiguous elements of data, and their representations, decrease/increase motivation for use. It has been advocated that employees that have shared elements likened to a community of practice benefit from the social dimension of *collaborative reflection*, and that it generally leads to positive outcomes (Prilla et. al., 2013). However, there are also the mechanisms required to prompt employees to reflect on their data and best practices that should be employed require further investigation.

Conclusion

Through a proof-of-concept prototype we have shown that design tools inspired by personal informatics, such as the *Wearable Probe*, can be used to capture sensor-data from the service context for eliciting reflection from service employees. The insights from the captured data can be used as a form of memory-aid on past experiences, for identifying patterns, or for exploring discrepancies. We believe that the *Wearable Probe* used as a tool for reflection and co-reflection has the potential to uncover insights that can lead to improvements of existing service and innovation of new services through a dialogue with management and designers

Future work will focus on: types of sensor data being captured; algorithms that can analyse multiple sources of data; visual representations for meaning-making and thus reflection; and mechanism to prompt reflection on data and forming dialogue amongst peers.

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The Applicability of Online Communities in Health Service Co-Design

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Abstract

Evidence indicates that engaging local communities in health service co-creation can contribute to more responsive and efficient services. A variety of approaches have been proposed to involve the various stakeholders along the service life-cycle. While the planning, delivery and monitoring of health services are increasingly characterized by an extensive use of the Internet, little is known about its applicability in their co-design. However, the current health service co-design practice presents major challenges in involving overloaded staff and hard-to-reach patients. This study aims to explore the challenges faced by the health service co-design practice in physical environments and the potential and limitations of online communities for health service co-design. We will describe how an online community was integrated in a recent health service design project, and discuss some observations from the design facilitators and responses from the project coordinators and participants.

KEYWORDS: service co-design, online communities, healthcare

Background

Community engagement in the co-creation of health services has been suggested to lead to more efficient services that are more responsive to local community needs (Fisher, 2011; Needham & Carr, 2009; Wolstenholme et al., 2010). The involvement of the public and the various stakeholders in the co-design and co-production of health services enables improvements not only to the pathways and processes, but also to the aesthetics of experience (Bate & Robert, 2006; Bowen et al., 2010; Nesta, 2012; Vaajakallio et al., 2013). Accordingly, health care commissioners have been encouraged to establish a continual and open dialogue with key stakeholders, including the public, patients and health professionals to improve services and outcomes (The NHS Confederation, 2013). A variety of approaches have been proposed for the implementation of this dialogue along the planning, design, delivery and monitoring of health services (NHS England, 2013). While the planning, delivery and monitoring of health services are increasingly characterized by an extensive use

of the Internet, the current health service design initiatives are fundamentally based on face-to-face interactions with little to no use of the Internet. However, it is acknowledged that the practice of collaborative design presents some practical challenges in ensuring understanding of the problem and balancing rigour and relevance of the solution (Pirainen et al., 2012). In particular, facilitators of face-to-face interactions are confronted with key factors, such as group composition, supporting technology, individual motivation or physical constraints (e.g. place, time), that inevitably affect the quality of the design (Karhumaa et al., 2009).

On the other hand, Internet-based approaches to customer engagement have been successfully applied to collaboratively develop new products and services in the private sector (Nambisan, 2002; Piller & Walcher, 2006; Sawhney et al., 2005). In particular, online communities, which bring together users with common interests to share their experiences, have become a rich source of socially generated knowledge that complements the knowledge generated from individual customer interactions (de Valck et al., 2009). It is acknowledged that the acquisition of patient experiences via online communities is destined to become of major value to the public and healthcare organisations (Rozenblum & Bates, 2013). More continuous and intense interactions as well as wider audiences are some of the benefits associated with virtual environments in contrast to physical environments (Nambisan & Baron, 2007). However, UK's healthcare organisations are yet to adopt online approaches to public and stakeholder engagement and little is known about the applicability of online communities in the collaborative design of health services.

The aim of this study is to explore the challenges faced by the practice of health service co-design in physical environments and the potential and limitations of utilising online communities for health service co-design. A better understanding of the potential of online communities will provide insight into how service designers, as developers of communities for service innovation (Han, 2010), can extend their role to the virtual world.

Method

An action research approach (Davison et al., 2004) was taken with the dual intention of improving the quality of a particular health service and contributing to service design theory and knowledge. Therefore, the authors were actively and deliberately involved both in design practice and research. One of the authors played the role of workshop facilitator, while the other played the role of online facilitator. The study took place in the context of a health service design project commissioned by Islington Clinical Commissioning Group, London. This project aimed to create integrated care pathways for safer medicines management amongst older people without compromising on cost and efficiency. A team of three experts in the areas of systems thinking (big picture understanding), design thinking (user-focused), risk thinking (proactive risk assessment) and lean thinking (flow and waste-focused) designed and facilitated three 3-hr stakeholder workshops. Eight stakeholder groups were invited to participate, namely, patients, carers, district nurses, GPs, community pharmacists, hospital pharmacists, social care workers and commissioners.

Each workshop was planned with a specific objective: i) whole system understanding and issue prioritisation for the first workshop; ii) idea generation and solution development for the second workshop; and iii) implementation planning for the third workshop. It was planned that the workshop participants would form small teams (6-10 people for each team) for discussion and design activities. At the first workshop, the participants were introduced to systems thinking in order to understand the whole system and identify the main issues

affecting the service. The workshop facilitators presented a number of textual and diagrammatic representations, including persona, stakeholder maps, and process map, as a way to understand the service and identify potential issues and challenges. The participants were then introduced to proactive risk analysis to prioritise the most sensitive issues. At the second workshop, the participants were introduced to lean thinking in order to identify the root causes of the higher-priority issues and describe the best desired outcome for the problematic situation. A number of solutions developed in different contexts were then benchmarked by the workshop facilitators in order to encourage critical thinking in the development of ideas. At the third workshop, the participants were introduced to the concepts of business modelling and planning in order to develop a business case of their proposals. In particular, the workshop facilitators presented the business model canvas as a visual way to guide their thinking in the specification of their proposed service models.

In parallel with the workshop activities, an expert in the areas of innovation communities and knowledge management designed, developed and facilitated an online community (**Error! Reference source not found.**). A member account at the online community was created for each of the participants that provided an email address. All the registered members received their user credentials in a welcome email explaining the purpose of the online community together with a summary of the project. Each team was allocated a space on the online community where to store their documents. A number of online discussion tools, including posts, question and answers, and polls, were enabled for the interaction of the participants. Member accounts were also created to provide access to other stakeholders that were unable to attend any of the workshops, but were still interested in following the project. At the end of each workshop, the online facilitator published the documents presented and generated during the workshop. External documents that could not be discussed during the workshops, such as relevant research evidence and guidelines, were also published on the online community in order to extend the knowledge base of the



Figure 1: Workshops space on the online community.

participants.

Data were gathered using several methods. In order to understand the practical challenges of face-to-face workshops, the participation patterns of workshop participants and the knowledge flows and interactions between workshop facilitators and participants were carefully observed and reflected. The observations were complemented by the analysis of the documents and contents generated by facilitators and participants all through the design process. In order to explore the potential and limitations of the online community, online participation and activity patterns were observed and reflected. In addition, a questionnaire (Figure 2) on how and why the workshop participants did (or did not) interact with the online platform was completed by 20 workshop participants at the end of the final workshop. Furthermore, semi-structured interviews were carried out with three project coordinators, namely, the head of medicines management at Islington CCG, the clinical lead of this project, GP at Islington, and the lead pharmacist. The interviews provided a complementary perspective on both the challenges faced by the workshops and the potential and limitations of the online community.

<p>1. Did you visit the project web site? _ Yes _ No</p> <p>2. If no, why? (Please tick all that apply) _ I did not know there was a project web site _ I do not have access to the Internet _ I was not provided with a user account _ I was not interested in visiting it _ I did not have the time to visit it _ Other (please state) _____</p> <p>3. If yes, what did you find useful? (Please tick all that apply) _ Project background documents _ Workshop presentations _ Discussion tools (e.g. posts, polls) _ Other (please state) _____</p> <p>4. What features and improvements would you like to see in the website if you would participate again in this project? _ More visual content (e.g. Workshops videos, photos) _ More social content (e.g. Twitter, LinkedIn links) _ Improved usability (e.g. easier navigation) _ Other (please state) _____</p>

Figure 2: Online community evaluation questionnaire.

Results

Challenges faced by the health service design workshops

Two main challenges were identified in relation to the workshops. Firstly, it was observed that the participation of stakeholders in the workshops was inconsistent and uneven. As shown in Table 1, twenty people on average participated in each workshop.

	<i>First workshop</i>	<i>Second workshop</i>	<i>Third workshop</i>
<i>No. of participants</i>	23	18	20

Table 1: Workshop participants by workshop.

However, as shown in Table 1Table 2, only half of the participants were able to attend all the workshops. Participants alleged work commitments as the reason why they could not attend one or more workshops.

	<i>Three workshops</i>	<i>Two workshops</i>	<i>One workshop</i>
<i>No. of participants</i>	15	4	11

Table 2: Workshop participants by number of workshops attended.

On the other hand, some professional stakeholders groups, notably social care workers, had a limited representation in spite of their potentially important contribution to this project. Table 3 shows the number of workshop participants by stakeholder type. The project coordinators reported during the semi-structured interviews that this was due to the reduced number of staff available at some organisations. Patients and carers also had a limited representation, with only one patient or carer participating in each team. The project coordinators admitted during their interviews that patients and carers were especially hard to reach and a more continual communication with them would have facilitated their recruitment.

	<i>Patient and carer</i>	<i>GP</i>	<i>Practice manager</i>	<i>Community pharmacist</i>	<i>Community nurse</i>	<i>Hospital pharmacist</i>	<i>Hospital consultant</i>	<i>Social care worker</i>	<i>Commissioner</i>
<i>No. of participants</i>	3	5	1	3	4	3	1	2	8

Table 3: Workshop participants by stakeholder type.

Secondly, it was observed that the level of analysis of the participants was constrained by the limited duration of the workshops. Only core principles and a very simplified version of the methods for the various thinking approaches could be introduced and used in the workshops. Also, the workshop facilitators did not find time to present and encourage the discussion of research evidence and guidelines. Consequently, the workshops did not allow for the analysis of much information that the project coordinators had to include in their own analysis once the workshops concluded. The documentary analysis of the workshop outputs and the reflection on the workshop activities revealed that the participants were not

able to fully apply the various thinking approaches in their design activities. For example, a lean principle such as poka-yoke was introduced for solution development. It was reported by some participants that they were keen to think through this principle, but were not able to find time to do it due to the limited time available. Nevertheless, participants also reported to have used the two to three weeks between each workshop to reflect on, consult and research into their ideas. The coordinators acknowledged that the workshops were planned with a limited duration of three hours due to the busy schedule of some participants and the cost of organising each workshop.

Potential and limitations of the online community

Membership to the online community was widely spread among workshop participants. As shown in Table 4, twenty-five participants in total were assigned a member account. The 5 remaining participants could not be assigned a member account either because they did not provide an email address or because they were not Internet users. Their accounts were created after having participated in a workshop for the first time since the facilitators were not able to obtain their full details and consent until then. Additionally, another 15 member accounts were created for the workshop facilitators and other stakeholders that were unable to participate in any of the workshops, but still were interested in following the project.

	<i>Members and accessed the community</i>	<i>Members and did not access the community</i>	<i>Not members</i>
<i>No. of participants</i>	13	12	5

Table 4: Workshop participants by membership and access to the online community.

However, as shown in Table 4, the web analytics revealed that almost half of the participants with a member account never accessed the online community. As shown in Table 5, the questionnaire showed that their unawareness of the online community and lack of time were the two main reasons why they did not access the online community.

	<i>I did not know there was a project web site</i>	<i>I do not have access to the Internet</i>	<i>I was not provided with a user account</i>	<i>I was not interested in visiting it</i>	<i>I did not have the time to visit it</i>	<i>Other</i>
<i>No. of responses</i>	3	1	0	1	2	0

Table 5: Reasons why participants did not visit the online community.

As shown in Table 6, among those participants who accessed the online community, the web analytics exposed that more than half of them continued doing it after the workshops period. Project coordinators recognised during their interview that the online community had become a useful tool for them to view and share with others the documents that were presented and generated during the workshops, even after these had already concluded.

	<i>Accessed during and after the workshops</i>	<i>Accessed only during the workshops</i>
<i>No. of participants</i>	7	6

Table 6: Participants by period of access to the online community.

As shown in Table 7, the questionnaire revealed that this facility to access the documents published by the online facilitator was also the most useful feature of the online community according to the participants. However, the participants did not find the discussion tools so useful. Indeed, the level of online interaction was very limited, with all the discussions initiated by the facilitators and the project coordinators. No comments were made by the members of the online community on the contents published by the online facilitator.

	<i>Project background documents</i>	<i>Workshop presentations</i>	<i>Discussion tools</i>	<i>Other</i>
<i>No. of responses</i>	8	8	3	1

Table 7: Most useful features of the online community.

As shown in Table 8, the participants suggested the publication of more visual content as their preferred improvement for the online community. The usability of the online community and its integration with external social contents were the two other improvements suggested by the participants.

	<i>More visual content</i>	<i>More social content</i>	<i>Improved usability</i>	<i>Other</i>
<i>No. of responses</i>	6	3	3	1

Table 8: Suggested improvements for the online community.

Discussion

Three main themes emerged in relation to the challenges faced by the workshops and the way that the online community was used by the workshop facilitators and participants. Further research is suggested for each of the themes.

Firstly, the highly-distributed nature of the target service required the participation of many different stakeholders, as it is recognised that the involvement of all key stakeholders is crucial for the success of design projects (Smith & Fischbacher, 2005). However, the project coordinators had difficulties to recruit and involve some key stakeholders. Busy professionals, low levels of staff and hard-to-reach patients and carers translated into some key stakeholders missing one or more workshops. The online community alleviated this

problem by facilitating the involvement of new participants as well as keeping those missing one more workshops informed and connected to their teammates. Nevertheless, the role of the online community in the study was limited by the unidirectional and contingent approach to stakeholder involvement applied by the project. Further research is therefore required to understand how the extended reach and higher flexibility of online communities can help to overcome this challenge by establishing a bidirectional and continual dialogue with key stakeholders.

Secondly, the complexity of the target service required a detailed analysis of the problematic situation and the proposed interventions. In particular, it is highlighted the need for a whole-systems approach to the design and planning of health services (Edwards, 2005). However, the participants had difficulties to apply a level of analysis consistent with the goals of the workshop. Their analysis was constrained by the limited duration of the workshops at all the stages of the design process. The online community helped participants to reflect on their ideas in between the workshops by providing them access to the documents presented and generated in the workshops. Nevertheless, the ideas of the participants were hardly shared and discussed in between the workshops due to the low levels of online interaction. Further research is required to understand how online communities can help to extend the analysis and discussion between key stakeholders beyond the limits of their interaction in the workshops.

Thirdly, the knowledge-intensive nature of the target service and the complexity of its context required the integration of external knowledge sources into the internal knowledge base of the participants. In particular, it is acknowledged that the local interpretation of research evidence and guidelines by all key stakeholders is essential to ensure the efficacy of design interventions in healthcare (Carr et al., 2011). However, the workshop facilitators had difficulties to integrate external knowledge sources relevant to the design intervention. Their presentation and analysis was constrained by the limited duration of the workshops at all the stages of the design process. The online community provided relevant research evidence and guidelines that could not be presented during the workshops, yet this knowledge was hardly enacted and made social due again to the low levels of online interaction. Further research is therefore required to understand how online communities can facilitate the integration of external knowledge sources into the stock of knowledge constructed and shared by key stakeholders.

Conclusion

This study aimed to explore the challenges faced by the practice of health service co-design in physical environments and the potential benefits and limitations of utilising online communities for health service co-design. The results have shown three fundamental problems faced by a health service co-design workshops that were alleviated by integrating an online community in the design process. However, the online community also exposed some limitations to engage its members in the analysis and discussion of the problem and its potential solutions. Further research on service design in virtual environments is therefore needed for online communities to be better utilised in health service co-design.

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Weaving Place into the centre of Service Design: A reflective case study.

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Abstract

This paper proposes a design anthropology of place in the design of services, particularly when designing community based services for the elderly. Drawing on two service design projects located in the Byker area of Newcastle, UK, which brought together Ordnance Survey [OS], Age UK Newcastle and a Post-graduate Masters programme, in this paper it describes how design methods and practices captured and communicated a sense of place. The paper takes an anthropological perspective to reflect on how these methods make visible and tangible the every day informal networks that support the elderly community within Byker. Finally, the paper considers how this approach contrasts with the UK Government's perspective that reduces transactions to economic units and questions the role of service design and design anthropology in communicating the values that are so central to weaving place-making, values that cannot be reduced to simple metrics.

KEYWORDS: service design, place making, design anthropology

Introduction

Focusing on two service design projects, which brought together Ordnance Survey [OS] and Age UK, it describes the importance of design methods and practices in the understanding of place for service innovation. Initiated from a shortlisted crowd sourced project from the 2012 Geovation Challenge, the location for the research is in the Byker area of Newcastle, with the research undertaken by two MDes Service Design Innovation students under the guidance of their tutors. Drawing upon their findings, this paper proposes that an anthropology of place is central to the design of services particularly those looking to mapping and designing personal and community services for elderly people.

Thirty years ago Brubaker (1984, p. 29-35) noted the unifying characteristics of Western rationalism that emphasises calculation and standardization of processes and the displacement of social relations (for example, call centres and the automation of services). The notion of efficiencies of bureaucracies and reduction of many services to economic and automated transactions, characteristically leads to an approach defined by a growing

depersonalization of many state and private services, concomitant with the objectification of the recipient (Espeland & Stevens 1998). When applied to today's societal issues – for example, our ageing population and mounting chronic health conditions - this approach does not reflect the complex needs of the people who use the services, many of which are provided by local and national government, the charitable sector or contracted third parties (McVeigh, 2012; Ramesh, 2013). Furthermore, services based solely on economics ignore the role and knowledge of place in service design innovation which then limits the potential involvement of support groups and partnerships.

Outwardly the UK government appears to be embracing a more joined-up approach to place, with its launch in 2011 of its pilot programme 'Whole Place Community Budgets – Rewiring Public Services Around People.' Selecting four areas, Essex, Greater Manchester, the West London Tri-Borough (Hammersmith and Fulham, Kensington and Chelsea and Westminster) and West Cheshire to pilot the approach, the emphasis was on the citizen's experiences, looking at the whole system rather than disjointed services. The programme was completed in October 2012 with the publication of their business cases and the establishment in March 2013 of the Public Services Transformation Network (PSTN) that will support new areas into taking a Community Budget Approach. According to the Ernst and Young report (January 2013), the four pilot sites identified their own projects as part of the development of the Community Budget programme. The themes agreed for the aggregation of these budgets were health and social care, families with complex needs and work and skills. It is not the intention of this paper to critique this current government scheme but to question how place is configured and to challenge 'the dominant framework of modern thought that knowledge is assembled by joining up observations taken from a number of fixed points into a complete picture' (Ingold, 2007, p. 88). Instead, this paper argues for an alternative notion of place, drawing upon literature from phenomenological thinkers and anthropologists who approach the understanding of place from a different standpoint. I consider how place is essential to bringing to life interwoven quotidian living, that is as life as lived, which is central to service design innovation for the elderly.

This paper frames the practice of co-design within discourses of design anthropology (Gunn, Otto & Smith 2013; Halse et al., 2010) and describe the methods and practices of co-designing that were used within the Byker project to thread together the lives of the elderly, to foresee and to improvise future scenarios. The project carefully assembled the daily ephemera and stories to create future scenarios that Hirokazu Miyazaki (2004) (in Ingold 2013, p. 214) calls a method of hope 'where the lives it follows, are inherently experimental and improvisatory, with its aim to enrich those lives, causing them to become more sustainable'. With the current Government's emphasis on the need to redesign public services, applying a more consistent and unified- approach, it is proposed that we need to go beyond the current processes of commensuration and explore ways in which service design and anthropology can capture and convey the interconnected nature of place.

Background

With over two hundred years experience mapping the UK, in 2008 Ordnance Survey embarked on an open innovation competition called 'Geovation'. Organised and delivered by the service innovation consultancy Nonon, each year a social challenge is identified and developed by a panel of experts. Central to each is the notion of creating social value to a specific location through the application of OS's digital open geographical data. Ideas for the challenges are then developed using crowd sourcing methods within the UK .

In 2012 Age UK Newcastle was shortlisted for the UK's third Geovation challenge "How can we transform neighbourhoods in Britain together." Formulating and presenting an idea from daily experiences of working at Age UK in Newcastle, an employee from the organisation proposed a solution called 'Where Next' that would use community maps to enable vulnerable older and isolated people to better engage with and integrate into their local community. Although the project was unsuccessful in the final round of bidding, it was considered by the organiser of the Geovation Challenge at OS and myself (a judge for the competition), that the idea had great potential, both in exploring digital geomedias in community based services, and in offering an opportunity to demonstrate the role of design methods and practices in understanding place in service design innovation. On meeting the employee at Age UK Newcastle it was decided by her and her manager and the tutors from LCC, University of the Arts, that Byker in the East End of Newcastle would provide a suitable location for the project with the focus on the development of some form of peer-based, person centred network of services for the elderly.

The Byker Estate, built between 1968 and 1982 and designed by Ralph Erskine, an architect recognised and acclaimed for his social housing, is a notable landmark in the area. According to Pendlerbury & Gilroy (2009, p. 179) the Byker Estate adjacent to the main shopping street in Shields Road, has an unusually and distinctly strong sense of a place-bounded community and pre-dates the housing development, creating a unique character for the area. However, it is also noted by the authors that Byker is economically deprived with high levels of unemployment that reflects the decline of traditional industries (13.5% of the ward is unemployed compared to the Newcastle average of 8.0%, with the never-worked or long-term unemployed totalling 4.1% compared to the City's 2.4%). The percentage of elderly people living in the ward is 65-74 years of age comprising 8.1% of the ward compared to the City average of 8.4%, with the residents who are 75+ of age representing 7.4% of the local population which is below the average of 7.6% across Newcastle (Newcastle Census, 2001).

Theorizing Place

Understanding place is not a distinctive standpoint, other academic disciplines (computer supported collaborative working CSCW and sociology) have also recognised and explored the importance of "place as a social product, a set of understandings that come about only after spaces have been encountered by individuals and groups" (Harrison & Dourish, 2006). Equally Gieryn (2000) speaks of a sociology that will be most effective if it is informed by place, tying in three defining features, location, material form and meaningfulness. He emphasises how "place saturates social life; it is one medium (along with historical time) through which social life happens" (p. 467). Valuable as this literature is to understanding place, because of the nature of this Service Design project, which is focusing on the elderly, I have chosen to explore and theorize place from an anthropology perspective and within a phenomenological tradition, as it is concerned with "the human encounter, experience and understanding of worldly things, and with how these happenings come to be possible" (Thomas ed. Tilley et al., 2006, p. 43). Seminal work by the anthropologist Appadurai (1996, p. 178) sees locality as "primarily relational and contextual rather than as secular or spatial." Extending this explanation further he presents place as "a complex phenomenological quality constituted by a series of links between the sense of the social immediacy, the technologies of interactivity and the relativity of contexts." Appadurai openly acknowledges the work of Malinowski (1961) and his recording of the "magical ways, in which small scale societies do not and cannot take locality as a given. Instead, they seem to take it for granted

that locality is ephemeral, fragile and unless hard and regular work is undertaken to maintain its materiality, it will disappear.”

Gupta & Feguson (2001) question how understanding of locality, community and region are formed and lived and answer by suggesting that we look away from the common sense idea that such things as locality and community are simply given or natural and turn towards a focus on social and political processes of place making conceived less as a matter of ‘ideas’ than of embodied practices that shape identities and enable resistances.”

Casey’s (1997) phenomenological stance also sees local knowledge as ingrained in place stating:

“Local knowledge is at one with lived experience if it is indeed true that this knowledge is of the localities in which the knowing subject lives. To live is to live locally, and to know is first of all to know the places one is in”. (Casey, 1997, p. 18)

According to Casey: ‘Places gather, they gather things in their midst, they gather experiences, memories, even languages and thoughts.’ He reminds us to think of what it feels to return to a place you know, how place triggers memories of familiar things, which are contrasted with the new and the strange.

How design uncovers knots and weaves the threads that help us understand place.

When considering design’s role in the design of services and social innovation it is easy to overlook this weaving together of lives as lived, the everyday journeys of the ‘wayfarer’ and the role location plays in defining who the person is” (Ingold, 2007, p. 76). Design’s role can be seen as the intersection of these often fragmented pieces and experiences of daily living and turning them into stories of places, connected by visits, ephemera, and diaries. This approach was adopted by the students whose understanding of Byker flourished, and provided inspiration for their service concepts.

Age UK initially suggested focusing on three sites of service provision for the elderly in and around the Shield’s Road area of Byker: the leisure centre and its coffee shop, a community lunch club run by volunteers at the Byker Community Centre, and an Age UK lunch service at a local Church. The aim was to map and visualize the daily lives of those using such services. Through observational work it emerged that there was an intertwining of services that were not specifically designed for the elderly but were places that were particularly socially enriching and significant to them.

In this section I adopt an ethnographic stance using my own descriptions soon after visiting two of the locations:

In the Shield’s Road a popular hairdresser Pam’s, serving 38 to 40 ladies a day, many of them elderly, was a busy meeting place where the walk-in appointment scheme, no need to book in advance, created a lively atmosphere for cups of tea and a chat before a wash and blow dry. Permeating the misted-up windows the friendly warm atmosphere spills on to the street. Talking to the customers and to the staff and photographing the scene, students were told of people’s long-term relationship with the hairdresser many using it for more than 15 years (Figure 1).



Figure 1. Pam's on the Shields Road. Throughout the day a steady stream of elderly ladies queue and wait to have their hair done.

Across the road from Pam's is Blossom's Cafe. Converted from an Indian Tandoori Restaurant the owner's now run it as a busy cafe offering special pensioner lunches for £2.95 (correct at 2014) for a two course meal.

On entering, the cafe the sound of the chatter is loud. Drifting from the kitchen the smell of roasted meats, potatoes fill the seated dining area. A view into the kitchen shows a man busily preparing a range of dishes. All the tables are taken, elderly people with daughters, sons, grandchildren and friends are seated absorbing the friendly atmosphere as steaming plates of food are delivered from the kitchen and orders taken. Catering for a range of tastes, hearty meals of roast dinners, egg and bacon rolls, curry and all day breakfasts are on offer.

Moving on to the students' work, two lunch clubs were visited where the students helped out, observed and undertook co-design activities. The first lunch club is run by Age UK at St Silus Church, where the elderly people, as a result of their frailty, are picked up by the Age UK bus service and spend their morning at the centre with planned activities and lunch. A second group arrives later for the lunch and then stay on for the afternoon session. These sessions cost £10.00 each and for many of the members they find this too expensive but value it socially as it is the highlight of their week. There is a waiting list for this service and each person is only allowed to use the club once a week although there are three weekly sessions in St Silus. For some this is their main hot meal a week. The second lunch club independent of Age UK is situated one kilometre away from St Silus at the Byker Community Centre. This lunch club takes place once a week and is run by volunteers and costs £2.00 for the lunch.

Using co-design tools such as picture cards, diaries, the students gathered the snippets and trails of daily lives from both the Age UK St Silus lunch group and the Byker Community Centre lunch club. With the shopping receipts, diary records and photographs taken by the lunch club members the students were able to thread together lines of human life, "as a process that involves the passage of time" (Ingold 1993) (Figure 2a and 2b). And it is the combination of place and time that was central to the findings of the students – one cannot be understood without the other.



Figure 2a. A lunch club member at St Silus being introduced to the camera and diary to capture the highs and lows of their week. Figure 2b Shopping receipts and diaries collected from some of the lunch club members.

The students used diaries and cameras as cultural probes (Gaver et al., 1999) Figure 2b, to sensitively collect stories of memorable occasions, events that the people had visited and their concerns and hopes for the future. The lunch club members shared their earliest memories from being evacuated to the countryside during the war, their experiences and stories of living overseas and how they have knitted since childhood. In a diary entry in response to the question "What was the most interesting thing that happened to you during the week?" Margaret an 84 year old lunch club member wrote:

"I looked to the Northern Skies to see falling stars anticipated in August. Cloud cover prevented the wonder but the dark clouds strewn to the west were dramatic."

Here we see place as immersive, extending beyond terrestrial boundaries. For Ingold (2011, p. 120) "wherever there is life and habitation, the interfacial separation of substance and medium is disrupted to give mutual permeability and binding."

The two students participated in Tai-chi classes at the local leisure centre and tea dances at the Community Centre, capturing and recording the places and interweaving of activities making a week memorable and social occasions possible. A diary entry describes a week of activities:

"On Tuesday we went to St Dominic's Church Hall to a sequence dance organised by Age UK. Although we no longer dance, we meet with friends and enjoy their company and the music. On Friday we meet with friends and go to another dance."

Of particular relevance to time within place is the work of another phenomenologist Shutz (1962, p. 16). He sees life as characterized as a process of "growing older together." For him sharing a community of "space implies that a certain sector of the outer-world is equally within the reach of each partner, and contains objects of common interest and relevance. For each partner the other's body his gesture his gait"(1962, p. 16). Shutz adds that connecting place to a community of time concerns not only of outer (chronological) time, but of inner time implying that each communicating partner participates in the "on rolling of life of the other, and can grasp in a vivid present the other's thoughts as they are built up step-by-step. They may thus share one another's anticipation of the future as plans or hopes or anxieties."

At Byker Community Centre, one of the two MDes Students, captured the importance of time, its passing and place. Joyce 79 years of age, attends the Tea Dance and volunteers to support Gladys (85years of age), the Community Champion who runs the Monday lunch

club. Gladys has been involved with the Community Centre since 1965 and joined with her husband for the dance club. She fears that once she is gone no one will run the lunch club and with government cuts the threat of closure of the Centre, will mean that many of the users will have no where else to go. Joyce shares the story of two couples who met during the activities at the Centre who are now living together as elderly couples; thus the Community Centre reflects the entanglements of place and time.

Before describing the students' proposals it would be worthwhile to explain a particular service design methodology that was excluded from gathering information. Customer journey maps common to most service design projects were intentionally not applied to this project as they convey the sense of a start and finish, an 'a-to-b' destination approach. Contrastly, the students' developed place making personas in which the lives of individuals were drawn out as places of knots and lines Figure 3. Ingold (2007, p. 98) refers to how "lines, to indicate possible moves, may join locations or positions on a map and how they form a network in which every place figures as a hub."

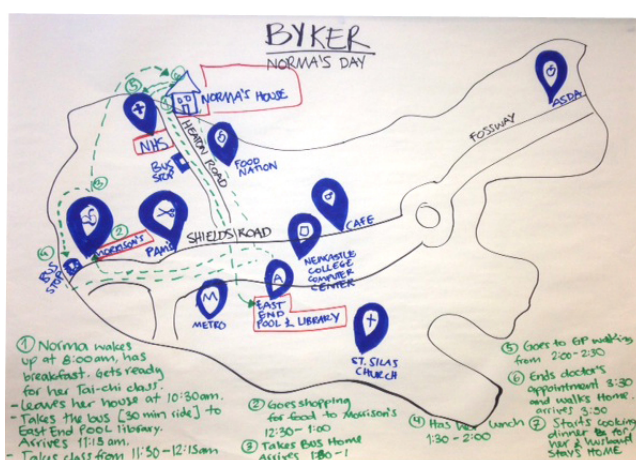


Figure 3. Place making personas. How individuals move and dwell is essential to understanding place.

Prototyping Future Visions

For Ingold in (Otto & Smith, 2013, p.145) the creativity of design is "found not in the novelty of prefigured solutions to perceived environmental problems but in the capacity of inhabitants to respond with precision to the ever-changing circumstances of their lives." Making the distinction between creativity and innovation and creativity and improvisation Ingold (2011, p. 216) views the latter as reading forward, "following the ways of the world as they unfold rather than seeking to recover a chain of connections from an end point to a starting point on a route already traveled." Critically examining the service proposal, prototyped for the Byker project (Figure 4a and 4b) by the student, what we see is how the threads and knots of daily life are made visible and drawn together, life as lived; responding to the pressures of an ageing population and the changing landscape of elderly services.

The students' service design proposal invites the lunch club members to sign-up for a paper based locally orientated Age UK reward card at either St Silus or Byker Community Centre. Personal details are collected by Age UK and the reward card is issued. This card provides discounted services at participating businesses in the area. When the card is complete it can be dropped into a lucky draw box at either St Silus or Byker Community Centre where

winners will be picked out at lunch club events. Local Age UK volunteers are also allowed to sign-up for the card. The participating businesses will sign-up on-line and their details will be used to locate them on the Age UK website and local map. In return they will receive advertising on Age UK's website and also an Age UK business partnership certificate for their premises.

Through the use of OS open data to map the participating businesses, Age UK volunteers and out-reach workers will be able to better understand the range and diversity of informal services for the elderly as well as their own within the area of Byker.



Figure 4b. A prototype of the Age UK Byker Reward Card.

The prototype deliberately adopted a low-tech approach for the card. The need for simplicity emerged from the observations and stories gathered from the lunch club members and the word of mouth experiences that loop together the places in Byker; the anxieties of an age in which technology moves so fast.

I find the 'digital' world of today very difficult, screens send me to sleep and I cannot keep with the speed of reaction on the computer..."(Lunch club member St. Silus).

In the current climate of local authority cuts this simple reward scheme would enable Age UK to connect to non-Age UK elderly services and make visible the non-formal services that are used by the elderly. The card would draw together the fragmented approach that is so common to many services and reconstitutes place "in which all life, growth and activity are contained" (Ingold, 2007, p. 96). For Age UK the use of OS mapping data to capture and visualize local services will enable their volunteers and frontline staff to better understand and emesh place through the services on offer.

In the second Service Design proposal the downloadable OS App/ Map and place specific data, was translated into an actual 3D representation of the people and places, moving them within the physical landscape of Byker, like counters on a gameboard. Kjaersgaard (in Otto & Smith, 2013) calls such material manifestations, "knowledge pieces, transitional objects facilitating the move from individual research knowledge to tangible and collective design material" (p. 58). He sees these as "liminal objects mediating between knowledge and design, present and futures, as well as between different knowledge traditions." For the student this physical 3D mapping and design ethnographic work illuminated "place not by location but by histories" (Ingold, 2007, p. 102).

As a result of this dynamic map and the design ethnographic work, the Byker Community Centre became the primary focus for one of the Service Design student's project. Established in the 1930's the Centre now runs as a charity for the local community. With the current local authority budget cuts, the council can no longer support it and the Centre faces the challenge of becoming self-sustaining by 2015. At present, the income attracted to, and generated by the Centre is £35,313 and this includes the local authority funding. Part of the

service proposal by the student is to pull the Age UK services that are dispersed across the community to the Byker Centre, increasing the usage of the Centre and creating greater visibility of Age UK activities; knitting of baby clothes to be tagged as Age UK, Byker Community Centre products, Tai Chi, dance classes and craft activities to be delivered, with some sessions opening up for inter-generational engagement to increase the usage of the Centre and to fill the gaps in their booking schedule.

Taking a phenomenological perspective regarding place and time in the design of services, and considering this case study in the light of the work of anthropological academics, raises the question of anthropology's role in the design process and how this informs the design outcomes. There are of course differences. Whilst noting the similarities between the methods and practices used in design and anthropology, that is, "of integrating observation and reflection," Otto & Smith (2013, p. 3) distinguish the aims and results of these two disciplines. The main aim of anthropology "is to produce generalizations and theories beyond the particularities of ethnographic case studies," whereas "the purpose of design is to create products, processes and services that transform reality." In summary, design is practical and transformative, entrenched in the social world, but the anthropological method of observation and data gathering, as equally embedded in lived experience as an anthropologist's ethnography, is critical for effective design outcomes.

Commensuration and Concluding Comments

In contrast to the phenomenological perspective that this paper has so far proposed as the theoretical underpinning for the design methods adopted in the Byker project, commensuration takes us back to my introductory comments regarding the reduction of transactions to economic units. Espeland & Stevens (1998) define commensuration as the "harmonisation of disparate measurements with varying units to a common metric." For them it is a process that allows the discarding of information and organizing what remains into new forms. Most significantly the authors argue how everyday experience, practical reasoning and empathic identification become an increasingly irrelevant base for judgement as context is stripped away and relationships become more abstractly represented by numbers. The authors explore commensuration as a fundamental feature of social life that is essential to how we categorise and make sense of the world. Commensuration changes the terms of what can be talked about, how we value, and how we treat what we value. Returning to the Government's recent introduction of the Public Services Transformation Network (PSTN), to support new areas into taking a Community Budget Approach, it appears on the surface to be a more joined-up approach to place. For each of the projects piloted under the government's scheme there are elements of design methods, such as the customer journey map, the citizen experience and co-designing to problem and solution finding. Ernst & Young's report (2013) recognises the financial benefits that can result from this approach whilst acknowledging that it is dependent on the role of governance and leadership, socio-economic and local factors on its implementation. When reviewing the section on health and social care, which focuses on integrating commissioning arrangements between public sector partners, it is noteworthy that the benefits are commensurated by budgetary values, which not only fail to reflect place, but also reconfigure it by the very act of drawing conclusions via budgetary values. By contrast, the values that emerged through the OS Age UK Byker project had to be felt and followed before being gathered and acted upon by the students. The question that emerges from this contrast of approach, how can Service Design, coupled with design anthropology, make visible, capture and communicate the

values that are central to place making, values that are incommensurable with models that reduce them to metrics, values that are tied-up with the fragility and ephemeral nature of place making.

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Resource Oriented Service Ideation: Integrating S-D Logic with Service Design Techniques.

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Abstract

Although the importance of Service-Dominant (S-D) logic is recently recognized among service designers, they still have barriers in applying the perspective to design practices due to the lack of appropriate tools and techniques to operationalize its conceptual strengths. To advance the integration of S-D logic into service design, this paper introduces a resource-oriented service design approach that focuses on representing and reconfiguring value co-creation. In particular, a service ideation technique called ROSI, along with two representation tools named resource integration map and resource availability table, is developed based on the concepts of resource integration (Vargo & Lusch, 2008) and value constellation (Norman & Ramirez, 1993), and the characterization of discontinuous service innovation from the perspective of S-D logic (Michel, Brown, & Gallen, 2008). This paper then shows how the introduced approach facilitates the ideation of innovative services and also discusses its future research possibilities.

KEYWORDS: S-D logic, resource integration, co-creation, discontinuous innovation

Introduction

Many of recent discussions in service design start to claim that it is no longer meaningful to distinguish products and services (Kimbell, 2011). This recognition also corresponds to the fact that many digital products these days are integrated with some software applications and communication services whereas more and more services are becoming to be supported by various goods and physical objects. When service designers do not care much the difference between products and service, however, what the word service exactly means to them? One promising answer for this question is the definition of service in Service-Dominant logic (S-D logic) that service is “applications of competences (knowledge and skills), through deeds, processes, and performances, for the benefit of another entity or the entity itself” (Vargo &

Lusch, 2008, p. 26). In the perspective of S-D logic, service in the singular is seen as an activity to participate in the customer's value creation, being distinguished from services in the plural that are regarded as a special kind of goods characterised by IHIP conditions (Zeithaml, Parasuraman, & Berry, 1985). From the viewpoint of a customer, in this framework, products and services provided by firms and other parties do not carry values but work as resources for creating values for achieving one's life goals. When creating these values in use, the customer applies one's own knowledge and skills to integrate these with resources obtained from others including the provider of products and services. Thus, a customer is always a co-creator of values and also an integrator of competences and resources. Such views of service, resources, and a customer in S-D logic are not just congruent with the user centricity of service design, but also are expected to provide service designers with a strategic perspective to improve and innovate service systems and experiences.

Some researches in service design already point at the possibility and importance of incorporating the perspective of S-D logic into service design by analyzing the conceptual commonalities between two fields (Edman, 2010; 2011), and also by shifting the role of service design from designing of services to designing for service (Kimbell, 2009; 2010; 2011). Although these researches promoted the understanding of S-D logic among service designers and succeeded to attract their attention to related marketing studies and service researches, service designers still have difficulties to apply the perspective of S-D logic to design practices. One of the barriers to such a practical application of S-D logic is the lack of technique to visualize resources and resource integrations. Moreover, it is necessary for designers for service to translate the conceptual and analytical framework of S-D logic into operational and synthetic processes. Regarding the former, Ng (2013) introduces an approach to represent a context of a customer to integrate various resources in the form of a value constellation map based on the notions of value stars and value constellation developed originally by Normann and Ramirez (1993). However, this approach has not yet gathered sufficient attention from service designers and there is some ambiguity in the definition of value constellation even among service scholars. Pertaining to the latter, Patricio, Fisk, Cunha and Constantine (2011) develops the technique of Customer Value Constellation to design service concepts for integrating these in a systematic manner with the design of service systems and encounters. Although this technique facilitates the visualization of distributed and synthetic aspects of customer value creation representing the customer's integration of service offerings from various providers, it does not incorporate the concept of resources defined in S-D logic. As a result of this, it fails to provide service designers with means to treat a customer's resources such as knowledge and skills, which are essential to realize customer-provider value co-creation. Resource oriented conceptualization of value co-creation is adopted in Michel, Brown and Gallen (2008) for developing an analytical framework of discontinuous service innovation based on the perspective of S-D logic. Their framework explains the process of service innovation as a re-configuration of resource integration between a customer and a firm and also among a number of stakeholders. While this research puts emphasis on its analytical purpose, it is expected for the framework to be further developed as an operational technique being applicable to a design project for service innovation.

To advance the application of the perspective of S-D logic to service design practice, this paper aims at exploring the possibility of a resource oriented service design approach by developing tools and a technique to integrate the notions and frameworks of S-D Logic into service design methodology. In the following chapters, two tools called resource integration map and resource availability table are introduced in turn. Whereas a resource integration

map represents a customer's context to achieve an outcome by integrating various resources, a resource availability table is used for analyzing the availability of resources required for the desirable outcome. Then a service ideation technique called ROSI, which is developed based on the framework of discontinuous innovation introduced by Michel et al. (2008), is explained with an example of its application to a service design project. Finally, this paper discusses some future research possibilities.

Resource Integration Map

Richard Normann, a Swedish service researcher, introduced the concepts of value stars (Wikstrom & Normann, 1994; Norman & Ramirez, 1994) and value constellations (Normann, 2001). Whereas value stars denote various inputs (resources) into a customer, a value constellation is understood as a network of values in use realized by the exchange and integration of resources among a number of actors. Although these concepts influence significantly the development of S-D logic, they do not have clear definitions thus limiting their practical applications. Moreover, understanding of value in use sometimes requires complex phenomenological interpretation (Vargo & Lusch, 2008) being difficult to be depicted in a visual format. Instead of looking at a value itself, it is more useful for service designers to put emphasis on resources and give them explicit representations to promote a clear understanding of value co-creation and also a better ideation of services.

It is of importance to note that S-D logic views resources as anything an actor can draw on for support, where an actor means a firm, customer, or other stakeholder (Vargo & Lusch, 2004). Resources can be internal to actors and under their control or external to actors but capable of being drawn on for support. S-D logic also distinguishes operand resources and operant resources (Constantin & Lusch, 1994; Vargo & Lusch, 2004). Operand resources are typically tangible resources such as natural resources that require some action on them to create value. Operant resources are typically intangible resources such as knowledge and skills that are capable of acting on operand resources to create value. In the framework of S-D logic, actors, including customers, are seen as resource integrators who integrate operand and operant resources made available to them by various providers, with their own personal resources to co-create value. As is expressed in the ninth foundational premise (FP9) of S-D logic, all social and economic actors are resource integrators. It is also important to recognize that any resource does not exist by itself but becomes a resource in relation to other resources depending on the customer's context of their use (Vargo & Lusch, 2008).

A *resource integration map* is introduced as a visual representation of the customer's resource integration, also known as value stars. A resource integration map is drawn for an actual or possible context in which a customer achieves a certain outcome integrating some internal and external resources. Here the customer can be an individual, a group of individuals, or an organization. The idea of a resource integration map is inspired by the representation of a value constellation map and the conceptualization of a customer's context that are elaborated by Ng (2013). In particular, the composition of a resource integration map follows its formalization of the customer's context consisting of customer's outcome, skills, practices, and provider's offerings (Ng 2013). However, while a value constellation map does not depict explicitly the roles of customer's outcome and skills being essential for value co-creation, these are included in a representation of resource integration map. Moreover, a resource integration map does not refer to service providers, because a resource integration

map is generated for exploring the possibilities of discontinuous innovation that may require new or a new set of stakeholders.

To make a resource integration map, designers can use information collected from customer research with paying special attention to resources obtained and used by the customer. A resource integration map consists of the following inter-related five components (Figure1).

1) Customer

The first component of a resource integration map is a customer (or a persona of the customer). It includes some basic information about the customer persona such as name, gender, age, lifestyle and also background knowledge related to his/her outcome to achieve.

2) Outcome

Customer's outcome is a goal or objective (or a set of goals and objectives) the customer wants to achieve by acting on the resources that he or she owns or acquired from other stakeholders. A customer's outcome can be understood as a concept being similar to a persona's jobs-to-be-done (Chrstitensen & Raynor, 2003).

3) Activities

Activities are a set of actions or behaviors of a customer utilizing resources for achieving ones outcome.

4) Competences

Competences are a customer's own knowledge and skills (i.e., operant resources) needed for acting on ones acquired resources effectively to accomplish a desired outcome.

5) Resources (outsourced resources)

Resources are objects, performances, knowledge and information that a customer outsources from other stakeholders to utilize for realizing ones outcome.

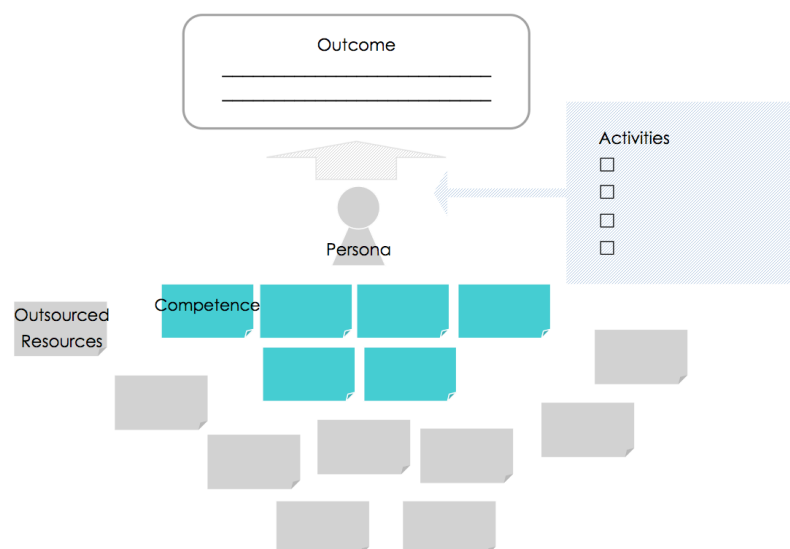


Figure 1: A schematic representation of a resource integration map

Resource Availability Table

The strength of resource integration maps becomes obvious when they are applied to ideate new services. They support the process of ideating new services with paying attention to the external and internal resources required for a target customer to achieve a desired outcome. For example, let us think about a design project whose goal is to generate a new service targeting a number of average routine customers based on research findings on some advanced lead user behaviours. Designers in this project first produce two resource integration maps, one for the lead user and the other for a typical routine user depicting for each the five components of the map. Then the designers compare those two maps to find differences in the resources used by these two kinds of users. To do such an analysis in a structured manner, we developed a tool named a *resource availability table*. A resource availability table is a matrix of 2 rows and 2 columns (Table 1). The rows distinguish the user's competences (operant resources) such as knowledge and skills (the upper) from other outsourced resources (the lower) while the columns distinguish available resources (the left) from unavailable resources (the right). The upper left box labelled as **I** in Table 1 is for filling in the competences that both the lead user and the target routine user developed well. The upper right box labeled as **II** in Table 1 is for filling in the competences that the lead user developed well while the routine user lacks. The lower left box labeled as **III** in Table 1 is the entry for the resources that are easy to obtain both for the lead and routine users whereas the lower right box labeled as **IV** in Table 1 is the entry for the resources that are difficult to obtain for the routine user. A resource availability table organized as such thus facilitates designers to find opportunities for new services by orienting their attention to resources that are required to achieve a desirable outcome but not easily obtained by the targeted user. Indeed, an appropriate size of a resource availability table put on a wall works as an effective platform for brainstorming in the ideation stage of service design.

	Developed / Easy to obtain	Not developed / Difficult to obtain
Competences	I	II
Resources	III	IV

Table1: A resource availability table

Discontinuous Service Innovation and the ROSI Technique

Michel, Brown & Gallen (2008) argue that discontinuous innovation according to S-D logic perspective can arise from changes in the firm's value creation. According to the authors, the firm's value creation is changed in three possible categories:

- 1) knowledge is embedded in objects to be transferred from the firm to the customers,
- 2) resources are integrated or divided within the firm and in relation to customers,

3) knowledge and resources are distributed among a number of parties involved in the value-co-creation.

Although this framework of discontinuous innovation was developed mainly for analytical purposes, it can be used as a guideline for the ideation of new services or service innovation in a service design project. To realize such a possibility, we introduce an ideation technique called *Resource-Oriented Service Ideation* (ROSI). ROSI integrates the framework developed by Michel et al. (2008) with a resource availability table such that the three possible categories of changes in the firm's value creation are applied to orient the design opportunities found in the resource availability table. Regarding the first innovation category mentioned above, knowledge is also transferred through education and training in addition to the transfer by objects such as manufactured products (Michel et al., 2008). Therefore, a discontinuous innovation based on some new education or training service is included in the first category of the ROSI technique.

An actual ideation session using ROSI technique proceeds by asking a question that relates one of the three possible categories of discontinuous innovation with the competences or resources listed in an appropriate box of the resource availability table. For example, regarding some undeveloped competence of a targeted user listed in the box **II** in Table 1, designers may ask how the firm is able to empower the user either by producing a new product embedded with the lacking competence or by providing the user with a training opportunity to develop ones competence (Category 1). Also when the designers focus on some resources listed in the box **III** or **IV** in Table 1, they may ask if it is possible for the firm to integrate more of those resources to relieve the targeted user of integrating those by themselves (Category 2). On the contrary, designers may also think of the possibility for the firm to let the user take more active and engaging role in integrating his/her developed competences as well as additional resources listed in the box **I** and the box **IV** respectively (Category 2). The application of the third category of discontinuous innovation in the ROSI technique is explained in the next chapter.

Applying ROSI to a Design Project

Let us now think of a design project for a food delivery company that has a competitive strength in making healthy recipes by establishing a network of doctors, nutritionists and cooks over the world. The goal of this project is to generate a new innovative service for the company to support people's healthy dietary lifestyle using the ROSI technique. Suppose the design team has chosen the strategy to develop ideas for the new service based on a research on some skilled person (a lead user persona) who developed knowledge about health in addition to techniques for cooking healthy foods. This skilled person also enjoys studying the relationship between health and food to create ones own recipes based on the knowledge. The person is also always looking forward to have a physical checkup to evaluate his/her daily effort to maintain and improve own health. The new service is planned to target at an average unskilled person (a routine user persona) who does not have much knowledge about healthy foods feeling difficulty to maintain ones healthy dietary life. Analyzing the research results on the skilled and the unskilled person, the design team generates resource integration maps for these personas and then produces a resource availability table (Table 2).

	Developed / Easy to obtain	Not developed / Difficult to obtain
Competences		<div>Effort to improve ones health</div> <div>Concern about disease prevention</div> <div>Skills to arrange recipes to be more nutritious</div> <div>Curiosity to learn about body and and nutrition</div> <div>Persistence in health maintenance</div> <div>Spirit of challenge to try new health management methods</div>
Resources	<div>Fresh foods and ingredients to improve health</div> <div>Opportunity of yearly health check</div> <div>Inexpensive food to continue healthy diet</div> <div>Home health-check devices</div>	<div>Frequent health check to evaluate the progress in health condition</div> <div>Opinion of an expert to evaluate health condition</div> <div>Episodes of illness of others to keep health consciousness</div> <div>Knowledge to learn about body and health</div> <div>News and trends in health management</div> <div>Recommends from others to try healthy foods</div>

Table 2: An example resource availability table

Using this resource availability table, the design team now starts an ideation session using the ROSI technique. First, they look at some required competence that the targeted persona lacks such as knowledge on healthy nutrition, strength to sustain healthy lifestyle, and an ability to customize a recipe to meet ones health condition. The team then generates some ideas for a new product or a new training service for empowering the targeted persona. For example, they may come up with an idea of a new “healthy dietary gym” that is a training facility for the targeted personas to exercise healthy cooking and eating under the supervision of nutritionists and cooks.

Secondly, the design team pays attention to the resources hardly obtained by the targeted persona, which include an opportunity to examine ones health condition in a causal manner without going to a hospital and also a chance to have some advices on nutritious diet based on the result of health examination. Such an investigation promotes the team to develop an additional idea that the visitors to the healthy dietary gym are free to take self-service physical examinations to receive, based on the examinations, some quick advices from a doctor as well as appropriate recipes from a nutritionist.

Thirdly, the team broadens its perspective of ideation resorting to the third category of discontinuous innovation: knowledge and resources are distributed among a number of parties involved in the value-co-creation. To apply the category to the resource availability table, the team needs to ask what other resources could be added in the table to further empower or enrich the experience of the targeted user, and also ask who could provide such resources for what benefit. For example, the users of the healthy dietary gym may want some facilities for physical exercises in addition to those for learning healthy cooking. Since the healthy dietary gym is supposed to have a large number of customers who are interested in their health conditions and also may have developed a rich database of their personal health records, it is possible for the gym to collaborate with a sports gym using those as resources for establishing a joint service. For example, the customers of this joint service would be provided with some integrated fitness and dietary programs.

Figure 2 shows a possible diagram for representing the three ideas mentioned above as an integrated service system.

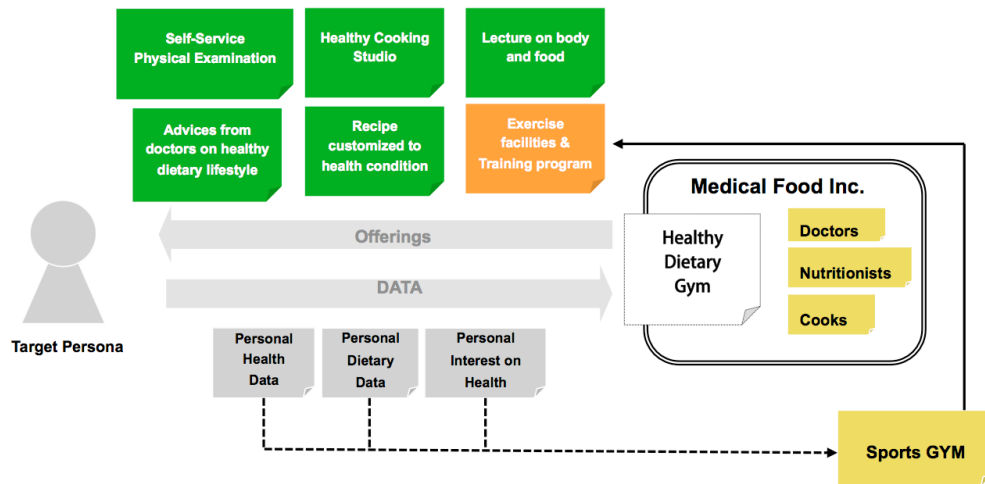


Figure 2: A service system map

Discussion

We introduced a new ideation technique called ROSI as well as two representation tools called a resource integration map and a resource availability table by integrating resource-oriented perspectives of S-D logic into service design methodology. In particular, ROSI provides service designers with a strategic ideation technique for innovative services or discontinuous service innovation, which has been missing so far in the menu of popular service design tools. Besides such a practical benefit, the resource oriented service design approach promotes among service designers further understanding of the notion of co-creation of values that is essential for S-D logic. Although some researchers clarify the difference between co-design often practiced in a service design project and co-creation conceptualized in S-D logic (Edman, 2011; Kimbell, 2009), these are sometimes misunderstood or confused in service design discourse. Such a misunderstanding or confusion becomes a conceptual barrier to the productive exchanging of knowledge and ideas between marketing studies and service design. The ROSI technique succeeds in helping designers for services to visualize, understand, and explore the possible constellations of resource integration from the perspective of a customer who creates values in collaboration with various resource providers. Such a visualization and operationalization of the concept of value co-creation made possible by the ROSI technique has an advantage over existing methods and tools to represent value constellations for integrating S-D logic into service design. Moreover, for marketing research, the technique of ROSI encourages the applications of the conceptual framework of S-D logic in design contexts supporting its practical strength and further conceptual development.

There are several topics to be dealt with in the future research for further development of the resource oriented design approach. First, while the resource availability table was generated based on the research on a lead user in the example explained in this paper, it is not always possible to find an appropriate lead user whose behavior shows a desirable outcome and resources for the targeted user of a design project. It is therefore necessary to

develop a technique or apply some other method to define a desirable outcome and required resources for the targeted customer besides the lead user method. Secondly, the current ROSI technique considers only the dimension of the change in firm's value creation for the ideation of services. It could also incorporate the dimension of change in the customer's role, which is explained along with the firm's dimension in Michel et al. (2008). Moreover, regarding the firm's dimension, we could ask if there is any other category of change in the firm's value creation for a discontinuous innovation in addition to the three ways of change introduced in Michel et al. (2008). Finally, it is worth studying the relationship and also some possible integration between the resource-oriented approach and other popular service design techniques such as customer journey mapping, service blueprinting, and stakeholder mapping. One of such possibilities is to include the explicit description of competences and resources in customer journey maps and stakeholder maps. The systematic integration of value constellation and service blueprinting developed as Multilevel Service Design method by Patricio et al. (2011) seems to offer a good clue as to explore in the direction of future research.

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Fragile liaison - Opportunities and challenges in cross-organisational service networks

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Abstract

The aim of this paper is to identify what kind of needs and challenges exist in cross-organisational and cross-sector collaboration in service networks and how service design can contribute to tackle the challenges. The paper interrogates a project called ‘Customer-centred service networks in L area’, initiated by the City. The project aimed to build more holistic service networks, involving private and third sector organisations, and to embed customer-centeredness in the networks. This experimental project revealed various kinds of tensions from the participating organisations and the employees in building such networks. We conducted 16 interviews with participants of the project to interrogate challenges and opportunities. The findings point out that in addition to focusing on customer centeredness, a shift to emphasize collaboration between different actors is crucial in service design.

KEYWORDS: Service network, organisational change, design for services, collaboration, senior services

Introduction

Public organisations have recognized that isolated structure for developing and operating public services is no longer viable in a current society. They seek alternative approaches that can respond more effectively to the changing needs of society, and improve service qualities and cost-efficiency. One of the approaches is to collaborate more with other organisations from private and third sector, such as companies and NGOs. In other words, public organisations aim to build cross-sector service networks and collaborative models. Public organisations are more reliant on outsourcing, contracting out service elements, and there is a growing fragmentation of service delivery (Ostrom et al., 2010). Customers thus encounter multiple providers when trying to achieve their service goals. The networks in which these various service providers and actors interact with each other are very complex and

heterogeneous. In a case of social and healthcare customers, the service network would include not only physical care providers but also cultural services or transportation services.

In this landscape, many of current literatures on service networks from service marketing and service design draw an attention on customers' role in building their own networks (e.g. Lusch & Vargo, 2006; Ostrom et al., 2010; Heinonen et al., 2013; Tax et al., 2013; Manzini, 2011; Junginger & Sangiorgi, 2009). For example, Lusch & Vargo (2006) emphasize to see a customer as a resource integrator, assembling and coordinating interrelated services to achieve a given objective. Tax et al. (2013) stressed that customers are no longer considered as isolated entities but are increasingly viewed in the context of their own personal networks. They introduce a concept of the *customer-designated service delivery network*, defined as two or more organisations that, in the eyes of the customer, are responsible for the provision of a connected, overall service (e.g. Tax et al., 2013). Similarly, Heinonen et al. (2013) suggest the shift of focus from the organisation's service processes involving the customer, to the customer's multi-contextual value formation, involving the organisation.

Having a shared understanding among various organisations and service providers is thus more crucial than ever. It is increasingly important to understand what roles different actors play in customer-defined service networks and based on that understanding, build a collaborative model that supports them. Defining the roles and relationships of different actors in advance is, however, very challenging. The multiple actors in service networks have different perspectives and tensions. In addition, their relationships change over time. Our aim in this paper is to reveal these challenges when building customer-centred networks through cross-organisational and cross-sector collaboration. We do this by analysing a project called 'Customer-centred service network in L area,' where service design approaches were applied. Making sense of the complexity of this service network was far from simple and tensions were identified across people and organisations. In this paper, we aim to highlight these challenges based on interviews of the project participants and discuss what it means for a new role of design in service networks.

Emerging Roles of Design in Service Networks

Design has been increasingly recognized as a potential discipline to achieve customer-centricity of service. The design tools for integrating customers' experiences have helped the service development to be more relevant to customers' life and organisations' needs. Recently the considerations of design for services expand from end-users' experiences towards networks and systems, envisioning new relationships of multiple actors and creating a collaborative platform (e.g. Kimbell, 2010; Junginger & Sangiorgi, 2009; Manzini, 2011). This paradigm shift has come with increasing potentials of co-design for transformative effects on organisations and communities (Bate & Robert, 2007; Sangiorgi, 2011; Meroni, 2007; Thackara, 2007). Recently Kimbell (2010, p. 51) pointed out that "understanding value and the nature of relations between people and other people, between people and things, between people and organisations, and between organisations of different kinds, are now understood to be central to designing services."

As a response to these emerging needs, design tools have been modified and applied for the network context, for tangibilizing complexities in networks, identifying multiple actors' relationships and facilitating their collaboration. For example, empathic design tools were originally to support designers' understanding of user experiences, but recently they have been applied to facilitate a mutual understanding of multiple actors in the network

(Mattelmäki et al., 2014). Tools for service visualisation, such as service blueprints, stakeholder maps or customer journeys are used in co-design workshops where multiple actors from different organisations gather, to help them express their perspectives and gain a mutual understanding of each other (see e.g. Kronqvist et al., 2012; Hakio & Mattelmäki, 2011). This kind of collaborative activities of tangible mapping of service networks has been influenced by generative tools and co-design (see e.g. Sanders & Stappers, 2012; Vaajakallio, 2012; Eriksen, 2012; Buur et al., 2013; Halse et al., 2010). Different from research tools in human research science or marketing, co-design tools and activities are built on designers' genuine practices that are visual, empathic and generative (Hanington, 2003; Lee, 2013).

Despite these potentials, challenges have been also reported when applying design for public organizations and networks. Public organisations are not used to experimental, generative approaches of design, and isolated and hierarchical culture of the organisations hinders collaborative activities (e.g. Bason, 2010; Vaajakallio et al., 2013).

Case: Cross-Organisational Service Networks with a Municipality

The 'Customer-Centred Service Network at L area' project (L project: 2011– 2013) aimed at creating service networks of public, private and third sector actors in one neighbourhood in Helsinki, in order to support local elderly customers living at home. The development had also other goals, namely searching for new kinds of practices that would allow personalizing services based on customers' own interests and needs, and piloting new practices for service management and personal budgeting.

Developing and piloting the network and the new practices was done through multiple methods. The project plan emphasized applications of service design in different stages of the project with the support of consultancy companies and university design researchers. Design tools were applied to visualize the complexity (e.g. customer journeys), support empathic understanding of customers' experiences (e.g. design probes, storytelling, and personas), generate ideas together, and prototype new practices (e.g. co-design tools).

In Spring 2012 when L project proceeded its halfway, interviews on the project participants were conducted to interrogate what changes the project had brought by then. One of the design researchers from the project conducted the semi-structured interviews on 16 participants from different organisations: twelve employees from public sector (e.g. social services department, health care department, City's central administration), two persons from private sector, and two persons from the third sector, such as local church or NGO. The selection of the interviewees was based on snowball sampling.

The first part of the interview questions concerned with different phases of the on-going project; for example, what had been successful elements so far, what could have been done

differently and so on. The second part of the questions was about interviewees' perceptions on service design; for example, how they described it, what was its role, and what had been experienced valuable about it. The interview data was transcribed and the analysis was done following the analytic induction approach (Seale, 1999). In the interviews, the participants often addressed tensions and complex relationships between people, organisations and sub-organisational teams. Thus the main foci of analysis were on the needs for networking perceived by the participants and the barriers in the creation and development of cross-organisational service networks. The interview quotes presented in this paper were translated in English by the authors. In addition to the interview data, we also used other materials from L project to support the analysis, such as earlier publications and reports produced during the project (e.g. Hakio, 2012; Elo, 2012; Nykänen, 2013; City of Helsinki Department of Social Services and Health Care, 2013).

In following sections, we will first illustrate complexities of '*service jungle*', as one of the interviewees characterized the service network. How individual actors, including end-users and professionals, struggle to navigate this jungle and try to form their own networks can highlight the needs of cross-organisational collaboration in service networks. We will then discuss barriers that hinder the collaboration. Finally we discuss what could be fruitful opportunities for design in achieving balanced collaboration in the service network.

Needs and Barriers of Networking and Collaboration

Limitations of organisation-driven, siloed way of working: The interview findings revealed that the public sector organisations do realize that their organisation-driven, siloed way of providing services results in these complex service ensembles. Especially elderly customers often lack resources to assemble and coordinate interrelated services by themselves.

"... the care families, when the services are customised to them, it is cheaper than the municipal service that is so fragmented. Care families are in quite a service jungle to cope with....perhaps the most applied is a kind of a mindmap picture in which all the connections are depicted to what are all the instances the care family should be messing with, or they should be in contact with. It is such an impossible network that only few can tackle with...." (an employee from the public sector)

Not only the customers, but the public sector employees also dealt with the similar complexity and unclearness. Each unit within the public sector has its own care plan for customers and it is common that employees from one unit do not have knowledge of what other services are provided for a specific customer from other units. Not only within the public sector, but there is also lack of information about what kinds of services are offered, and can be offered, to the customers by other organizations, besides the public ones. The public sector is in the critical needs of gaining such information and providing it for the customers. In fact, existing legislation and regulations hinder them from possibilities of recommending services from the private sector or sharing the information about their customers to other network actors. For example, if the public sector employee recommends some particular service providers for customers, they need to mention all other alternatives.

For healthcare and social services for the elderly people, identifying individual customer's needs and providing the personalized support is increasingly important. The interviewees explained that the customers are changing and this requires the service to change as well. Helping elderly people to cope with the complex service network and personalising their service would reduce the costs and result in more effective service (e.g. see Eloniemi-Sulkava

et al., 2006). The personalized support can also prolong the time that the elderly people can live in their homes. A third sector representative shared stories of elderly people who decided to stay at home after getting right kind of support at their home;

“...when safety and enough of services for a care family, or a lonely senior, they can stay at home. This is why it is extremely important to build the network starting from the needs to of the care family.” (an employee from the third sector)

Despite these needs, the public sector employees explained in the interviews that they now lack tools for identifying individual customers' needs and sharing such information with other related organizations in the networks.

Hierarchical structure and tensions in the cross-sector network: The cross-sector collaboration was one of the driving factors in building the project strategies. The interviews, however, revealed that the project development was seen as municipality-, and single organization-driven by other organisations. According to interviews, for example, the entrepreneurs were not included in the project group or in the project steering group. In addition, the interviewees said that there were only few meetings or workshops, if any, where people from all different sectors were present. These findings imply that even in this L project aiming for cross-organisational collaboration, the network actors were working separately to achieve goals that have been identified for them. This finding is also supported by Nykänen & Jyrämä's report on the project (2013).

One reason for this was probably the way the project was prepared and organised. The preparation was led by one of the public organisations and the same organisation was coordinating the funding and the participant involvement. Some of the stakeholders stated that the roles and responsibilities during the project were not clear and that the schedule was too tight and predefined. In their opinion there was too little freedom that is necessary for the creative development process and the network to evolve.

The private and third sector organisations' interviewees also pointed that the public sector is in need of new mindsets and tools for understanding other collaborators and exploring future possibilities together with them. The traditional hierarchical structure was experienced for example in the ways people were invited to the meetings according to the hierarchical top-down procedures. This lead for example to situations where people who were in position to make decisions didn't always have understanding or interest on the subject matter or time to participate and the employees enthusiastic on the subject matter (whose work the development would have influenced most) didn't have authorisation to participate or make needed decisions. When the project particularly aimed at collaboration between the partners, people posed questions why this collaboration was not really enabled as pointed out by one of the interviewees.

“However, you can observe people having a lot of ideas and willingness to be involved, or that it is just the right person to be part of this project, just the right person from the neighbourhood to do this thing.

The question is why this kind of a project was started, why is it expected that the departments collaborate if is not enabled?" (an employee from the public sector)

In the interviews, the private sector representatives believed that the public sector viewed the private sector as only profit-driven. This could be identified also in the public sector employees' interviews that dealt with prejudiced about the motives of the private sector. In their opinion, the competition affected the objectives of private organisations and sometimes hindered the collaboration. On the other hand, private sector representatives had doubts on the current system of public sectors' procurement process. They didn't see meaningful to be compared only by the price per hour and even suggested that public sector's way of calculating the costs of their own services can be misleading. The interviewed private and third sector organisations were small and medium sized and they had only scarce resources for development purposes. For them it was especially important to be able to see and evaluate the potential benefits of the participation to the development project and the network in advance.

The private organisations pointed out that there is a need for a huge cultural change that would enable cross-sector collaboration. However, the momentum for change was very slow. It was observed that especially public sector employees tended to cling to their accustomed ways of working in everyday practices, although they realized the need of change. They sometimes even hide themselves behind '*self-created, imaginary rules*'.

"I have felt that people would like to do more but they face some self-created guideline or regulation that prohibits doing it. People would like to be involved but then you face that we cannot do this or this is not our basic objective. Or, that there are no resources." (an employee from the public sector)

Lack of support for situated network building and management. The individual employees, whether from the public sector, private companies or third sector organisations, needed to build their own networks for alternative service offerings, based on their personal connections. The interview findings showed contradicting views to this kind of formation of service networks based on person-to-person interactions, rather than the administrative process. One example is related to an experimental sub-project as part of the L project. The sub-project aimed to pilot a care management system that provided alternative solutions for customers to choose services. A care manager was hired for the pilot and during the project she created a network that encompassed various actors from different sectors. However, after the project, it appeared that this network built by the care manager was at the end the main body of the service network in the L neighbourhood. After the pilot period had ended and the care manager had left from the project, the network she had built was then in risk of vanishing; there was no mature system or collaborative model, which can support this network to sustain and evolve (see also Nykänen, 2013; Nykänen & Jyrämä, 2013).

In addition, from the private sector perspectives, the care management involved an issue of 'fairness'.

"Care manager... She is in charge of a lot of things... It influences.. one cannot claim that the situation was completely objective...the client selects from what she is told about. ...this is my impression, that she would do quite objectively and I hope that it succeeds." (an employee from the private sector)

Not surprisingly, the entrepreneurs wanted to build their own personal networks with the public sector employees working at the neighbourhood. The entrepreneurs suspected that the public sector employees sometimes recommended particular private service providers based on their personal networks, although it was against the regulations.

The L project envisioned the potentials of service networks based on human relationships, although there were issues of fairness and legislation to be solved. Building the service network and operation processes through human relationships can make the service customer-centred, humane and effective. The important question was then how to support the formation of personal networks so that it can give equal opportunities to different actors and be developed sustainably.

Opportunities of Design for Balanced, Customer-Centred Service Network

As the interview findings show, the challenges that the participants encountered during the project included 1) how to find out what the customers really need and 2) how to enhance the network development to fulfil those personal needs and 3) how to support the network and collaboration to evolve. The service design approaches were applied in the L project to deal with these challenges, which was an experiment for both the service organizations and the design researchers. In followings, we will describe our observations on what the design tools have enabled for the L project and what still remains as challenges.

Finding out and sharing what the customers really need: Frontline employees working with the customers face the everyday life of the elderly customers' daily. Because of the hierarchical structure of the public sector organisations, it required substantial efforts to share these insights with people in a managerial level. In the beginning of the L project this understanding was brought all the way to the management level by various means. In the beginning of the project videos based on customer interviews were used as a tool to 'wake up' the decision makers.

"...service designer who went to customers' homes and created the video, it was terribly revealing and important for the whole project. It woke you up that even it was known in theory in what kind of service jungle clients are trying to cope, it really woke up to." (an employee from the public sector)

Later in the project design probes were also used to enable customers to reflect their everyday life and service needs. The probes kit was designed and prototyped by a design student (Elo, 2012) in collaboration with other network actors and customers. It provided a tool for dialogues between the family and service providers and brought new kind of understanding even from customers familiar to frontline employees.

"In these probes kits there has been issues from familiar customers that I did not know before, even though I have worked with them. It supports to understand better the customers' situation. During a home visit the background of the customer might be promptly touched upon and the time before the family care, but they are not really gone into. When social department offers services that the customer does not want to have, a device like the probes can help in understanding the reasons why. More customer understanding." (an employee from the public sector)

The interviewees saw the probes not only as an excellent tool to inform the design process but also as a feasible way to build actual service ensembles for specific customers. In addition, it was recognised that the probes shifted the focus from the traditional approach of concentrating on the problems of the customers' everyday life to positive things that could be supported by the services provided by the network. The senior citizens' needs often support to assemble and coordinate the interrelated services. Thus, probes were seen as a tool to empower customers to be part of the service personalisation.

Enhancing the network development through co-design and visualisation: Interviewees' comments on the role of service design suggest that co-design workshops and visualisations have been valuable in bringing people together to discuss, map and rethink, producing synergies in the networks. Designers' ability to visualise the user perspective and complex ensembles was seen important for changing the perspective. In the beginning of the project, customers' personal service networks were mapped and visualised through customer interviews. It is noteworthy that from customers' perspective, the service networks were not limited to the social and health care services but the service needs expand to other areas of the everyday life, such as transportation and culture services. Thus the design tools helped to identify who are the key people or organisations for the service network from customers' perspective. Visualisations of service journeys were appreciated especially for bringing a new humane perspective, compared to written documents and flock charts used traditionally. They open up entities and their connections and create a shared platform for discussions on the future possibilities. They can be applied as open-ended tools that allow negotiations between different parties (Mattelmäki et al., 2011).

Workshops were also seen as an informal platform for understanding each other's perspective, realizing conflicts and similarities. Design's role was to enable the stakeholders to find the common language and objectives through a human-centred lens, as well as enable the challenges and solutions to co-evolve.

"The workshop, what was talked about, I feel that the right things were discussed and quite special was that in group work the same setting that this whole project is about was, displayed in a miniature size. People talk different languages, they depict the context and the field in different ways... But terribly interesting because it represents co-creation that takes place in borders of different practices."
(an employee from the private sector)

Supporting the evolution of the network and collaboration through experiments: The L project was a pilot in itself as it was one of the first projects aiming at creating a cross-sector service network in the municipality. During the project two service concepts were piloted; the care management system that aimed to help customers navigate through the service jungle and personal budgeting that provided a new kind of financial assistance to enable more personalised service through cross-sector collaboration.

This kind of pilot projects was seen as an important platform for prototyping new perspectives and new ways of working as well as designing across organisational boundaries, building trust and creating prerequisites for the future collaboration. According to the interviewees these models had been piloted successfully before for example in UK. In the L project, however, the pilots revealed the limitations of Finnish legislation and the immature and fragile service networks. This kind of experiments is needed for fragile liaison to be nurtured. This project was just a start for the local service network development, which cannot be done in a short period of time. It is important to understand that a main role of design is to provide a platform and tools for the collaboration to emerge and evolve even after the project.

Discussion and Conclusions

The preliminary analysis of the needs and barriers for the networking indicates that in addition to customer-centeredness, inter-organisational collaboration between different service network actors is crucial in service design. In general, the project was appreciated that it was able to strengthen customers' perspective in the service development, enhancing their awareness of freedom of choice and control of their own life. The weakness was the fact that the approaches of 'service design' and 'cross-organizational collaboration' were also considered as event-like experiments, rather than as practices to be implemented to everyday operations of the organisations. The organizations need supportive tools and resources for nurturing the new approaches. In addition, the decision-making has to change from top-down to more volunteer direction driven by real excitement of developing something meaningful. It is also important to understand who are involved in the network development and what kind of attitude is needed. The collaboration should involve all levels at the hierarchy from customer interface employees to the middle management and the upper management as well as the people actually implementing the designed touchpoints from web designers to interior architects. The change requires time and space, resources to be implemented.

The study discussed in this paper is part of an attempt to study how design approaches can be embedded and support the complex setting of cross-organisational networks. This paper presented a preliminary analysis of experiences gathered during the two-year development project aiming at formation of local cross-organisational service networks. The development project led the participating organisations and design researchers to realize their different viewpoints and structural challenges. As promoted in co-design practices, especially for organisational changes, making conflicts explicit within collaboration units is the springboard for achieving a shared understanding and framing solutions (e.g. see Buur & Larsen 2010). The development project was just a start for the processes of networking and collaboration. In the future, the questions we aim to study include how to foster human centred perspective and empathy in complex network and how to enable organisations to design co-creation processes to better serve the customers, as well as themselves.

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Design for cross-sectorial service innovation – provisional framework

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Abstract

Design and service innovation have received increasing attention in recent years. However, there is no agreed view on what the relation entails. Both management and design research literature acknowledge the importance of design for service innovation. However, most of the research fails to bridge the gap between differing notions of design thinking and emerging design fields.

The lack of research linking the two discourses calls for investigations that provide clarity and mutual understanding. This paper seeks to make a step towards a common ground by presenting a provisional framework of design for cross-sectorial service innovation. Emphasis is given to common terminology and characteristics. Focusing on the design discourse, this paper discusses the relationship between design and service innovation as a set of certain approaches, experiences and minds-set. The study is based on a review of key texts and indications from a set of interviews. This paper constitutes a work-in-progress report on research for a doctoral project.

KEYWORDS: service innovation, facilitation, design

Introduction

Design research projects more and more include working in service innovation projects: Instead of developing services *for* companies or organisations, designers often develop them together *with* the organisations collaboratively. This includes the involvement of both public and private partners. Interviews with project partners from past service innovation workshops caused me to ask what kind of ‘usefulness’ we produce in this case. If design is not about designing physical objects but about facilitating a range of activities, what makes it beneficial? Looking into the research literature we can state that

the concept of Design for Services innovation has received increasing attention in the last few years – especially in design discourse. Here activities are mostly set in the context of cross-sectorial innovation – between the private and public sectors. However, despite the considerable activities in research and practice in this field there seems to be no agreement on what is meant by design for cross-sectorial service innovation. Depending on the field (i.e. community work or collaboration with a municipality) research groups have introduced differing terminologies for their activities (i.e. facilitating, empower-or, catalyst). What the concepts have in common is the vision of design expanding into new arenas, mostly set in-between sectors, such as reconfiguring public services or developing cross-sectorial business strategies. These projects go beyond the realm of traditional design whereby it is linked closely with physical objects. (e.g. Cooper, Junginger & Lockwood 2009; Manzini, 2008). But there is no agreed view on what design for cross-sectorial service innovation means. However cross-sectorial innovation becomes increasingly important. In order to be able to find answers to today's pressing challenges (i.e. health, energy, food) collaboration between the public and the private is required:

The classic tools of government policy on the one hand, and market solutions on the other, have proved grossly inadequate. The market, by itself, lacks the incentives and appropriate models to solve many of these issues. (Murray et. Al., 2010, p. 4).

Murray addresses the increased importance of cross-sectorial innovation in general. But finding new ways to connect different sectors is especially important in service innovation, which has become the biggest industry in developed countries. Firstly the share of service accounts in GDP account for 69¹ in Germany. Additionally the innovation Murray is referring to more often than not consists of the development of new services – not technological innovations.

But let us first look at the term 'cross-sectorial service innovation' itself. Service Innovation can be defined as the generating and implementation of new services. To innovate between sectors means to involve organisations from both the public and the private sectors. Thus it involves organisations with multiple traditions, power structures and views on innovation processes. However the border between public and private is increasingly blurred. While 'public' and 'private' have been clear concepts for differing business models in the past, it can be more difficult to state the difference in today's market: public organisations are more and more including forms of financing through private sources, like foundations or collaborations with private companies (i.e. active in the field of social service). Private organisations on the other hand, increasingly provide services traditionally considered to be part of the public sector (like health, mobility or communication). For the purposes of this paper, private is defined as: at least partly aiming for profit and including structures of a private company (functional structures and CEO or executive board with president). Public is defined as only partly aiming for profit and not containing departmental structures such as a main organisational structure. Cross-sectorial innovation would include both types of organisations.

¹ Statista 2014, de.statista.com, accessed 20.1.2014

Design and service innovation – two streams of literature

Looking into the research literature there seems to be two streams of literature relating to design and service innovation: one in management and one in design. The former defines design as a ‘powerful, effective and broadly accessible’ approach for innovation (Brown, 2009). The latter points to a broader academic discussion that reflects upon ‘how designers think as they work’. The management discourse is a more recent one, and focuses on the need to improve managers’ Design Thinking skills for better business success (Johansson & Woodilla 2010, cited in Hassi & Laakso, 2013). Hassi and Laakso came up with a comprehensive Design Thinking framework based on management discourse, and underline the fact that Design Thinking tools and methods, etc. are mere consequences of a set of common approaches. The concept of Design Thinking is broadly accessible in management because it seems “everyone should be a design thinker” (Kimbell, 2009, p. 3).

While designers acknowledge the significance of Design Thinking as a concept for and approach to innovation that is broadly accessible, it doesn’t say anything about what design as a profession brings to the field of service innovation processes. The term ‘designer’ is ambiguous as it covers both planning [mostly in Anglo-Saxon countries] (of products and systems), and also, what most other European languages would loosely call ‘formgiving’ (Koskinen et al., 2011, p.7). For this study I refer to a definition used by Koskinen and his colleagues that links the term designer to the professional training a designer is given at Art and Design Schools. The term would also cover respective experiences in practice.

Design and service innovation – aiming for clarity

The rather unclear conception surrounding the activities of a designer in cross-sectorial service innovation calls for investigations that provide more clarity about the meaning of such a collaboration. By focusing on design discourse this study seeks to provide a provisional framework that introduces three main elements of design into service innovation.

This set is based on a review of selected literature from design discourse, and it takes its conceptual inspiration from a set of interviews with participants from a previous project. The literature review mainly draws on texts accounting for important and often cited design research projects including actors from different sectors. It also includes texts often referred to in these projects. Thus the study does not aim at an all inclusive literature review but rather draws on recent research projects in the field of service design innovation.

The field of design and service innovation has received increased attention in the past six years. The ‘Changing the Change’ conference can be considered a starting point of this recent discussion on this issue, as for the first time in Europe it brought together designers

and design researcher interested in seeing design expand into new fields and target arenas (e.g. such as collaborative service innovation aiming at more sustainable ways of living).

Design research has documented design in service innovation projects and exemplified the power of design for service innovation. 'Design for Services' is also the title of one of the key books in this emerging field (Meroni & Sangiorgi, 2011). By introducing the preposition *for*, the authors reflect on and systematise an evolving change of a paradigm, which puts design *in the service* of collaborative service innovation. Having said that, the authors are also opening up the field of service design to a broader concern with environmental social innovation. Focus is given to case study examples, illustrating tools and methods but also to the new roles of designers (as facilitators, enablers, amplifiers, provokers of change and future visions).

Design is seen as a powerful tool towards achieving solutions for a more sustainable mode of living. One of the groups most powerfully promoting this focus is the DESIS network (initiated by Ezio Manzini's research team at Politecnico di Milano). They have covered stories about design as an amplifier or promoter of local initiatives and resources, thus contributing to the promotion and distribution of 'Design for Social Innovation and Sustainability by making successful case studies more visible and approaches and difficulties more explicit.

Today's discussion also frequently refers back to, and acknowledges the contribution of, older discourses stretching back to the 1960s. These contributions from early design research have seen the coining of the expressions 'reflection through action' (Schön, 1983) and 'turning the existing situation to a preferred one' (Simon, 1969). And today's discussion often more or less explicitly refers to the movement of critical design, documented and analysed in Fuad Luke's book (2008). There he maps design practice from Bauhaus to critical design involved with change, but he also points to the limited target audience of critical design and other movements that would not exceed their own community (Fuad-Luke. 2009).

The British Design Council offers a comprehensive framework of 'transforming design', describing key features of design for effective innovation for a more sustainable mode of living – and thus reaching into communities other than design. According to them, the main elements of transforming design are 'involving diverse stakeholders', transfer of design skills and building innovation culture.

Not mentioned yet are the communicative capacities of designers. Smulders develops the concept of design acting, mainly consisting between 'conflicting discourses' of diverse stakeholders. The concept of design acting is to link design more closely to the field of change and change management, pointing to the importance of finding a common language in innovation processes. Thus Smulders' description also refers to the sociological concept of boundary object (first introduced by the sociologists Star & Griesemer, 1989) supporting the navigation between different discourses. Boundary object has frequently been present in the context of critical design. Transferred to the context of design, it refers to the quality of design objects to bind different languages together and enable the production of common future visions (i.e. Biörgvinsson et al., 2010). The authors refer to the concept of boundary objects as they develop the concept of Things, which includes the notion of innovation as a continuous process ('design after design') and design as a process of negotiation through boundary objects. Connected to this concept are notions from social design and the idea of designers building 'mutual trust relations between diverse stakeholders' (Hillgren et al. 2011 p. 9 et seq.).

There is also significant doubt about the benefit and limits of design in service innovation. Critical texts are assessing the expansion of design into new fields more critically. Issues of concerns are the risk that design for social service innovation is not considering the political aspect of its own actions (Tonkinwise, 2010). This risk has emerged in England. The development of community-based public services seemed to not be focused on making life more socially sustainable. Instead design was seen as a means of a stopgap, making up for the progressive withdrawal of the state from delivering public services (Tonkinwise, 2010). Stephane Vincent director of the ‘transformation laboratory’ 27ième Région adds to this by reflecting on Geoff Mulgan’s list of key strengths of design applied in social innovation by pointing to a lack of skills in implementation (regarding economic realism and organizational capacity); he points to the emergence of resentments though the bringing in of highly paid consultants in low-income communities; he also points to the lack of consideration of evidence and field experiencing and ‘reinventing the wheel’ (Vincent, 2013).

However despite the greater consideration the growing field of design for service innovation has received, there is no common understanding of what it means. A concept that could serve as a basis for a fruitful dialogue between cross-sectorial service innovation and design is still missing. From the short interviews I conducted with participants from past projects it became even more evident that expectations regarding the cooperation with designers for service innovation are quite vague. The problem was not so much the propositions, that were experienced as helpful, but the visionary suggestions, namely the neutral and free space for exploration and thinking and (regardless of the innovation experience of the participant) an atmosphere that was favourable to dialogue between the partners. In this respect the interviews provided some indications of what the relations mean. However, it is still far from providing firm common ground.

Design and service innovation – a three dimensional framework

Analysis of the selected literature discussing the relation between design and service innovation and the indications from the interviews, resulted in three main groups: *approaches*, *mind-sets* and *design experience*. The groups identified contain a set of elements or components. In the following paragraphs the three dimensions and the elements forming them are discussed in a compressed manner in order to provide an overview and grounds for further discussion.

The term ‘service innovation’ is not always used in the design research literature referred to. Nevertheless the projects cited there that strive to move away from future as usual, crossing boarders between public and private sectors are usually what can be called services innovation projects (developing and implementing new (and collaborative) services. Older texts however cannot be associated with service innovation. However, here these references are used to identify and portray characteristics shaping design practice till this day. Transferring general characteristics of design to the context of

cross-sectorial service innovation could be considered one of the main contributions of this section as it might point to bridging the gap between design and service innovation.

Approaches

The approaches category summarizes components that are closely connected with how service designers go about their work.

Design includes a **service approach**. This is best expressed by the preposition *for* used in the Anna Meroni & Daniela Sangiorgi Book 'Design *for* Services' (2011). Design is putting its work in the service of service innovation. The service approach also applies to the numerous descriptions of design *as* promoter of new collaborative services, as facilitator and nourish-er of strategic dialogue, a driver of new welfare or as a catalyst of change (Manzini, 2008, 2010; Jégou & Manzini 2007; Meroni, 2007). On a more general level the service approach also connects to an older discussion centered around Daniel Schön's definition of design as 'turning an existing situation into a preferred one' (Schön, 1983). The notion of turning something existent into something better, implicitly distances itself from self-referential or subjective work – as might be the case in art. Additionally 'situations' are not referring to our own, individual situation but those of a greater community.

Keeping Distance is closely connected with the fact that designers are involved in projects with others. Even though we might argue that some of the most recent cross-sectorial service design projects were initiated by designers – they tend to keep a professional distance and aim at providing a service to a community, etc. As such the two elements are closely connected and are at the foundation of every design work.

On a more general level we might add that design is **directed towards the future**. Recent collaborative design projects strongly include this focus on future visions and the forming of "alternative future prospects" (Seravalli, 2013, p. 201). However the tradition of striving towards concrete results can be problematic in projects involving various stakeholders or communities. Implementation often exceeds the actual design project, and I think it is legitimate to say that the support or facilitation of co-creation is not yet widely recognized as a 'design result'. The conflicting perception of what is to be considered a result, can be seen as a possible source for unfavourable implementation (striving for concrete results and pushing for fast implementation, might for example support the underestimation of economic realism and organisational reality). Last but not least is the previously mentioned approach of **progressing through action** (Schön, 1982).

Designer Experience

Elements categorized into the 'designer experience-dimension relate to issues that emerge from being active in the field of design. This includes design knowledge, awareness and design skill.

A great part of **design knowledge** is acquired through the activity of designing and reflecting on designing (Cross, 2001). Designers according to Cross have detailed knowledge of the composition and configuration of artefacts they design 're-use or vary' (ibid). That is, design knowledge is essentially connected to the 'making of things, the exploration, testing and learning' (Cross, 2011; Kimbell, 2012; Brown, 2006). This knowledge of the artefact can be supplemented by knowledge about the use and altering

of artefacts. Designing includes a great interest in “what people do” and “how they use things” (Kimbell & Julien, 2011, p. 14).

Skills are acquired competences. An important design skill is to be visual, which includes the practice and corresponding skill to “make sketches, physical prototypes, mockups and prototypes for communication and discussion purposes” and dialogue (Smulders, 2010, p. 8). Recently, design projects include visualisations “giving visibility to local potentials” (Manzini & Staszowski, 2013, p. 152), or are “fosters the creation of trust between [stakeholders]” (Hillgren et al., 2011, p. 179). Also the detailed knowledge of artefacts (see above) enables designers to professionally communicate with experts connected to the production of the respective services or products and carefully accompany implementation processes. The skill acquired through production in recent service design projects includes the skill to “anticipate appropriate conditions” for the collaborative service to be developed, including “subsidies, technical help of experts and professionals” (Manzini & Staszowsky, 2013, p. 151). Though this is stated as a skill it does not apply to all cases – as we saw above (see critique).

Awareness can be considered the consequence of combining acquired skills and knowledge. Designers have a good sense for details based on an in depth knowledge of composition and configuration of products and services. Thus designers contribute through an awareness of required expertise in implementation (such as expertise, materials, line of production). They often show a great sense for details such as the detailed knowledge of artefacts, etc. And as a result of continuous exploration and experimentation they are aware of possible ‘reconfiguring’ (Kimbell, 2012), transferability and scaling of services (Meroni & Sangiorgi, 2011).

Mind-Sets

Mind-Sets refer to a general view, to convictions or attitudes of designers towards their work and professional identity. It describes a mentality widely spread among designers. Some of it is prominently described in the Design Thinking Concept.

An important designer mind-set is the **hunter and gatherer** attitude: Always in search of the new, the diverting. Typically designers would surround themselves with a collection of all kinds of references (digital or analogue) images, designs, references to technologies, etc. which are at the disposition of designers and used according to requirements of the design process either to inspire a new dialogue, report on existing design experiences or to begin an exploration. The Design Thinking concept refers to this as ‘natural curiosity’ (Plattner, 2009).

Comfortable with uncertainty. The Design Thinking authority Tim Brown connects the frequent ‘exposure of changing externalities’ with successful design experimentation (Brown, 2009). The author also speaks of ‘great tolerance of risk’ as a characteristic of design. Designing requires ‘being comfortable in situations of extreme uncertainty’ (Smulders, 2010). Another important design mind-set is the **mediator** mentality. The act of designing involves being in the middle of ‘multiple discourses’ that initiate ‘conflicting

and paradoxical situations' in need of resolution' (Dorst, 2006). Dorst specifically refers to varying 'bodies of thought about technology, form and aesthetics, ergonomics etc.'. He includes the 'diverging roles, value systems of stakeholder' involved in projects as sources for multiple discourses that are in need of resolution (ibid). The discourses need to be navigated by what Smulders calls 'design acting' – or negotiation through artefacts (Smulders, 2010). In the context of collaborative projects this issue is spoken of in terms of "managing connections and tensions that hold reality together" (Seravalli, 2013, p. 203). Biörgvinsson and his colleagues introduce the concept of design projects as things "that have objectives, time lines, deliverables, and more." (Biörgvinsson et al. 2012, p. 104) and where boundary objects are required to 'bind different languages together'. The authors also point to a continuous mediation process including the 'envisioning of potential design that takes place in use after design in a specific project.

[...] addressing the challenge of design as ongoing process and as anticipation or envisioning of potential design that takes place in use after design in a specific project." (ibid. p. 104)

'Building on the existing' is a mind-set most prominently introduced in Design Thinking. Brainstorming rules include a respective invitation (Plattner, 2009). In the recent design discourse the acknowledgement of the **existing as resource** includes social and creative resources of communities and stakeholders. Design is 'starting from existing resources' and is enabling and supports 'co-creation by the population' (Manzini & Staszowski, 2013).

APPROACHES	DESIGNER EXPERIENCE	MIND-SETS
<p>SERVICE APPROACH E.g. design aims at turning existing situations into preferred ones, 'Design for Services' or design as provoker, facilitator for dialogues and as infrastructuring (Simon, 1969; Meroni et al., 2011, Manzini, 2008; Biörgvinsson, 2010).</p> <p>KEEPING DISTANCE E.g. involved in projects of others. (Buchanan, 1992)</p> <p>RESULT AND FUTURE ORIENTATED E.g. Envisioning future visions (Manzini et al., 2013) forming of alternative future prospects' (Seravalli, 2013). The tradition of striving towards concrete results</p> <p>PROGRESSING THROUGH ACTION E.g. reflection in action, design research in action (Schön, 1983, Manzini et al., 2013)</p>	<p>KNOWLEDGE E.g. knowledge in terms of composition and configuration of artefacts (Cross, 2011). Respective knowledge of and the requirements for implementation (such as inclusion and coalitions with stakeholders) (Manzini et al., 2013).</p> <p>AWARENESS E.g. awareness of the requirements of implementations (materials and line of production). Sense for possible 'reconfiguring' (Kimbell, 2012), 'transferability and scaling of services' (Meroni et al., 2011).</p> <p>SKILLS E.g. Data visualisation, give increase visibility to issues, enable creation of mutual visions (Manzini et al. 2013). Make anything from sketches to physical objects for discussion purposes (Smulders, 2010). Communicate with experts and accompany implementation</p>	<p>HUNTERS AND GAHTERERS E.g. collecting references, open to the new (Brown, 2009)</p> <p>COMFORTABLE WITH UNCERTAINTY E.g. Great tolerance for risk, (Brown, 2009) and comfortable with uncertainty (Smulders, 2010).</p> <p>MEDIATOR E.g. Frequently confronting the multitude of discourses Dorst, 2006. Used to find ways to navigate between these discourses and resolve paradox (ibid.) – design acting (Smulders, 2010). Managing connections and tensions (Seravalli, 2013)</p> <p>RECOGNIZE THE EXISTING AS A RESSOURCE E.g. Starting from the existing (social) resources (Manzini et al., 2013)</p>

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Figure 1 Three-dimensional Framework describing the common elements of service design for cross-sectorial service innovation, as depicted in design discourse

Discussion

The short paper set out to make a step towards achieving a common understanding of design and cross-sectorial service innovation. The paper proposes a framework depicting dimensions underlying the recent discussion around design and service innovation but also transferring general characteristics of design to the context of cross-sectorial service innovation.

There are several recurring themes crossing these dimensions and in reality the marking-off of dimensions might not be as clear as described in the framework. For instance collecting of references leads to potential professional knowledge and input. Similarly the service approach is connected to the focus on mediation between discourses.

Many of the writers within design discourse focus on design as a service, i.e. service design. They highlight the emerging fields and new roles (promoter, facilitator, etc.) of designers. Design is also seen as a powerful and broadly accessible tool in management discourse. However, research up to now has failed to bridge the gap between the differing notions of Design Thinking and emerging design fields. Thus we fail to see the details of the contribution of the design profession in service innovation.

The provisional framework presented here lays the foundation for further discussion on this issue. Furthermore, the identification of common characteristics was based on indications from interviews with partners from a previous service innovation project, which gave a general direction to possible dimensions of the framework. Otherwise the groups of elements were identified from recent design research projects involved with service design innovation crossing different sectors. This included key reference texts often referred to in older discussions. However, this methodological approach carries the risk of missing out on relevant literature from service design or strategic design. Thus the provisional framework should be considered a first stepping stone – to be further discussed and supplemented.

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SHORT PAPERS

Transforming the planning process - challenges for the service designer

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Abstract

This paper focuses on the public consultation process for planning applications which have an effect on physical changes to urban settlements. We draw on experiences from project work undertaken on the planning system in Liverpool (UK). We discuss the process as is, critique the current limitations in regard to public engagement on planning applications, and develop advice to service designers who want to work within such an existing institutional setup. In particular, we caution service designers to be aware of issues related to open data access, the difficulties in managing expectations of actors, and the importance of understanding one's own biases. We suggest that more research is required on understanding suitable service design approaches to break up existing institutional practices in urban planning.

KEYWORDS: urban planning, public consultation, planning applications, role of service designer, existing institutions, redesigning interactions

Introduction

Complexity science demonstrates how interventions on a specific element in a complex system influence the overall structure. Cities are complex systems shaped by many elements and actors of different interests interacting among each other and with the environment in a non-linear (and therefore often unpredictable) way. Most basically, urban planning can be defined as “art and science of ordering the use of land” (Wyatt et al., 2003). Because of the scale of its interventions, urban planning deals with wicked problems, which calls for deep understanding to anticipate “waves of repercussion generated by a problem solving action directed to any node of the network” (Rittel & Webber, 1973, p. 156), and the involvement of different stakeholders in decision-making processes.

The planning system has a statutory public consultation period of 21 days, during which local planning authorities attempt to notify, inform and engage with citizens. Social complexity associated with public consultation, defined as a function of the number and

diversity of players involved (Conklin, 2006), and the importance of this step in promoting civic engagement, calls for a careful design of the interaction that different actors have with this service.

Buchanan (1992) argued that design plays a significant role in dealing with complex, ill-defined, wicked problems. The main question that we seek to address with this paper is the contribution of designers to the definition of services that facilitate discussion between government and local actors during the planning application process.

A holistic understanding of a service system and its actors is part of the discipline of service design (Mager et al., 2000) and we argue that it should contribute its methodologies (e.g. service design thinking) and tools (e.g. blueprints, system maps, actor maps, scenarios) to the development of improved participatory urban planning practices. By applying their skills of “see-show-foreseen” (Zurlo, 2004, p. 96), service designers are able to visualise the current structure of a service system and contribute to the development of a strategic direction. However, for participation in changing urban planning processes, service designers face the difficult task of designing publicly accessible touch points and interfaces. These should be “useful, usable and desirable” for the citizens, and “effective, efficient and distinctive” for the public administration (Mager, 2008, p. 354). Acting as change agent, service designers can play a leading role by involving members of government, market and civil society to the design of interfaces and touch points (Manzini et al., 2012) in order to improve established consultation processes.

In this paper we report on our experience as part of an interdisciplinary team in redesigning the public consultation process for planning application in Liverpool, UK.

Open Planning, project overview

Open Planning is an ongoing project that aims to enhance the quality of planning applications, by intervening on public consultation, with a tool for active engagement and citizen empowerment. As a service platform, Open Planning seeks to improve the interaction between stakeholders by providing spatial reference, integrating information through a set of physical and digital touchpoints, and making such information readable and visible.

The paper reports the development of the first stage (April-June 2013) of the project, in which a heuristic evaluation (Nielsen & Molich, 1990) of the planning system in Liverpool was conducted. A number of activities with stakeholders were organised in order to identify limitations and opportunities from the point of view of local government, commercial investors and civil society groups (Friedman et al, 1998). Our primary research was accompanied by an exhaustive study of the recent evolution and current status of the policy framework (Killian & Pretty, 2008; Taylor, 2012). Furthermore, an additional review of participatory urban interventions that succeed to engage with citizens, and connect physical place and digital data was carried out.

During the second stage (February–April 2014), a number of co-design activities with stakeholders will inform the development of a digital tool that aims to complement the identified deficiencies of the current system, encouraging everyday civic engagement through the integration of mobile devices, social media and GIS data. Finally, a first prototype will be

tested and evaluated in collaboration with Liverpool City Council and Engage Liverpool (scheduled for April 2014).

Re-designing interactions around planning applications

As part of the research conducted with stakeholders, members of civil society and representatives of local community groups provided first-hand experience with the planning system in a cognitive walkthrough (Hannington & Martin, 2012). In this exercise, the statutory publication requirements for planning applications were analysed, and citizens identified site notices and the online portal to be crucial boundary artifacts (Star et al., 1989).

Although site notices and online portals might seem highly democratic, accessible official methods of communication, a number of weaknesses in the system may prevent citizens from being notified, informed and participating in the decision making process. For instance, citizens pointed out the difficulties in understanding the technical, text-based format of the announcements, the inability to envisage the impact of the application, the challenge of spotting a planning application on the street, or even to retrieve information from the online portal. Consequently, citizens rely on alternative sources of information, and expressed distrust towards local planning authorities efforts to engage with citizenry.

On the other hand, local planning authorities provided clear information on current practices, desired improvements, legal requirements and limitations. Although a strong desire to improve efficiency during the public consultation process was expressed, resource constraints were highlighted, mainly in terms of funding and time for development. Efficient use of already present resources, i.e. the information attached to planning applications, especially the GIS database, was particularly welcomed.

Constraints in time, team resources, and institutional inertia (inflexibility of changing the current system quickly) lead us to approach the current system through an acupuncture approach (Jegou, 2010): we focused on small, targeted interventions, which in the logic of complexity science lead to the desired final outcome for the system as a whole. For this reason, the Open Planning team decided to concentrate on the redesign of the aforementioned touch points of the system, as a promising way to innovate the interaction between citizens and local government, and generate a systemic improvement.

We identified an opportunity to increase citizen empowerment by developing a digital tool that complements the public consultation stage of the planning system. Building upon the preliminary findings, a digital tool will be co-designed and developed during the second stage of the project, aiming to provide planning applications with the geographical reference they currently lack, and create a digital platform for public debate that shall be integrated with official channels provided by local planning authorities (site notices and online portal), and make use of widespread digital communication practices.

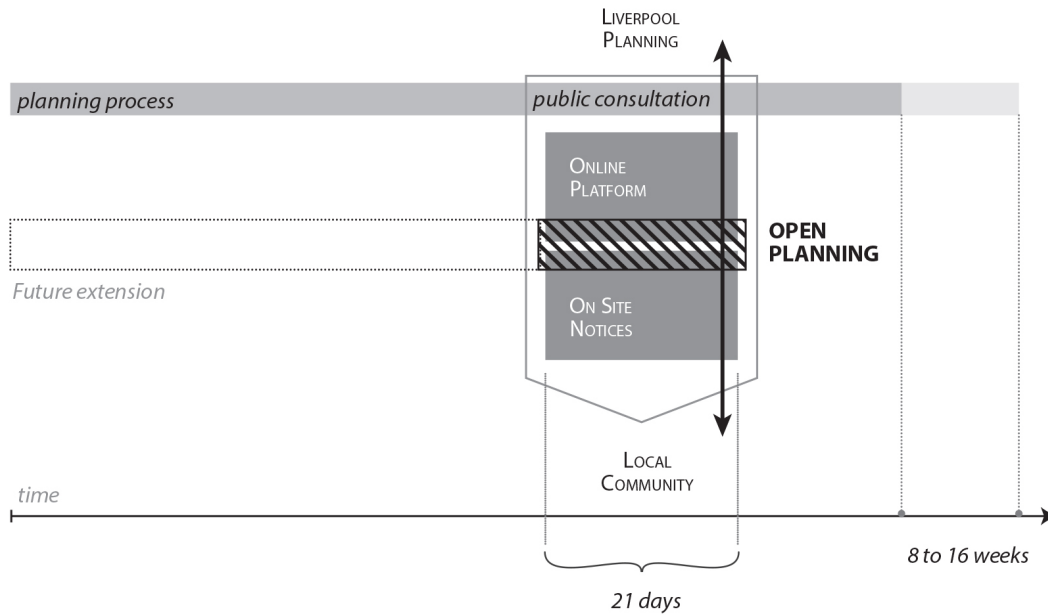


Figure 1 shows where Open Planning is positioned, in relation to the planning application process.

Challenges

We found three tensions particularly pertinent and worthwhile to note for a service designer who may want to work within the existing set-up of the planning system:

1. Checking one's own perceptual biases: Our aspiration for a participatory process (Manzini & Rizzo, 2011) was challenged not only by tensions of interests among different actors, but also because we were restricting our approach as a result of the bias coming from the original project brief, which suggested an augmented reality-based mobile app. Rather than draw from research findings, this bias preconfigured our research approach and participatory activities. Conversely, the sustainability and significant difference towards strengthening opportunities for informal deliberation in an augmented-reality based app was questioned. Although the local authority and local community members favoured the development of a mobile app, more research is now required to confirm our approach with a wider audience.
2. Accessing data: A third party company holds and manages the GIS data attached to planning applications, while the data itself is owned by local authorities. Hence, we foresee that the feasibility and sustainability of revising the service platform will depend not only upon the ability of the local authority to be proactive, but also the services provided by the third party company.
3. Managing risk averse stakeholders: Even though creative urban practices were regarded as one of the pillars to foster engagement and connect site notices with digital platforms; creativity was ultimately deemed as dispensable and even risky. With regard to the inclusion of visual content in a primarily text based system, although favoured by citizens, local authorities were conscious of possible legal constraints, lack of resources to implement it and developer backlash.

The interim outcomes have shown that the designer's fundamental role in engaging in the redesign of a system faces many challenges, but offers promises for radical service changes. A key challenge is to spend sufficient time to understand the existing institutional set-up and actors' interactions, but also to clarify one's own assumptions, expectations and perceptual biases. Some of these challenges could be mitigated very successfully by having locally well-known and respected team members, who act as local champions and provide trust. As a critical success factor, Open Planning succeeded to develop trust relationships among key actors in a very short time. The support and active contribution of local authorities and community groups has been paramount to the success for such a service design project.

Moreover, in projects conducted collaboratively between practitioners and researchers, the process may be subordinated either by the demands of action or the research community. Necessary parts of the research process are often neglected in favour of the action aspect (Kemmis, 2010). Although we have noticed this issue in our own practice, we concluded that even though each stakeholder has behaved according to the requirements and conditions of their practice, the pursuit of a common objective, i.e. the improvement of the planning application system, has brought the team together.

Next Steps and Preliminary conclusions

As a next step, we will proceed with our next challenge of undertaking additional co-design workshops with local actors in order to reinforce our learning from the initial project phase. This is particularly important to the development of a novel interface to the planning process.

Collaborative, design-led efforts such as Open Planning open doors and make key decision makers become receptive to change. However, design actions must be integrated into a process that, because of bureaucratic, infrastructural and budget limitations, present very little flexibility. We see that service design's holistic approach is valuable in understanding such established contexts as traditional consultation activities and their resources in new light. Our experience has shown that more research is required into the urban planning process from a service design perspective to explore the applicability of service design methodology in the development of touch points of interactions between different local actors to promote civic engagement.

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Transforming Basque manufacturing companies through Service Design. Showing the potential of Service Thinking

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Abstract

This short paper aims to illustrate the joint effort by Mondragon University's Design Innovation Centre (DBZ) and the Mondragon Group's Business Acceleration Centre (BAC Mondragon) to demonstrate to manufacturing companies the innovation potential of Service Thinking. In this initiative, Strategic Design students have used Service Design to create new service concepts based on Mondragon Group's current products and manufacturing capabilities. The process and the results obtained were presented to Mondragon Group's managers with the purpose to promote future Service Design projects. This initiative became the first stage of the Service Design for Industrial Enterprises (DISEI) project. DISEI is an ongoing knowledge transfer project that tries to introduce Service Thinking into the Basque industry as an innovation strategy.

KEYWORDS: service logic, servitisation, service thinking, service design

Introduction

Several indicators show that there is a structural change of the European countries towards a service society. Despite the contribution of services to economy, the industrial sector is still the pillar for some European countries and regions, e.g. the Basque Country. In order to keep their competitiveness in increasingly globalized and competitive markets, manufacturing companies must offer customized and sophisticated product-service solutions to their customers (Meier et al., 2011). In this sense, enabling interdependent relationships with customers, focused on value co-creation, might be an opportunity for manufacturing firms.

This short paper describes the initial stage of the ongoing DISEI project (Service Design for Industrial Enterprises, in its Spanish acronym). The goal of DISEI is to introduce Service Thinking to Basque manufacturers. In line with Sangiorgi et al. (2012), Service Thinking

could be understood as a framework for innovation that has its roots in a new way of thinking about value (Service Logic), that affects the way products and services are conceived (Service Design). In this first stage, Service Thinking potential is shown to manufacturing companies' managers in order to promote future Service Design projects.

Servitisation and Service Thinking

The importance of services in the industrial sector has grown remarkably during the last years (Neely et al., 2011). Kujala et al. (2013) summarise the benefits of services for industry identified from literature into five different perspectives: (i) Strategic benefits, based on differentiation and the creation of entry barriers for competitors, (ii) Financial benefits, based on the stabilization and the increasing of revenues, (iii) Marketing and Sales benefits, based on the increasing of the familiarity, credibility and trust with the customer, (iv) Learning and Innovation benefits, based on the access to useful information about the client, and (v) Implementation Efficiency benefits, based on improving delivery efficiency through information exchange and cooperation. However, the adoption of more 'servitised' perspectives brings significant corporate challenges for manufacturing companies. These challenges are related to customer relationships, pricing and financial flows uncertainties, organisational and cultural shifts, changes on design, development and delivery processes, etc. (Baines et al., 2008; Meier et al., 2010). In this sense, the product-service transition phenomenon has been studied by several authors (e.g. Gebauer & Friendli, 2005; Oliva & Kallenberg, 2003) as well as value creation and co-creation processes through services (e.g. Payne et al., 2008; Vargo & Lusch, 2008).

Nevertheless, it is necessary to underlain that according to Kowalkowski (2010) 'servitisation' and the transition from Goods Logic to Service Logic are two distinct change dimensions. The first reflects a strategic repositioning of the manufacturing firm in the market through a shift from selling products to selling services. The second reflects a new perspective on value creation, from value added to value co-creation. These transitions may or may not be parallel movements. Service Dominant Logic (Vargo & Lusch, 2008) can be considered as the theoretical paradigm of value creation transition and Service Thinking can be described as the potential driver for this transformation (Sangiorgi et al., 2012). So that, Kowalkowski's (2010) original reasoning can be reframed as it is indicated in "Figure 1": Service thinking and Product-Service transition.

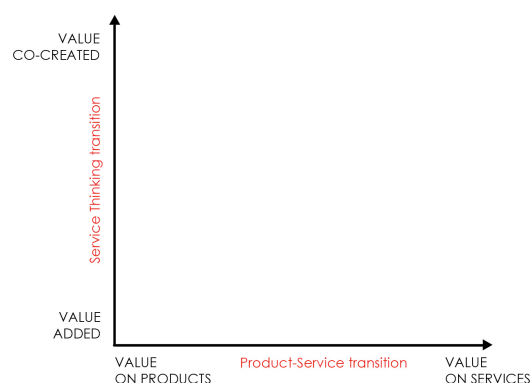


Figure 1 two distinct service transitions for manufacturing firms.

This means, that for manufacturing companies, the implementation of Service Thinking as an innovation strategy may not necessarily mean a radical shift into a more 'servitised'

business models. Ergo manufacturing companies could use Service Design as an innovation methodology to reach market differentiation, searching for closer and more customized co-created solutions, without causing a significant scroll in the product-service continuum. This implies, that in Service Thinking transition, some inherent financial risks and uncertainties of ‘servitisation’ processes could not be critical because the business model may not change significantly. However, manufacturing companies’ cultural barriers for the assumption of value co-creation frameworks are still to be considered. In this regard, one of the challenges for the adoption of Service Thinking in the industrial sector is enabling the cultural shift among managers, marketers, designers and engineers.

The DISEI Project

The aim of DISEI project is to introduce Service Thinking as an innovation strategy among Basque manufacturers in order to enable both ‘servitisation’ and Service Logic transitions. To do this, the project counts with the collaboration of Mondragon Group (the leading business group in the Basque Country) present in several industrial sectors. DISEI is thought as a knowledge transfer project conducted through case studies.

Beckman & Barry’s (2007) innovation framework propose to embed innovation in organizations as a learning process. The authors frame their innovation process as one story-telling and re-telling divided in five steps: (i) Make me care, (ii) Show me something new, (iii) Tell me what’s missing, (iv) Show me opportunities and (v) Make it tangible. In this case, Beckman & Barry’s process has been reframed into three stages for DISEI’s specific purposes: (i) Show the potential of Service Thinking, (ii) Experiment with Service Design, and (iii) Implement Service Design. The process is illustrated in “Figure 2”.

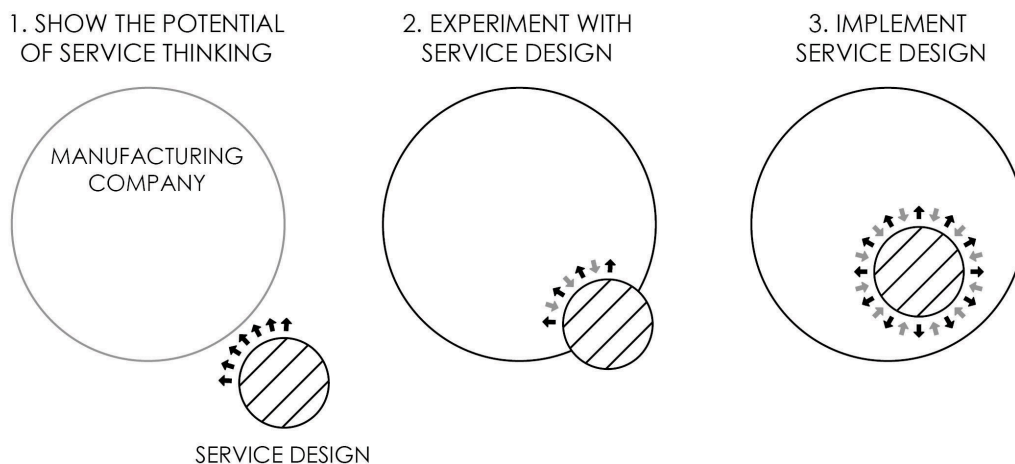


Figure 2. Stages for the introduction of Service Thinking in manufacturing companies.

The goal of the first stage is to show the innovation potential of Service Thinking to manufacturing companies (Make me care and Show me something new), raising awareness on ‘design readiness’ (Bailey, 2012). This is carried out via demonstrations oriented to manufacturing firms’ managers. These demonstrations illustrate conceptual human centred service solutions designed by Strategic Design students for each of their specific industrial companies. The second stage is focused on making industrial companies experiment with Service Design (Tell me what’s missing and Show me opportunities). This is carried out via Real Life Learning Labs, where teams of students under mentorship of lecturers and industry professionals work on real life assignments. The third stage is focused on the

implementation of Service Design through the access of Strategic Design students to industrial companies. The idea is to implement the previously designed service concepts (Make it tangible). Students are integrated in the company staff, supported by company's heads and university's Service Design experts, to assure the sustainable embedding of Service Design, since the implementation of innovation in organizations often fails to achieve the expected results when it is delivered by an external agent (Mugan & Albury, 2003). DISEI is thought as a qualitative case study research and as a non-linear process, where the feedbacks of the performed cases enrich the following ones. The next section describes how the first stage has been carried out.

First stage: showing the potential of Service Thinking

Establishing participatory cooperation synergies between the Group's companies is one of the continuous objectives of Mondragon. In this sense, BAC Mondragon has taken the initiative of materializing the Group's intra-entrepreneurship strategies. In this task, one of the strategies for generating new business opportunities is to promote services based on the current installed manufacturing capabilities. The interests of BAC Mondragon suits with the purposes of DISEI project, so, a business-academic collaboration was launched where Strategic Design students used Service Design methods and tools for manufacturing companies.

Students were asked to use Service Thinking principles (from value added to value co-creation, from units of output to processes, from individual actors to interconnected systems) and Service Design tools, to re-think manufacturing companies' value propositions focusing on inter-cooperation between Mondragon Group's companies. Based on this premises, students conducted an analysis of Mondragon's products and manufacturing capabilities, and collated them with global and sectorial trends, and potential customers' needs. Grounded on this analysis, students identified potential service opportunities. Then, based on these opportunities, new service concepts were created using Service Design tools.

Initially, as the students were free to propose radical changes, it was expected that the service solutions would imply a 'servitisation' movement for the companies. Nevertheless, it was noticed that the solutions designed by the students, even if they are just concepts, could reach some specific market differentiation benefits without affecting significantly companies' business models. In fact, the proposed concepts increase the familiarity with customers, enabling access to useful information and generating improvements in product design and delivery through information exchange, without significantly modifying cost infrastructures, main revenue channels and key resources. However, the customer experience was deeply influenced. The performances designed within the service concepts changed the interaction with customers from product centred to process and human centred frameworks.

The service concepts, the design process and the Service Design tools used by the students were presented to Mondragon manufacturing companies' 40 executive heads through a monographic workshop designed to: (i) show participants Service Design methods and tools via Service Design expert presentations, (ii) learn to think outside the conventional view of their specific business inspired by students' service concepts, (iii) conceptualise new potential business opportunities based on the provided Service Design competences and examples, and (iv) sketch preliminary action plans for the realisation of future Service Design projects.

Conclusions

The conceptual service propositions showed the innovation potential of Service Thinking for Mondragon Group's manufacturing companies. In fact, Service Design projects in several sectors (machine-tool, automotive and construction industry) have been launched thanks to the good reception of the service concepts. Currently, these projects are being carried out by the students, and supported by university's researchers. The success of this initiative is also due to the figure of BAC Mondragon, key promoter of new service opportunities inside the corporation.

As it is told, DISEI is still in development, so the theoretical framework where it is grounded must be demonstrated with further case studies. However, the initial empirical experiments suggest that Service Design could be considered as a new methodology to guide manufacturing companies in Service Logic transition. In the same way, the preliminary results show, that also in industrial contexts, customer interaction could be conceived as a human centred value co-creation process without causing a significant scroll in the product-service continuum.

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The Future of the Service Design Category: Authentic Adaptation as a Way Out?

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Abstract

Service design as a new market category has emerged quite rapidly since the first pioneers, live|work in 2001 and Engine 2002 started offering service design commercially and claimed the label. Since then, a service design field has developed, which features institutions such as the Service Design Network, Master courses at universities, and academic conferences. Recently, the success of service design attracts management consultancies, which include service design as part of their core offering. This represents a challenge for the pioneers, as modifications of the practice might lead to ambiguous meanings and hence the category as a whole can suffer from devaluation by audiences. As a consequence, the entire category is likely to turn into a fad. In order to prevent this from happening, pioneers have several strategic options at their disposal. In the following, we propose a research design, which suggests the theory of ‘Authentic Adaptation’, pioneers might react in drawing from their heritage, while also adapting to the new context.

KEYWORDS: service design, market category, fads & fashion, pioneer, meaning

Introduction

Organisational theorists describe the emergence of new markets as the mutual understanding of producers and consumers with respect to a product or service (Rosa et al., 1999). More precisely, it is the agreement on the meaning of the purchased good or service, which is expressed in common usage behaviours and shared interpretations. These market categories ‘labelled with a meaning’ (Kennedy, 2008) are groupings of organisations producing similar products or services, which cohere around an exemplary representation of those organisations (Porac et al., 1995) in the minds of audiences. It is a cognitive simplification to deal with huge amount of information (Rosa et al., 1999).

Hence, categorisation is a process where different levels of analysis collide (Hitt et al., 2007), as the meaning of the category is inextricably linked to the meaning of the exemplary

prototype. Especially if an organisation is seen as close to this typical mental prototype, its fate is closely linked to the fate of the category (Glynn & Navis, 2013), as it is the case in the first author's research setting with Engine in the service design category. According to Navis & Glynn (2013) "categorization is a complex process that can span multiple levels of analysis [...] from individuals through organisations and markets" (ibid, p. 1124).

To date, most research on niches and fields links categories to isomorphic pressures and cultural persistence, but new categories also emerge around shorter-lived practices, firms and markets—or fads. In studies that explore the conformity pressures exerted by categories, an implicit assumption is that categories are generally durable (DiMaggio & Powell, 1983). The literature on management fads and fashions however, reflects on situations where new kinds of management practices spread widely, but also fall out of favour quickly (Abrahamson & Fairchild, 1999). Even when new organizational forms and related markets emerge around diffusing practices, the labels used to categorise a related practice, form and market may still be short-lived, at least in terms of popularity and the isomorphic pressures associated with categories.

Within this context, we consider service design as a category of professional services. It emerged in 2001, with the founding of live|work, the first service design consultancy, which started to design service experiences. Inspired by the shift in the market from products to digital services, and marketing scholars' discourse about services in the mid 1990s, these pioneers blended their professional product and digital design techniques with tools borrowed from marketing (Stigliani & Tether, unpublished). With the entrance of the second pioneer Engine promoting the service design language and facilitating networks, the foundation was laid that service design became synonymous for a practice, an organisational form and a market within the last decade (Segelström, 2013).

In service design, the success of category pioneers invited imitation and entry into this new market from new competitors, some of which include larger firms with an alternative approach in service design. In particular, large consulting firms that establish service design practices stress the benefits of their strengths in more conventional services, such as strategy consulting and operations. In response, one of the category pioneers live|work has recently begun to position itself as engaging in business design, rather than service design (Reason, 2013). With this move, live|work took itself out of the service design field and entered a nascent market category - business design. This is not only a risky move for live|work, but also comes at a price for the existing members in the service design category.

Theoretical Background

This story is only partly addressed in the current literature. We know category pioneers benefit from constructing a category that gives members a collective identity, blending their individual identities into a common one that aids their viability (Navis & Glynn, 2010). But if a firm closely identified with a market category should exit, this firm leaves a void and undermines category desirability and currency (Glynn & Navis, 2010; Rosch et al., 1999). This might not only undermine the demand by audiences, but also the support by members (Hsu, 2006). Moreover, the exiting firm might even serve as a role model and initiate other firms to follow, or not to identify as service design firm. While the existing literature acknowledges that the perceived value of a category depends partly on its population density (Carroll & Hannan, 1989), these findings are not reconciled to the possibility that increasing

density of new types of organizations and practices is also associated with the diffusion of management fads and fashions (Abrahamson & Fairchild, 1999). When a firm switches from identifying itself with a widely diffused to a identifying with a new one, this act is tantamount to category exit, and it could very well contribute to perceptions that category is becoming an outmoded fad. Hence, firms left in the category being ‘exited’— especially those who are at the core—face a strategic problem: is it better to leave the ship that could be sinking, or stay and defend its integrity? Drawing on the relational perspective in cultural sociology, we can conceptualise categories as dynamic meaning structures in which the core attributes shift over time (Emirbayer, 1997; Mohr, 1998). Rather than limiting analysis to observing differences between *de novo* and *de alio* firms, we can trace quantitative and qualitative shifts in the composition of category membership and relate changes in the category meaning (Kennedy, 2008). This perspective suggests not only that category exits should affect category meaning, but also firm that category viability will be more affected by exits of firms that are closer to category prototypes. Hence, analysing related shifts in category membership and meaning should inform the firm strategy. Seeing such shifts suggests whether firms ought to embrace new elements of category or reassert the importance of existing ones. More drastically, it also suggests the potential value of exiting the home category service design for a new one (such as business design) or staying and defending the home category.

Those ‘conformity effects’ exerted by a collectivity of firms identifying themselves with the same label are at least partly related to the cognitive limitations by individuals (DiMaggio & Powell, 1983). They reflect our individual capacity for sensemaking, which also informs collective sensemaking at the population level (Hogg & Terry, 2000). An individual makes sense of a situation by giving meaning to an experience. The mechanism behind this includes extracting cues and linking them to well-learned cognitive structures (Weick, 1995). In imperfectly competitive markets, members of this market classify themselves in subgroups, identified by core attributes serving as cues for the shared sensemaking of categories (Porac & Thomas, 1995). These entrepreneurs engage in sensegiving. On the contrary, audiences engage in sensemaking: the more a firm resembles the cognitive typical prototype of the category, the more it is perceived by audiences as key member (Porac et al., 1995) and legitimate (Zuckermann, 1999; Hsu, 2006). DiMaggio & Powell (1983) argue that isomorphism serves to ensure stability and durability.

In contrast, management fashions literature claims that practices and hence categories can follow a short lived lifecycle (Abrahamson & Fairchild, 1999). Apart from the literature on individual entrepreneurs constructing an emerging category, we do not know the effects when such a company at the core exits the category, and diffusion literature falls short in explaining structural responses due to reinvention of the practice while adopting (Rogers, 1980).

The current literature simply does not address the consequences for meaning attribution due to categorical events. In other words, the competitive dynamics literature does not mention the sensegiving and sensemaking processes exerted by entrepreneurs and ignores the importance of audiences in competitive dynamics (Ketchen et al., 2004). Hence, the first author proposes investigating the following research questions:

RQ1: How does a firm at the core of a category respond when another firm closely identified with the market category adopts a new label to explain its offerings?

RQ2: How do category members react on their rivals’ moves that tend to undermine the perceived meaning or currency of the market defined around the category?

We propose exploring these questions in the context of service design using both qualitative and quantitative research methods. Using participant observation, interviews and survey data, the first author will observe managers' responses to the changing membership and meaning of the service design category. Based on early fieldwork, we hypothesise that firms have several choices:

- (1) not adapting at all (sticking with an earlier conception of the category),
- (2) modifying their practices to fit their perceptions of category change,
- (3) reinterpreting the category by adopting some elements and assert others up, to
- (4) redefining themselves by identifying with another category,
- (5) pretending to adhere to the changes in their existing category, but decoupling their day-to-day activities (Meyer & Rowan, 1977).

Overall, our aim with the research we are proposing is to develop the concept of 'Authentic Adaptation' as a response to dynamic categories and to explore how well this works for category members. Specifically, we suggest pioneers navigate stormy waters by choosing whether to

- » stick with a changing category by allowing new developments to join more established elements of a category concept, or
- » choose to de-emphasise a category they had identified with — up to and including the point of leaving it, so to speak by, moving on to identify with a 'next' category to avoid going down with a category that could be turning into a faded fad.

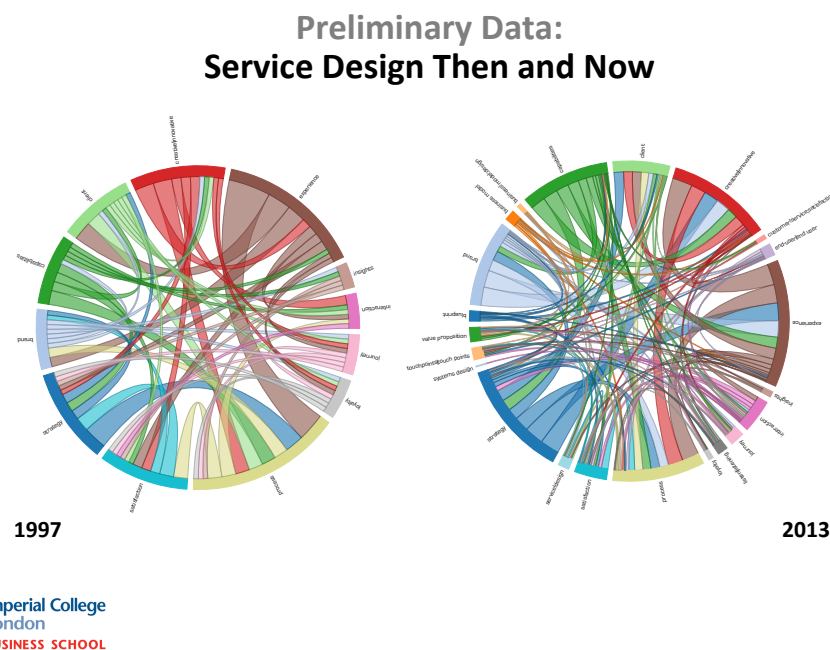


Figure 1: Kirchberger, E.-M. (2013). *Chord Diagram*.

As part of our quantitative research study, we aim at measuring changes in meaning at category level, in order to explain events at market category level, such as entries or exits. Hereby we will also use methods of relational content analysis to develop quantitative models of shifting category meaning and use those to explain the reactions of individual

firms. We will make use of relational content analysis to extract category meaning. Further, we will use 1) Factiva, to scan publications upon the mentioning of service design 2) use a novel software to evaluate how service design is talked about. The chosen method is a combination of “social network analysis of economic sociology’s embeddedness perspective (Granovetter, 1985) with a linguistic turn to views about what is real” (Kennedy, 2008, p. 274).

To give a sense of what we are exploring, Figure 1 shows some initial views we have developed to model how understanding of the service design category has developed and shifted over time. What this figure shows are co-mentions of attributes of the service design concept and how these have between 1997 and 2013 in approximately 10,000 news stories from both periods (downloaded from Factiva). In these chord diagram visualizations of concept element centrality, arc size shows the relative centrality of a concept element and chords between arcs show how a concept element’s centrality is related to its linkage to other concept elements. Our interest is in relating such models of shared understanding like these to the sensemaking of firms.

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Challenges and perspectives in Service Design curricula. The case of the Service Systems Design Master of Aalborg University in Copenhagen

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Abstract

In this paper the new Master program on Service Systems Design at Aalborg University in Copenhagen will be presented, focusing on the challenges of building such a curriculum and on its peculiar approach to Service Design through the Problem Based Learning methodology. All the semesters will be described.

KEYWORDS: Teaching, service design, case study, learning, problem based learning

Introduction

Service Design is still a quite new and growing topic of research and many different definitions of the field can be found. In a recent paper by Valtteri Nisula (2012) proposes a first attempt to analyse the multiple different definitions and dimensions of Service Design, and a rough categorization through the different approaches: mainly distinguishing among the systemic and the human experience one. Both the work by Sangiorgi (2009) and Blomkvist, Holmlid et al. (2010) tried to define current and future trend in Service design distinguishing basically among two main approaches: the one that try to integrate practices and ideas from other fields and the one that works on the basic assumptions and methods in service design. Between these two main approaches it is possible to analyse some trends that are related to design theory, Management, Systemic approach, Design techniques and case studies. This categorization of research trends can be directly mapped into the actual educations that are now available on Service Design. In a recent workshop, held at the Service Design Conference in Finland (2012), it was discussed what are the competencies that a 'Tomorrow's Service Designer' need to know and, although it is not possible to professionalise the domain, educational programmes should deliver the desirable skills, from conventional and contemporary design skills to business skills. In order to deliver these kinds of skills it is important to also to capitalise the differences that can be taken in the education

from the different background of the students. The Master of Service Design in Aalborg is a particular case, where students both from different Design disciplines and from Management education work together, merging their different perspective on Service Design. This Master program started on September 2012 with the idea of focusing on the systemic approach and giving a more holistic view of Services. In the following paragraphs the semesters will be introduced, focusing on the challenges of the education.

The structure of the master

Being part of the general education at Aalborg University (AAU), the structure of the master is based on two or three 5-ECTS¹ *teaching* modules and one 15-ECTS *project* module per semester. AAU's general teaching approach is based on Project Based Learning (PBL). This approach tends to create strong links between theoretical and methodological contexts and practical problems (Kolmos 2004). This approach transforms the role of teaching and supervision, from a more scholastic view to an approach that encourage the student to engage directly into the key issues in each teaching area. Teaching, in this approach, changes into facilitation, i.e. a process that supports the ability to take control of ones own learning and stresses participatory research, as a source of motivation (Kolmos, Du et al. 2008). The project module is indeed an opportunity to work in direct contact with companies or institutions that propose project areas on which the students will work to generate solutions. The teaching modules are meant to provide the fundamental knowledge for the semester, whereas the project module is an opportunity to apply the methodological and theoretical framework of the teaching modules to a practical problem.

Each teaching module may include theoretical lectures, as well as workshops, small seminars and sometimes open lectures from special guests. The main project in each semester (15 ECTS) addresses a general theme for the semester. The complexity of the problem to solve, in each semester, is shortly described by the title of the general theme.

The progression

The master is structured on the basis of a progression that gradually increase the dimension of the design problems. In the first semester the student is introduced to service design. Here the focus is on different aspects of the services, including technical aspects, aspects related to user interaction and aspects related to design methodology. The title of the semester, “the craft of design” suggests that students are introduced to service design as pupils were introduced to the craftsman workshop, to learn the state-of-the-art methods and tools to design a single service. The first semester looks at the way designer can create a specific instances of a service (e.g. how a local restaurant can personalise its meal service); whereas the second semester introduces a new level of complexity: services are analysed as configurations in which technical, social and design aspects form systemic structures (e.g. the way services can coordinate informal or formal resources in a city). The problem to solve, for the student at this level, is about integrating those aspects, while refining methods and tools that can address technical and user-related issues. The third semester is adding the

¹ European Credit Transfer and Accumulation System (ECTS) is a standard for comparing the study attainment and performance of students of higher education institutions across Europe.

strategic and business related dimension of service design. Here the students will place service design in a business context and focus on organisational aspects, including reproducibility of services, scalability, modularisation, competences and strategies. Finally the fourth semester is dedicated to the integration of the acquired knowledge in a final project.

First semester: the craft of design

The first semester of this master is articulated over three specific courses:

1) Designing Product Service Systems, 2) Procedural Programming and 3) User Experience Design for Multimodal Interaction.

In the first module students are expected to acquire a basic understanding of the nature and characteristics of services, along with their structure in relation to its time, experience and interaction factors. They should also comprehend the nature and characteristics of the interaction between service providers, technologies and users in a service encounter. Upon the conclusion of the module students are expected to be able to apply adequate analytical and interpretation tools to integrate users' needs and possibly participation in the design process. They are expected to be able to design a simple service, its structure, components and actors, organising the sets of operations, sequence of events, interactions and material evidences that characterize it.

The programming module integrates existing knowledge about programming to a level that is required to understand the basics and work with the most used frameworks and applications in interaction design and digital services that can be used for service platforms. The programming module poses a real challenge in this context, because the technical background required to access the knowledge related to services is fairly advanced, while the perspective candidate students come from diversified backgrounds that rarely encompass a highly technical training. However, the designers of this master firmly believe that a solid grasp on programming techniques allows service designers to communicate with interaction designers. Furthermore, this knowledge enables them to work out rapid quick-and-dirty prototyping while designing new services, which in turn can come very handy while providing representations and mock-ups to stakeholders. Finally, programming knowledge turns out to be very useful when establishing requirements and features of a service during its planning stage.

The module on User Experience Design for Multi-modal Interaction aims at providing a comprehensive knowledge about user involvement in the design process, always pointing out similarities and distances between approaches and tools that comes from interaction design or industrial design (Holmild 2007). It is designed to train students to research, analyse, prototype and conceptualise design considering all system aspects including the social and cultural contexts of use. Possible touchpoints are also discussed as part of the whole system.

Second semester: services as systems

The second semester focuses on a systemic perspective: when working on the design of a service, the designer cannot just work on that single and specific case, because the service s/he is working on may be an instance of a systemic framework, in which that service will be replicated. This implies that the designer understands the links between the single instance of

the service and the technical components of the system s/he is working with. The systemic approach is therefore developed from the single interaction to the technical system that supports it and to the social system in which the interaction is located.

The modules in this semester are: 1) Distributed systems; 2) User participation and social innovation; 3) Designing the experience.

The first module focuses on the concept of distributed system from 2 perspectives: a perspective referring to computer science and one referred to industrial production. The idea of distributed systems in computer science is used to explore the potential of software solutions that allow networks of computers to communicate and multiply their computing capabilities. This idea is now very relevant for online distributed service solutions, that often use distributed computing capabilities and are often accessible via different devices and operating systems. The idea for this part of the module is to give students a deeper understanding of the way the IT part of distributed services is organized.

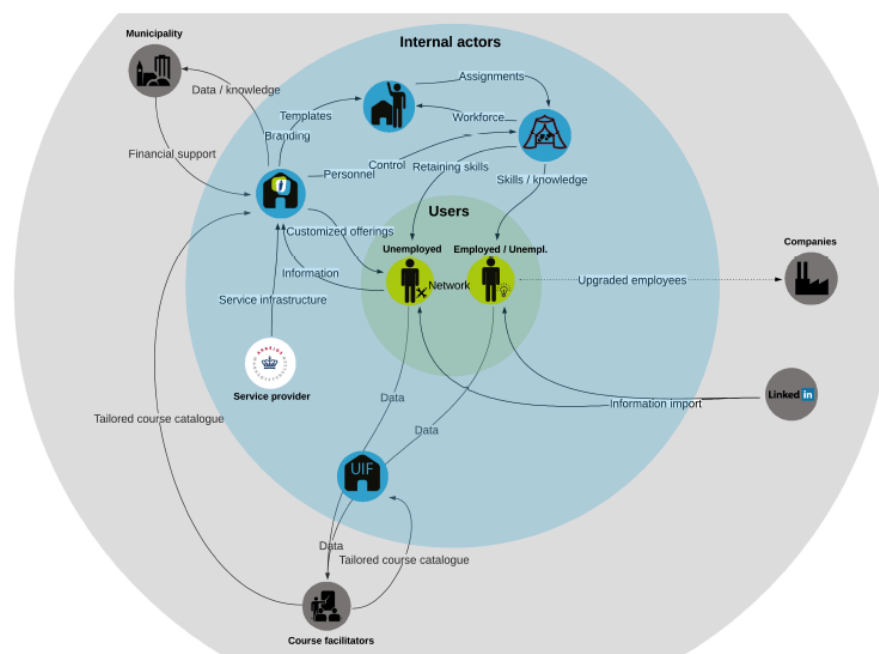


Figure 1 Relationship between actors of a Service for empowering unemployed people (Students: Mortensen, Forss, 2013).

The industrial design component of this module looks at distributed system as a consolidated way to organise industrial production, based on the definition of modular structures that define a product architecture (de Weck, Suh et al. 2003; Utterback, Vedin et al. 2006). This represents a strategy to organise production in a flexible way; in the last decades this strategy created the basis for a high level of customisation in products and services. This is being considered as an emerging approach to the design of complex services in the public and private sector, that are based on open source models and high level of collaboration (Cottam and Leadbeater 2004).

The emergence of new models for the development of public and private services links distributed system with the module on user participation and social innovation. User involvement is at the basis of this module and is a fundamental cornerstone for the master, but in this module this aspect is analysed with a focus on emerging models, based on participatory strategies and open innovation (Cottam and Leadbeater 2004). Students will

work on a methodological approach to those models and explore their potential to generate changes in social patterns.

The need for involving people in the co-design process is very central in this master, this approach changes the role of service designers, from problem solver to facilitator of a design process that involve many actors and different social and cultural backgrounds. For this reason designers have to develop specific tools to represent and propose ideas, concepts and prototypes (Morelli and Tollestrup 2007). According to this approach, the design process is a collaborative activity that should be supported by a common language. This language is often different from the traditional representation language designers use in other disciplines (e.g. technical representations in Industrial Design). The dialogue between actors with different cultural background needs to be supported by colloquial forms of communication, such as video sketching, or experience prototypes which can be used in different phases of a design process to address different communication challenges. This is the theme of the third module for this semester.

The third semester: the business of services

The third semester focuses on the business of service design. Here students will focus on the relevant questions about placing service design in a business framework. The students will work on two theoretical modules on: 1) Strategies and business in services; 2) Industrialising and scaling up services.

The first module focuses on innovation processes in services, emphasizing a design perspective. The idea with this module is to focus on the concept of design-driven innovation (Verganti 2003; Utterback, Vedin et al. 2006). This idea is the ground to explore innovation paths that are not necessarily anchored to functional needs but are rather triggered by new meanings and relevant changes in the way existing meaning are organized.

The module on industrialization and scaling-up of services focuses on another emerging issue: information technology is changing the structure of production and services are now being designed that have high level of personalization or refer to very specific contexts. However this approach does not address the problem of replicating those services beyond their original environment. Can industrial logics be used to support service reproduction? What structure should the service have, to make sure that the solution could be replicated in a different context? Are those new solutions challenging scale-up logic used for the diffusion of industrial products, or for the expansion of major social networks? This module will focus on the organizational structure (Morelli 2007) and the immaterial and knowledge-related components (Rullani 2004) that would allow reproduction and scale-up of services.

Discussion

The progression suggested above, based on logical progression from craftsmanship to industrial services, can be articulated in further layers, that consider the different dimensions of service design, from a technical dimension to social aspects. A map of such aspects, like the one created in Figure 3, would provide a logical and visual frame of the curriculum of this master, however different other dimension (e.g. experience/aesthetic VS organisation) may also apply to the body of knowledge for this master.

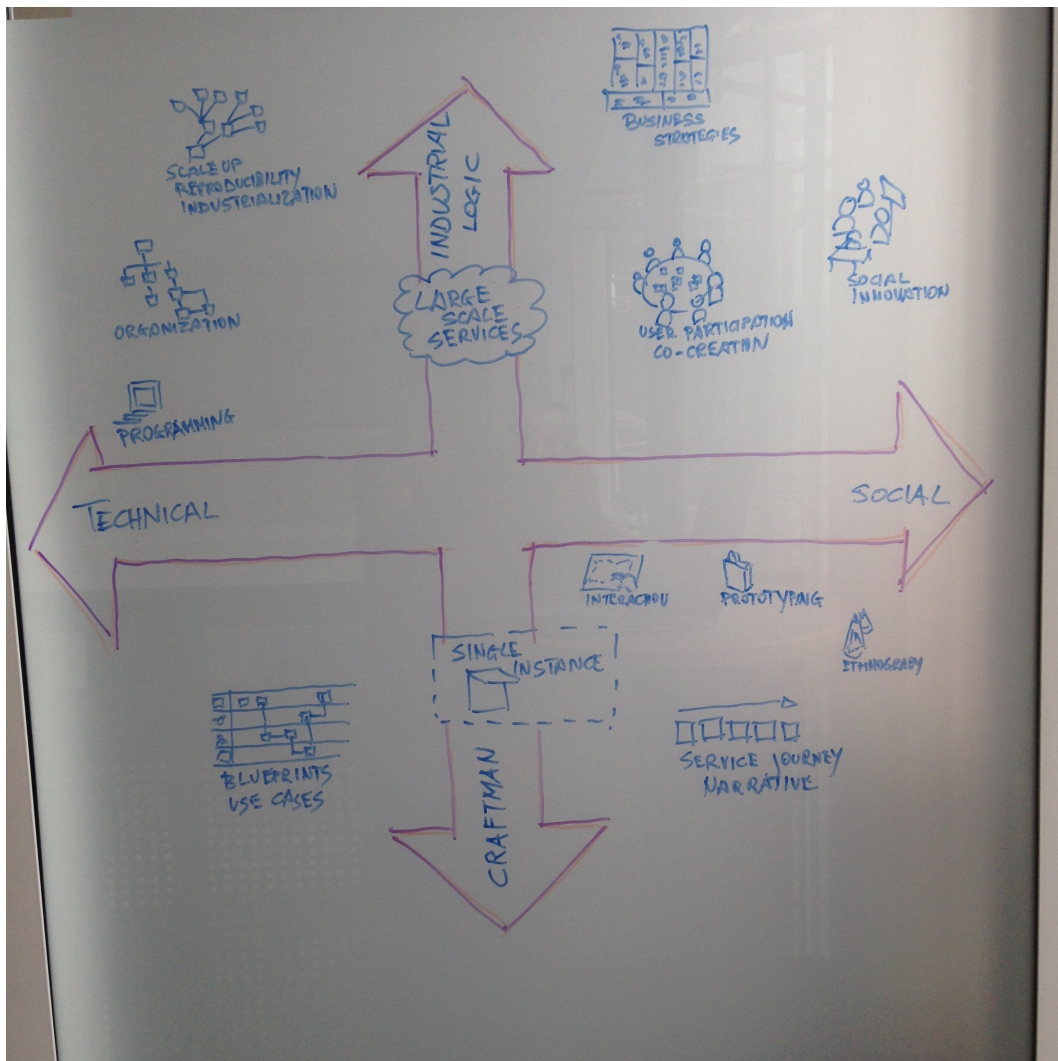


Figure 2 Map of the logical and dimensional aspects of the Service Design Master

The interpretative flexibility of the curriculum could be object of discussion in this conference. It could represent a limitation, because it would not provide a clearly defined profile for the master, but it could also be seen as an advantage, because of its capability to provide a wide range of professional profiles that address a diversified demand for competences within the area of service design. In fact the choice of specific project themes in each semester gives the supervisors and the students the possibility to shape, with a certain margin of freedom, specific professional perspectives. The early semesters of this master, for instance, have proposed projects in collaboration with the public sector, thus emphasise professional aspects related to social innovation, user participation and distributed systems.

Conclusions

The master in Service Systems Design offered by the Aalborg University in Copenhagen faces a number of challenges. Most of these challenges are common to other Service Design education paths around the world. Some of them are peculiar, however to this specific second level degree due to the particular vision that has generated its structure.

Many studies on service design focus on the area of interaction between service and user: the area that is very much on the visible/perceivable side of the line of visibility. This is because several service design studies are strongly linked to interaction studies or experience design. This master is instead framed in an engineering faculty and as such it is an attempt to delve deeply into the analysis of the technical, organisational and systemic implications of the design of services – which encompasses indeed both sides of the line. The two traditions are covering different solution spaces, but the PBL structure, and the strong problem solving orientation it implies, can offer a good ground for bridging the two areas on concrete projects. Of course those projects often reveal the complexity deriving by the influence of knowledge from different disciplines (from engineering to experience design), merging languages and a mix of methodologies belonging to different research area. The challenge of this master is to find paths that define a profile (or different profiles) for tomorrow's service designers.

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Positioning Service Design as Transformational Approach in Education for Sustainable Development (ESD)

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Abstract

Through the review of literature, as part of a PhD research undertaken at Loughborough University, a relationship between Service Design and Education for Sustainable Development (ESD) has been identified. It positions Service Design and its participatory design methodology as an integral change agent within this context. A lack of literature defining such theoretical positioning means that service designers do not have a defined space to operate within nor do they have a view of a broad impact that their action can have. This paper presents findings from the literature review that positions Service Design as a transformative change approach in the context of ESD.

KEYWORDS: transformative change process, education for sustainable development

Introduction

In recent years, service designers have been expanding from working on the periphery of service organisations to working on the deeper level, where they help to develop alternative service concepts and models outside and within organisations (Cottam & Leadbeater, 2004). Using participatory approaches at the deeper level service designers are able to engage with ‘transformational change’ helping services to develop and implement new concepts and service visions (Sangiorgi, 2011).

One of the areas in the public sector that is currently undergoing a shift but has seen minimum engagement from service designers is education. In the last decade education has been experiencing change towards sustainable development, as indicated by UN Decade of Education for Sustainable Development (2005-2014). The vision for change has been set out globally and presupposes transformational shift in thinking, values, teaching and learning processes. However, change in the system has been very slow and incomplete.

During the research a literature review has been conducted in an iterative manner to closely examine how such a vision has been implemented in England, in particular within the primary education sector. Findings from general, secondary and primary sources suggest the mismatch between the depth at which change needs to happen and the processes by which such change is currently being realised. In particular they highlight an existing need for a participatory, outside in approach that will encourage a transformational change at an organisational level. A literature review on Service Design has been also undertaken to develop a better understanding of the area as a new approach to ESD.

This paper presents these findings. In particular it defines a shift in education towards ESD as an opportunity for using Service Design approach at the transformational level. In doing so it outlines the new problem space and identifies service designers as agents of transformational change.

Service Design and Transformational Change

The influence of Service Design within service development has been expanding, from improving service offering at the periphery of the organisations to re-defining models of public services from within the organisation as a response to the increasing complex issues of economic, social and environmental nature (Mulgan & Albury, 2003). Junginger & Sangiorgi (2009) developed an 'orienting framework' to show that the level that service designers work within an organisation correlates with the intended depth of change in the service. If the change does not question the assumptions of the organisation then service designers are likely to work on the periphery of it (ibid). However, if a new concept requires organisational transformation, then service designers will work with the fundamental assumptions of the members of an organisation at the transformational change level. The transformational level is the deepest level of change and it is usually embedded in social systems where the aim is to achieve a vision of change, which is of value to all participants of the system and therefore is realisable (Pedersen & Buur, 2000).

Working at different levels, results in service designers using a variety of Service Design methods (Junginger & Sangiorgi, 2009). At the transformational level, Service Design process can be highly participatory. It also draws on User-Centred Design (UCD) and Human-Centred Design (HCD), co-design and participatory design methods and tools to involve stakeholders in the design process of inquiry and action (Steen, 2011).

Service designers therefore have a capability to be transformational change agents within organisations. This usually takes place when service designers work on issues of public sector and wellbeing (Sangiorgi, 2011). For example, cases can be found within the areas of local governments, local communities and healthcare (Cottam & Leadbeater, 2004).

ESD as new vision for Education

In the context of unsustainable development the need to reorient formal education towards ESD prevails on an international level (Mulà & Tilbury, 2011). The vision is driven by ecological systemic thinking and focuses on new values, ways of knowing, teaching and learning. Theory suggests that the change in how we know will change society to interact with the world in a more sustainable way. In particular, how people know needs to be

extended to include knowing by intuition or through experience and participation (Heron and Reason, 1997). The new type of knowing requires new educational methodology that considers the 'whole person'. This means engaging the learner with one's context and environment where the learner is involved in discourses and practices that are real-life and attending to the complex environmental, social and economic issues (Vare & Scott, 2007).

ESD as new vision for English Education

While ESD has been defined on a global scale, each country defines what ESD means within its own context. In England, within the context of the primary education, some common characteristics of ESD have been emerging:

- » ESD is unique to an educational institution and needs to happen across the whole institution (Reed, 2009). Change occurs across all elements of organisation (culture, ethos, leadership, and curriculum);
- » Pupils, staff and the organisation value sustainability and express this value in an active engagement in the ongoing development process (Sterling, 2011);
- » Leadership is set between personal authority and distributed leadership (including pupils, staff and community) (Reed, 2009).

Therefore the new vision of ESD in primary education institutions in the UK may be summarised as: *the change in the pedagogy integrated with deep change in organisation*. Change in pedagogy means change in how the user, pupil, is being engaged in a learning process. This shift needs to be integrated with the change in a whole organisation (including students and other school stakeholders) that occurs on a transformational level attending to individuals' and organisational values and vision for sustainable future.

Implementing new vision in English primary education system

The relationship between the outcome and the process of change suggests that identifying what the change might be clarifies the particular of the change process (Van de Ven & Poole, 1995). The change process towards ESD should seek to support all of the elements of the abovementioned ESD vision. This means the change process needs to be participatory, user and human-centred, focusing on changing individuals as well as organisations. A closer look at the change processes undertaken by the government and NGOs up to date suggests that they do not fully facilitate change as defined by ESD vision, which may explain the slow and incomplete shift towards ESD.

ESD and Change Processes in English Educational System

To better understand change in the English primary education system it should be recognised that change within social systems may happen in different ways: rational – empirical, power-coercive and normative re-educative (Kennedy, 1987). The first two strategies occur in one-direction, either those in power forcing others to change or the information is provided to the people who need to act on it based on rational decision making. Change in the third strategy is discovered, developed and adopted collaboratively with participation from all those affected by change, making a decision on its degree and manner (ibid.). Main strategies for this change are collaborative problem solving, redesign

and restructuring of the social system, and personal growth and development of system members.

The review of strategies in England applied to create a shift in primary education towards ESD reveals the first two strategies to be given priority. The English government focused on power-coercive strategies as it developed a Sustainable Development Action Plan for the schools to follow (SDC, 2005) and updated formal curricula to include sustainable development as one of cross-curriculum dimension (ibid). The motivation for schools to comply with such top-down change strategy would come from the interest of each school to be recognised as an effective educational service provider or take a chance of being deemed a 'poor' service provider and therefore run a risk of being closed down. Yet, the government did not use sanctions to implement this change, and therefore schools felt no urgency and lack of organisational motivation to undergo a shift.

The rational empirical approach based on 'best practice' applied by NGO's has seen some success (Wals, 2009). Yet it has also been demonstrated that most change is carried out by few individuals within a school, rather than the whole school and is limited to NGO's fixed value rather than developed based on the needs of the individual school (ibid). Normative re-educative strategy was found to have least evidence in literature yet its description with a focus on participatory processes suggest that it is the type of strategy that would most likely lead to the development of the abovementioned characteristics of ESD in English educational institutions.

In recent years there is some work is beginning to take shape that may be said to be in accordance with this strategy. This research identified three tools, 'Pathways' (WWF-UK, 2011), Sustainable School Self-evaluation (S3) (DCSF, 2006), and Leading for the Future (LfF) (Blair, 2011) developed by WWF-UK for this purpose. These are participatory action research tools that seek to help schools and individuals to engage in normative re-educative change process towards ESD. 'Pathways' and S3 are practical guides to sustainable development, aim to help schools to "plan, monitor and evaluate [their] action" (WWF-UK, 2011: 5). Whereas LfF focuses on stimulating deep reflection about self and values in school leaders outside of the usual environment in 'hosted spaces' (Blair, 2011).

Although there is no known evaluation of these tools being used, close examination undertaken during this research shows that there are limitations within their individual designs in relation to the intended change as defined above. A review of the tools shows that no tool considers all the necessary elements for ESD change to take place within a school. Only one tool (ex. Pathways) considers the holistic *process of collaborative problem solving*, whereas the other two (S3 and LfF) focus on one or two stages within it. None of the tools support the change process *where norms and values of both individuals and organisation* are considered together focusing either on one (ex. LfF) or the other (ex. Pathways). In addition, these tools do not support participation or the voice of all school stakeholders, favouring change process to be led by some individuals rather than the whole school. As noted in *Pathways* tools "your pupils will probably not be involved in the *Pathways* activities" (WWF-UK, 2011, p. 5). These tools, whilst developed directly at service providers, do not allow them explicitly define student's voice, relying on the change process to incorporate students' voice implicitly. It may be suggested that engaging with these tools may lead to the change process that is incomplete or continues to stay on the 'periphery'.

Lastly, these tools also presuppose that schools will initiate and drive change towards ESD voluntarily. However, recent research by Snell and Brooks-Wilson (2012) concluded that

schools that have taken limited action towards ESD up to date will not be inclined to initiate change on their own due to diverted interest from the government. At the same time, it has also been recognised that in the face of the sustainability crisis, the need to create such change is urgent and therefore requires processes of facilitation and enabling (Tilbury, 2011). The absence of tools and practices that will facilitate normative re-educative change process from the outside-in, as this paper suggests, may be an opportunity for Service Design.

Discussion

The review outlined above considered current strategies and tools used to help schools to move towards ESD and concluded that an alternative approach, which has characteristics of normative re-educative change but is also facilitated from the outside-in, is needed. Service Design is an outside-in approach that enables change, and its tools and methods support the participatory and collaborative strategies that are integral to normative re-educative approach.

The problem space identified in this paper presents an opportunity for Service Design as a novel approach to ESD. As noted above, service designers have been working in defining new models and configurations of public services such as contributing to the shift in NHS from 'provider -centred' to 'patient-centred'. ESD vision requires a change in educational service from current state to a more collaborative, participatory and value driven model that aims to fundamentally change user experience. This vision is transformational and therefore aligns with the type of problems that Service Design has experience working with.

In addition, Sangiorgi (2011) has brought attention to the topic of Service Design and transformational change in what the author calls 'transformative design'. In this space service designers work with principles such as 're-distributing power' and creating 'active citizens' (ibid). These principles closely relate to the end goal of ESD such as distributed leadership and participation of students and staff with regards to sustainability issues. This correlation between principles and outcomes further shows the appropriateness of the Service Design approach in this problem space. ESD vision needs a supportive change strategy, and this paper presents Service Design as an alternative approach to the abovementioned normative re-educative tools.

Conclusion

This paper positions Service Design as transformational change approach in the context of ESD. Unlike some of the tools reviewed in the previous section, Service Design supports a holistic, collaborative problem solving process of inquiry and action and the tools and methods that are fundamental to Service Design are based on principles of user-centeredness, human-centeredness and systemic thinking. This means Service Design is a process that can support a shift in values, vision, and participation at the level of a whole organisation which includes participation and voice of the main user. This potentially closes the gap in a change process as defined in the previous sections.

However, for service designers to engage with the change process an understanding of system's elements it seeks to design or redesign is needed (Steen et. al, 2011). This gap in

knowledge has been identified due to lack of literature within Service Design on the subject, which is one of the areas where future work of this research seeks to contribute.

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Transforming Student Services in Higher Education

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Abstract

At Cork Institute of Technology (CIT), there are many disparate actors, systems and processes involved in service delivery and too often employees work in silos with little or no understanding of the personal impact of the student journey. Traditionally in large organisations, the focus is often on the technology implementation while ignoring the importance of people and processes.

As part of CIT's plan to transform and streamline services for students in a higher education institution, a pilot project was initiated to re-design some key business processes within the student lifecycle. The design of services is well-documented; however there is a lack of research in regard to an inside-out service design approach used to transform the student experience in higher education. CIT have discovered that focusing on the on-stage and back-stage functions of the employee experience is just as important as the student experience in order to deliver great services.

KEYWORDS: transform, higher education, student services

Introduction

CIT is a publicly funded higher education provider. It is the largest of Ireland's network of thirteen Institutes of Technology and currently has in the region of 15,000 registered students with approximately 2,000 new entries year on year. CIT's education, research and training provision spans a wide variety of disciplines, from business and humanities through engineering and science to music, drama, art & design.

In 2011, Senior Management at CIT requested a review of current IT systems and a proposal for integration of the same. The problems that existed included issues with data quality &

timely availability, lack of online student self-service, isolated enterprise applications, disconnect between academic business process and the IT solutions needed to support them.

RECAP, Review and Enhancement of CIT's Admissions Processes, was a project initiated in February 2013, and used a service design approach to review a section of the student lifecycle from offer accepted to in class, ready for learning, and proposed short, medium and long-term changes, the short-term were implemented for September 2013. The analysis initially focused on new part-time students but changes were implemented, where possible, for all student cohorts.

Service design as an approach, where the end-user is the main focus and co-producer of the service, is a relatively new concept to the higher education sector. In the current climate, it is not so much about the product, but how the user interfaces with it that matters. CIT have piloted service design techniques to review the student experience in a higher education institution.

During this recent pilot project, it was realised that the culture and people transformation that needs to be considered when implementing service renovations, is no small task and should not be under-estimated. Employees at the front-line of a service can often be buried under the paper shuffling of a process without having any understanding of how their processes interact with other processes throughout an organisation.

RECAP – Review & Enhancement of CIT's Admissions Processes

The RECAP project planned to make some of the services delivered by CIT's Admissions Office more useful, usable, efficient and student-centred. The project was focused on reviewing the student lifecycle from *offer accepted* to *in class, ready for learning* and making improvements where required.

A Project Governance Group was setup to provide top-down support to the project, made up of key members of the senior management team. A project team was created which included front-line and back-office staff, and two student interns were employed for the summer period to work on design and communications. CIT actively sought input from all key stakeholders, including front-line employees and students, as designers and co-producers of the service experience from the end-users' point of view.

An inside-out design approach was used in this project in contrast to a typical approach of using an external consultancy. This could be seen as one of the most important aspects of the project as this is not a once-off project but a new approach to embed design thinking in a higher education institute for the first time in Ireland, as a series of iterative change projects. The employees themselves must become designers if design thinking is to be the future at CIT.

New tools were introduced to stakeholders and were well received and understood. Initial interaction at workshops was slow but improved later during the customer journey mapping and ideation workshops when users became more collaborative and focused on the common goal of a positive student experience. Our innovative approach to break down barriers was, to engage these stakeholders to draw up a service design blueprint, viewed entirely from the end-user perspective. The use of service design techniques—in particular, service

blueprinting — can support this service view and aid in innovating and transforming the student experience within higher education (Bitner et al., 2012). The *touchpoints* were analysed and using swim- lanes, all front and back stage operations were identified and the interoperability of the nature of the service was laid out, perhaps for the first time, in its entirety.

The *Discover and Define* phases of the project identified problems, opportunities and user needs, gathered evidence, brainstormed and conducted interviews with key stakeholders. Mystery shopping was used to assess the existing service as well as observation techniques and student diaries.

For the *Develop and Deliver* phase of the project, an Action Plan was produced, with 17 short and 10 medium to long-term actions. Owners were assigned to each action. Some examples of service improvement included a new campus map, improved signage, extended opening hours for key student services such as the Admissions and Fees offices, start-of-term induction for Heads of Department, a briefing session for department secretaries and a new induction process for part-time students. Student personas were created to help employees *walk through* the new service delivery. How-to videos, which received up to 10,000 hits, were created for all stages of the process and included in a QuickStart Guide for new students.

Culture @ CIT and the Employee Experience

Cultural transformation is a non-linear process and that culture will only change after people's actions are altered, after benefits have been observed for some period of time and after people have seen the connection with the change (Kotter, 1996). It was recognised that some CIT employees did not understand the purpose of the RECAP pilot project and simply did not understand the meaning of the term *process* and their involvement in this process. It is important for employees to understand why the change is happening but also to understand what that change will mean for them. If they understand that the change will ultimately improve the student experience but also impact their day-to-day jobs in a positive way, then they are more likely to embrace the change. Spending time to understand a culture can open up new innovation opportunities (Brown, 2009).

Process streamlines workflow so a team can be more effective. When clear and defined processes are in place everyone feels better and more confident in their work. The analogy of a *cog in a wheel* can be used to describe a person or thing, playing a small part in a large organisation or process. Service design has assisted CIT, from frontline employees to senior management, to understand that all the cogs in a service should be working in harmony and not in isolation as individual cogs. As providers of a service, employees at CIT need to understand their cog and all the other cogs that are part of one cohesive process, and the impact this has on the *customer* who should see a seamless series of touchpoints.

In her blog post, Gleneicki (2013) asks if employees are forgotten in the heat of customer experience design efforts, stating that what we fail to acknowledge is that the people behind the delivery of that customer experience must come first. Employee ownership and a sense of pride in their work will directly relate to the customer experience. If we fix the people and culture issues first, then customer experience will follow. In a similar post Gleneicki (2012) talks about the *right culture* and defines culture as a set of values, beliefs, underlying assumptions, attitudes, and behaviors shared by a group of people. It's *how we do things around here*. Culture should allow employees to be creative and come up with new ideas, it should

almost be part of their day-to-day job and it will empower them to do their jobs better, which in turn leads to a better customer experience.

According to Smith & McKeen (2003), culture is extremely hard to change and exerts its influence in different ways. Although employees and students were involved in a number of workshops to co-create service improvements for students, there was still a missing piece of the jigsaw; the employee journey needs to be mapped to understand the on-stage experience and how this directly relates to *customer* experience.

After reflecting on the pilot project, it was agreed to host a workshop with key front-line employees to brainstorm and ideate around the entire Admissions process and the current bottlenecks that are experienced by employees, on-stage and back-stage. As the organisation evolves, as new people come and go, as the experience improves, and as the culture shifts, the map will continue to evolve. The employee journey map facilitates a culture transformation (Kramp, 2012).

Conclusion

At CIT, each stage of the student lifecycle, from prospect to alumni, is treated as distinct separate interactions and the flow of the student and their experience through the lifecycle has not been considered from a service point of view until now. Each business unit works to provide a service to a student at that particular point in time without considering the overall *customer* experience. Many students are directed from one *helpdesk* to another and wander around campus in a confused state. Further research will endeavour to review the entire student lifecycle in segments, using a service design approach. It will attempt to change the student experience by delivering services that are more customer-focused. It will analyse the current *as-is* process, highlight the problems areas and inefficiencies and design a new *to-be* process, all the time focusing on the student experience. While the student is referred to as the customer, academic and administrative employees are also customers of these services and the next phase of the project will set out to provide a more streamlined and simplified experience for all. The focus will be on removing complexity and uncertainty from existing processes and procedures and using empathy to understand the experience of all involved.

CIT are currently working to formalise and define a Student Lifecycle to be used as a building block for refining internal processes and allowing us to continually make the services we deliver more student-centric.

RECAP was a six month pilot project at CIT which has proved that service design as an approach can help us to improve how we do business with regard to the services we provide to our *customers*. As a follow-on from the RECAP project, the next phase of the student lifecycle transformation will look at existing culture and *how we do things around here* at CIT. A parallel project will analyse the applicant stage of the lifecycle, with the focus on automating the application process for all prospective students and making their initial interaction with CIT a positive one.

It is important to mention that an inside-out design thinking approach needs to be embedded in the organisation but this will take some time. Confidence will come from small successes like the RECAP project.

The people and culture aspect of the initiative will require further research and effort. Service design iteratively moves from designing intangible experiences to designing the tangible

elements that enable the desired experiences to occur in a coherent way (Sangiorgi, 2009). During the RECAP project, the focus was on the student experience, while maybe not placing enough emphasis on the employee experience and the importance of those providing key services. An employee journey map needs to be developed over time and if the on-stage employee experiences can be improved iteratively then a better *customer* experience can be guaranteed in the future. Employees are the lynchpin of great customer experiences. Employees who are motivated, empowered and enabled with the information, tools and technology they need to deliver on the brand promise can make or break the customer experience (Hostyn, 2013).

The higher education sector needs to consider the deficit in an overall approach to the actual student lifecycle and the supporting of same. The current complexity of the processes is painful for all involved, in particular, front-line employees and students, and there is a lack of cross-functional communication. There is a need to understand the service before introducing products into the service. CIT needs new ideas and a fresh approach where previous attempts to re-design processes have failed.

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Customer journeys: Involving customers and internal resources in the design and management of services

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Abstract

The customer journey approach is increasingly being taken up by practitioners and researchers to support the design and management of services. As part of this approach, customers and internal resources are often involved as contributors of input in design and management processes. In the current literature on customer journeys, a broad variety of involvement practices has emerged. No coherent framework has been proposed to structure these practices. In this short paper, we provide an overview of the different purposes and implementations of emerging involvement practices with the customer journey approach. We then contribute a simple framework for these practices, where we classify involvement according to its purpose, implementation, and output. Finally, we point out future research needed to further develop the ways customers and internal resources are involved within the customer journey approach.

KEYWORDS: Customer journeys, service design, customer involvement, methods

Introduction

The customer journey approach has generated much interest in fields concerning the design and management of services. In a recent McKinsey report, Stone & Divine (2013) argue that the customer journey approach represents a needed paradigmatic shift in how we understand a customer's experience of a service. Zomerdijs & Voss (2010), in a study of successful experiential service providers, found customer journeys to be widely used in the design and management of services. Likewise, Segelström & Holmlid (2009), found customer journeys to be a prevalent approach to structure early phase user research in service design projects.

A number of practices have emerged concerning the involvement of customers and internal resources, that is, personnel internal to the service provider, in customer journey work. Such involvement is conducted for a wide range of purposes and conducted in a variety of ways, such as, for example, the mapping of customer journeys with customer representatives (Croiser &

Handford, 2012), the mapping and redesign of customer journeys with company internals (Wechsler, 2012), the co-design of customer journeys with customers (Kankainen, Vaajakallio, Kantola, & Mattelmäki, 2012), and the measurement of customer satisfaction for key customer journeys (Rawson, Duncan & Jones, 2013). This variation in purposes and involvement practices reflect the versatile character of the customer journey approach. However, in the face of such variation, a framework is needed to get an overview of the different purposes and implementations as well as to foster a common understanding of how the involvement of customers and internal resources may be conducted within the customer journey approach.

In this paper, we provide an overview of involvement practices that has emerged within the customer journey approach. On the basis of this overview, we provide a simple framework to systematize these practices. Finally, we use the framework to highlight needed future research.

The presented overview springs from a systematic literature review of customer journeys in the scientific literature, a preliminary version of which is presented in an open technical report (Følstad, Kvale & Halvorsrud, 2013). Due to space limitations we do not go into detail on the review here. The interested reader is referred to the technical report.

What are customer journeys?

The concept of customer journeys has been used, at least since the early nineties, to describe services from the customer's point of view (Whittle & Foster, 1991). Even so, the literature on customer journeys is still in its emergence, though some key works (Parker & Heapy, 2006; Voss & Zomerdijs, 2007) have made a marked impression on the field. Stable definitions and uses of key customer journey terminology are yet to be established (Følstad et al., 2013).

In the literature, a customer journey is seen as the process that a customer goes through to reach a specific goal, that involves one or more service providers (Følstad et al. 2013). Customer journeys are typically detailed as a series of touchpoints or interactions between the customer and the service providers (for example, Clatworthy, 2011; Stickdorn & Zehrer, 2009). The importance of a customer journey perspective increases as the complexity in service provisioning increases, for example, when services involve multiple touchpoints for which different organizational units are responsible (Wechsler, 2012).

Overview of involvement practices within the customer journey approach

A variety of practices for involving customers and internal resources in the analysis and design of customer journeys is described in the literature.

For example, involvement practices to support analysis, that is, the gathering and processing of data concerning existing customer journeys, are much reported. Proponents of such analysis are, for example, Croiser & Handford (2010) who, on the basis of data gathered from customer observation and interviews map customer journeys as they are experienced by their participants. Or, for example, Wechsler (2012) who describes workshops with internal resources for collaborative mapping of touchpoints and customer journeys. The mapping of customer journeys typically has an exploratory character, with qualitative methods for data collection to allow for surprise insights.

The analysis of customer journeys may also concern quantitative measurement of the customer's experience. In the scientific literature, such measurement is typically conducted as part of the mapping process to quantify changes in experiential quality during the customer journey (Trischler & Zehrer, 2012). However, measurements of customers' experiences during a customer journey may also be conducted on a routine basis, without being associated with an ongoing mapping process (Rawson et al., 2013). Quantitative measurements are, for example, implemented as questionnaires.

The customer journey approach also encompasses involvement practices targeting the creative phase of the design process, in particular, through co-design activities. Clatworthy (2011) describes, as one of the purposes of the AT-ONE service design method, how internal resources may be engaged in the co-design of services through deliberate rearranging the sequence of touchpoints in a customer journey map. Kankainen et al. (2012) report on the use of customer journeys for co-design, where customers formulate "dream journeys". The co-design activities reported by Kankainen et al. and Clatworthy (2011) were conducted as creative workshops. Such co-design may be integrated within involvement processes that also encompass analysis. For example, the AT-ONE method covers mapping and idea generation (Clatworthy, 2011).

In general, two distinct groups of participants are involved in analysis and design activities within the customer journey approach: Customers and internal resources. Interestingly, quite a few studies in the literature only concern one of these groups; either internal resources (for example, Clatworthy, 2011; Wechsler, 2012), or customers (for example, Crosier & Handford, 2012; Trischler & Zehrer, 2012). However, as argued in the HM Guidelines on customer journey mapping (HM Government, 2007), these two participant groups may contribute complementary insights. When comparing mappings of customer journeys as they are expected by internal resources to mappings of journeys as they are experienced by the customers, important gaps (Bitner, Zeithaml, & Gremler, 2010) in the service provisioning may be discovered, which in turn may generate suggestions for improvement in the service delivery process.

A framework for involvement practices within the customer journey approach

The variety in the emerging involvement practices within the customer journey approach may be confusing. To improve our understanding of these practices, and thereby support their further evolution, we suggest a simple framework as a structure against which to map current and future practices. In this framework, we structure involvement practices according to three main dimensions: Purposes, implementations, and output. The purpose concerns the objective of the involvement practice. The implementation concerns its practical arrangement, in particular in the form of participants and methods. The framework is presented in Table 1.

The purposes of involvement practices may broadly be distinguished as concerning analysis and design. Analysis practices include mapping and measurement. Co-design practices may or may not be associated with analysis.

The implementations of involvement practices concern participants and methods. Within the customer journey approach, emerging involvement practices target customers, internal resources, or both. The methods used for involvement of customers and internal resources include qualitative methods for mapping or co-design, and quantitative methods for measurement. The qualitative methods may target individuals, such as interviews and observations, or a collaborative setting, such as the workshops for mapping or co-design.

The output of involvement practices depends on their purpose and implementation. Choosing an adequate involvement approach require knowledge of the output to be expected.

Purpose	Participants	Method	Output	Example refer.
Mapping	Customers	Qualitative - individual	Journeys experienced by the customer	Croiser & Handford (2012)
	Internals	Qualitative - collaborative	Journeys expected by the service provider	Wechsler (2012)
	Both	As above	Gap - expected vs. experienced journey	HM Gov. (2007)
Measure-ment	Customers	Quantitative - when mapping	Satisfaction - during journey	Trischler & Zehrer (2009)
		Quantitative – routine	Satisfaction - at journey level	Rawson et al. (2013)
Design	Customers	Workshops	Ideas from customer needs	Kankainen et al. (2012)
	Internals	Workshops	Ideas from knowledge of possibilities	Clatworthy (2011)

Table 1: A framework for customer journey involvement practices

Implications for future research

The presented framework allows us to point out areas for needed future research. We will in the following address three such areas.

Efficient customer journey mapping: Different practices have emerged to involve customers and internal resources in the mapping of customer journeys. However, there is a lack of research concerning how these two participant groups should be involved in a coherent process to efficiently identify gaps between customer journeys as expected by the service provider and customer journeys as experienced by the customers. Such research may, for example, be important for customer journey mappings to generate awareness concerning customers' experiences within the service provider.

Fully integrated mapping and redesign processes: Although some authors have suggested processes that integrate mapping and redesign of services with internal resources (for example,

Clatworthy, 2011), there is still a lack in processes that fully integrate mapping and design with both internal resources and customers. Possibly, such a process could have as its pivotal point a gap analysis for the expected vs. the experienced customer journey.

Adequate measures of customer satisfaction: Customer satisfaction is currently measured on the level of touchpoints or journeys. However, we lack knowledge concerning how these two levels of measurement may complement each other. This is an important field of future research as it may be far more challenging and resource demanding to collect satisfaction measures for each relevant touchpoint than for the complete journey.

We hope that the simple framework and future research needs presented in this paper may motivate a continued interest in the development of customer journey involvement practices. Such development is important for customer-centric service design and management.

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Service archetypes, a methodological consideration

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Abstract

In practice based research, especially when working with non-research organisations, sometimes researchers face challenges related to the willingness of participants to openly share experiences outside the realms of the project. As a consequence, there are methodological challenges with showing results, and working with knowledge verification. In this paper we suggest that some of these obstacles might be dealt with by using service archetypes. These form a neutral basis on which the developed design knowledge may be applied.

KEYWORDS: service archetypes, design research, communication, verification

Introduction

Practice based and constructive design research (Koskinen et al 2011), where research is set in, or an integrated part of, actual design and development practice, is central in developing local as well as generic knowledge. On a general level this poses challenges on methodology, theory construction, methods and activities of practice and research, as well as knowledge representations (see e.g. Höök & Löwgren, 2012).

At a more specific level the challenges are more intertwined. To start with, there is the willingness of participants to openly share experiences outside the realms of the project. It is not uncommon that organisations are unwilling to share because they believe it will highlight and expose shortcomings of the organisation. Nor is it uncommon that organisations are unwilling to share because they believe that it would expose and uncover their means for gaining competitive advantage. Other challenges are of a methodological nature. In the scientific discourse of design research we have equipped ourselves with methods and techniques that make it possible to perform and understand studies that are based on single cases, design experiments, interventions, and studies of our own design practice (Koskinen et al, 2011). In other research areas these methods are not so common, and might even be viewed as inferior in terms of explanatory or reasoning power. Practitioners outside the specific project, that

we as researchers ultimately target with the knowledge developed, might have difficulties transferring knowledge from one case domain to another. Sometimes even participants in specific projects might find it difficult to transfer the knowledge developed into the communities of practice of which they are a part. However, the strengths of these methods are the thick descriptions, the reflective nature of understanding, and their theoretically founded verification.

In this paper we suggest an approach for design research in service settings where service archetypes can be used as a means to provide 1) a neutral way of communicating research results, 2) a baseline-set for verification of knowledge developed in specific cases, and 3) a platform for describing the applicability of research results beyond the specific cases in the research project.

What is a service archetype?

We suggest that an archetype service is a service that articulates a selection of service features. That is, one archetype service will typically highlight a small set of service features, and a set of such archetypes will together cover a wider range of features. Different approaches might be used to define the archetypes.

One approach is to use analytic frameworks, to define the variation of archetypes. Such frameworks might be the 7P's from marketing, the defining characteristics IHIP, the defining elements of the service blueprints, or factors for choosing educational cases (Booms & Bitner, 1980; Holmlid, 2012).

Alexander's pattern language approach can be viewed as a way of keeping a catalogue of archetypes. The pattern language is based on an architectural knowledge and experience of spaces and usage. These have transferred into software development, and have become a central tool in developing common languages within software development projects, as well as across such projects. (Alexander 1977; Dearden & Finlay, 2006)

In interaction design, one well-known archetype technique used is personas. These are rich goal-oriented descriptions of archetypical users of a system. They are based on studies of actual people, and it is seldom that the full range of goals and attitudes can be captured in one personae. The repertory grid technique is used to differentiate between different archetypes, and a small set of personas can then be used as a means of spanning a wider variation. (Carroll, 2000; Grudin & Pruitt, 2002)

Another approach is to use genres. A genre is a convention that regulates that the producer of e.g. a movie and the consumer of that same movie understand what kind of movie it is. The idea of genres has travelled from the arts into organisational theory as well as design (Swales, 1990; Yates & Orlikowski, 1992).

As can be seen from these conceptions of archetypes, there are several variations to the theme. Some are grounded in analytic frameworks, some are based on designer's experience of the underlying phenomena, some are based on deep empirical understanding of that which will be made archetypes of, and some are based on conventions. In this paper we assume a position where it is the project participants' understanding of the underlying phenomena that directs the archetypes.

Choosing archetypes

Choosing what kinds of archetype services that will be used in a project is important (Holmlid, 2012). Given that there might be different, or combined, reasons to use service archetypes this would guide the first decision. Will they be used for communication, for verifying results and/or for showing transferability of results? In the first and last case it would be important that archetypes are easy to use in communication with the intended audience. In the middle case, it would be more important to choose a range of archetypes that show similar features as the services in the research project, as well as services that are extreme in relationship to the features of the services in the research project.

Service archetypes in a design research project

In this project the focus is to develop terminology and visual support for specifying new services and describing existing service performances, there has been a decision to use a small set of service archetypes. The archetypes were chosen to be used for neutral communication, and for verification of research results. That is, they needed to be simple to communicate across project participants, as well as exhibiting feature combinations that the cases in the project might not. The research project works with two cases, one e-trading case and one energy case. Some features of e-trading that have been identified are that it is consumer oriented, that it uses limited physical resources, that there is a relationship with logistics. In the energy case some features identified were that the service is performed through multiple actors, that it is an ongoing service with some reoccurrence. The chosen archetypes then were:

- » Going to the movies (features: consumer oriented, event, experience, social, limited time);
- » Tax reporting (features: public service, limited physical resources, yearly reoccurring);
- » Retail purchase (features: public space, consumer oriented, logistics, repeated one-off);
- » Air travel (features: consumer oriented, transport, multiple actors, extended time, limited space);
- » Distributed elderly care (features: multiple actors, health focus, physical resources used, private space, ongoing).

As an example of an archetype we show *furniture retail*, using the visual support developed in the research project. There are some assumptions made in the example:

- » That the customer has gone through some processes in deciding to buy furniture (e.g. seen advertisements, the need for new furniture, etc.), and travelled to the store;
- » That the furniture the customer wants is not available in the store and has to be ordered.

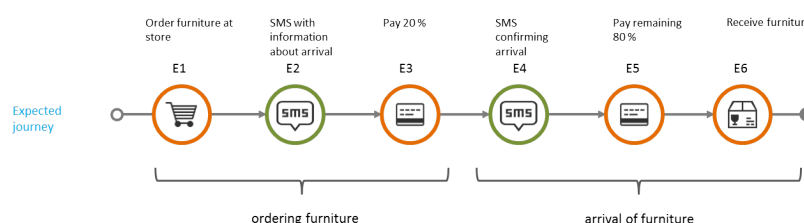


Figure 1 The expected customer journey for retail purchase.

Figure 1 shows the service as intended, the so called expected customer journey for a service performance. Figure 2 shows the service as it happens, the so called actual customer journey.

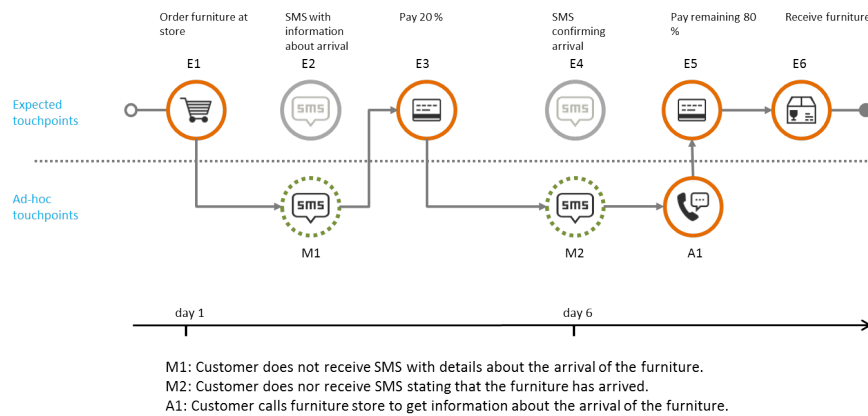


Figure 2 shows an actual customer journey for retail purchase, where the customer does not receive the SMS with details about the arrival of the furniture (M1), nor the SMS stating that the furniture has arrived (M2). The customer therefore calls the furniture store (A1) to get information about this issue.

This use of an archetype does not reveal the actual project participant, and it highlights the knowledge developed based on differences between expected and actual journeys.

Discussion of service archetypes

In this specific project the goal is to develop terminology and visual support for service design. The archetypes were chosen mainly to be used for neutral communication, and for verification of research results. The archetype services were easily rendered with the knowledge about terminology and visuals developed from the real cases. The archetypes seem to be able to work as communicative devices about the knowledge developed without the risk of exposing specific knowledge about the participants of the project. As a consequence this allows the archetypes to be used to show the results, and the knowledge developed of a project to other organisations, which might even be competitors to specific stakeholders in a project. This increases the possibilities of spreading research knowledge in a swifter and quicker manner. Moreover, the archetypes are quick ways of communicating generic and transferrable knowledge developed within the project, and create a common ground to discuss the actual knowledge developed without getting caught in details specific to a certain case. In the toy example all participants can relate to expected and actual customer journeys.

When it comes to using the archetypes to verify knowledge developed, in the specific case this seems to have been working fairly straightforward. The terminology developed could be applied directly to the archetypes, as were the visual support. There was also an added benefit from using the archetypes. Some issues with the terminology and the visual support were identified through applying it to the archetypes, which had not been identified in the project cases, and solutions could then be suggested.

Challenges for service archetypes

A potential role for archetypes that we see might be possible to develop is with respect to knowledge development in itself. There are three levels here. The first level is to use the archetypes solely for application of knowledge on the archetypes. The second is to use the archetypes to identify missing knowledge, confusing knowledge, and knowledge that is not general enough. The third level is to use the archetypes as a development test-bed, meaning

that not only are knowledge gaps identified, but solutions and knowledge are then developed on the archetype as cases in themselves. The first and the second are unproblematic in relationship to using the archetypes for verification, whereas the third would be counter-intuitive for this purpose.

Another research topic that might be pursued, relate to how archetypes are construed and how they are chosen. Can archetypes e.g. be construed in the same manner as personas, instead of being based on the judgment and experience of the project participants? Moreover, the deliberate choice of archetypes in relationship to a project would need descriptive manners of features of services. Can such features be described, and is there a common language that can be used or developed to make such variation easier to achieve? Finally, when using archetypes, what are the benefits of feature variation? Are the borderline features important to work with, or is it sufficient to focus on similarity variation?

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A research framework for service evaluation

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Abstract

The authors propose a reflection on service evaluation research and practice starting with the assumption that the evaluation process in the service field is still a fragmented and controversial issue. The paper describes a first attempt to build a research framework targeted to better understand which can be the role of evaluation in the service lifecycle (from a design to a release phase). The final purpose is thus to propose a service evaluation overview by mapping existing theories and tools coming from different service-related disciplines and to outline an in-progress interpretive theoretical model.

KEYWORDS: service evaluation, service innovation, evaluation approach, service model

Introduction

What does it mean to evaluate a service? How it can be evaluated and which are the tools available? Who are possible beneficiaries and what are the possible benefits? Reflecting on these questions, this paper briefly illustrates the complex topic of service evaluation through work-in-progress of a doctoral research project. The purpose of the research is to reflect on the relevance of service evaluation and its potential impact on service innovation processes, mainly focussing on the evaluation system, the beneficiaries of evaluation, the service lifecycle phases and the service elements that could be evaluated. Some considerations for the role of service design in this emerging field will be outlined, starting from the idea that designers are no longer expected to confine their skills to the creative process but can apply their knowledge across a wider range of strategic and management activities (Kimbell, 2009).

Brief overview on service evaluation

Evaluating basically means making a judgement. It is a fundamental cognitive function of individuals and organizations that allows understanding what works (or not) about activities, performances, programs and projects in order to replicate or refine them (Bezzi, 2007). In a

social environment, evaluation deals with *planned* social mechanisms and their operating principles (Bezzi), thus considering the role of the *evaluator* and the interrelationship between an action and its context of performance (*situated action*) (Suchman, 1987). Moreover, it ideally allows measuring the merit, worth, or *value* of what is being evaluated, supporting decision-making processes (Scriven, 1991). In social life, this value can have several interrelated dimensions, such as moral, aesthetic and economic (Aspers & Beckert, 2011). Each dimension uses a different scale and there is no *exchange rate*, possible translation process between them (Weber, 1978).

What about evaluating services? Today, services are completely different from those of the 1950's, when the so-called *service society* and *service economy* began to arise. In the last two decades service marketing studies have undercut the validity of the IHIP paradigm stating that services differ from products because of their intangibility, heterogeneity, inseparability, and perishability (Lovelock & Gummesson, 2004). Going beyond this paradigm, Grönroos (2000, p. 46) defines a service as:

“a process consisting of a series of more or less intangible activities that normally, but not necessarily always, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems.”

This means that in the contemporary service society the difference between products and services is blurring. Consequently, also service evaluation dimensions have changed according to the service sector evolution and to the transformation of social dynamics. Referring to service evaluation, scholars assert that in the service sector measures tend to be qualitative and service quality mostly depends on how actors involved (i.e. provider, final user) perceive it (Hollins, Blackman & Shinkins, 2003). Polaine et al. (2013) propose instead to focus on the service performance (the service delivery phase) as a measure of value. The issue is that both service quality and service performance are wide and questionable concepts. Evaluation studies assert that what is being evaluated (in a social context) can be clustered in three main categories (Bezzi, 2007):

- » physical standards (i.e. the environmental impact or the resistance of a structure);
- » individual performances (i.e. educational learning or workers' productivity);
- » processes and organizations (i.e. policies, programs, projects, organizational activities).

Moreover, to be effective, evaluation has to reach a specific purpose: basically it allows making a judgement on the *efficacy* (capability of reaching a purpose) and *efficiency* (relation between resources employed and results achieved) of what is being evaluated (Bezzi, 2007). According to Grönroos (2000) definition, the value of a service should lie on all these elements, addressing a purpose both from the customer and the provider perspectives and taking into consideration several dimensions (i.e. moral, aesthetic, economic), depending on the context in which the service takes place. Considering the complex service nature (Shostack, 1982; Manzini, 1993; Kimbell, 2009) and reflecting on applying evaluation approaches to services, some key features can be defined to structure a research framework on service evaluation.

A research approach for service evaluation

Evaluation is evidently a wide and complex scientific topic characterized by several approaches (Stame, 2007) even though, according to a *pragmatic approach* (Patton, 1990), there is not a best way to conduct an evaluation, since every situation is unique and requires specific and *situated* solutions. Focussing on service evaluation, the idea is to structure a research framework aimed at understanding - in a first stance - which part of service evaluation is already covered by existing approaches, methods and tools, with the purpose to define - in a second stance - a theoretical model to be used by actors operating in the service sector. To achieve this purpose different disciplinary contexts dealing with service evaluation are going to be investigated in order to map the state of the art in the research field. Along with the consolidation of the service society, specialized disciplines dealing with services have emerged and started to work on service evaluation. Three main areas of interest can be distinguished, each one including some specific disciplines:

- » economics (service marketing, management and organization);
- » social sciences (sociology, anthropology and psychology);
- » engineering (service logistics and operations engineering).

The design discipline goes through all these areas (mainly referring to service, strategic and interaction design) and its role in the field of service evaluation need to be explored. Defining the disciplinary context to investigate is a crucial point for the research, to frame its boundaries and, as a consequence to identify the opportunities of developing original knowledge. The research framework can thus be described as follows, through some key features.

Key feature #1: defining the process of evaluation

Defining the process of evaluation implies setting a strategy that changes every time, according to the rationality of people involved in the evaluation and to the situated action to be evaluated (Palumbo, 2002). A possible strategy is to compare the evaluation process to a decision-making process because every decision undertakes an evaluation. This process usually implies (i) identifying options and constraints, (ii) establishing criteria to evaluate them, (iii) understanding what we want to obtain for taking the final decision (Saaty, 2008). The issue is that in real life problems are not so linear and when a “rational” decision is made the problem is not necessarily solved. According to the *bounded rationality model* (Simon, 1982) the decision-maker perspective is highly context-dependent and his personal background and purposes strongly affect his evaluations and decisions. This is particularly true referring to services, where the *human component* has a strong and active role. Thus, going beyond the bounded rationality perspective, it is important to explore other possible strategies aimed at solving the issue of defining the process of evaluation.

Key feature #2: identifying the phases of the service lifecycle process

Undertaking a service evaluation requires reflection on which part of the service process to which it could be applied, and from which perspective the observation is done (i.e. individuals or organizations). To reach this purpose, two well-known service design development models have been selected. The first one, called “Four Segments Model”, consists in the phases of *discover*, *define*, *develop* and *deliver* and is commonly used in design and innovation processes (Moritz, 2005). Moritz has then developed this segmentation in a more detailed one consisting of six phases. In the authors’ opinion, by merging these two models,

a comprehensive service lifecycle process may emerge (see Figure 1). In order to complete it, a further phase (*adoption phase*) that is usually not considered in the design process has then been added, considering the consolidation of the service in the medium-long term (Foglieni,



Figure 1 - Service Lifecycle Process

Maffei, & Villari, 2013). The idea is to reflect on the potential impact that services can have on individuals, communities and organizations at different levels (social, economic, organizational, educational). Since the phases identified mainly derives from a service design process, it is necessary to understand if they are representative according to the disciplinary context previously described and which phase can significantly affect innovation, thanks to its evaluation.

Key feature #3: determining the beneficiaries of evaluation

All along the service lifecycle many actors are required to evaluate situations and solutions in order to make decisions. It is important to identify them because, depending on the perspective applied, evaluation produces different results and impacts. Three main categories of actors are proposed, addressing the service evaluation perspective:

- » *service providers*, including decision-makers or other stakeholders, like managers, entrepreneurs and policymakers dealing with service management, operations and marketing;
- » *service designers*, like service design professionals, service design agencies, academics and other actors dealing with the design process;
- » *service users*, namely the beneficiaries of the service offer.

In this case, the open issue is to understand how they can be connected thus affecting the overall innovation process and if there might be indirect beneficiaries to take into consideration.

Key feature #4: identifying the possible focus of evaluation

As stated in the previous paragraph, there are several elements of a service that might be evaluated according to the perspective selected. To make few examples service evaluation can concentrate on the overall service quality, the service performance, the organization efficiency, the user satisfaction, the quality of service interfaces and interactions. Since identifying the focus of service evaluation is probably the more complex issue relating to service evaluation, four main categories are being explored, also according to evaluation studies:

- » *service processes evaluation*, including the activities happening before the service delivery (i.e. market analysis, design process, management operations, marketing campaigns);
- » *service delivery evaluation*, including the activities and tools related to the interaction between the service and the users (i.e. touchpoints accessibility, customer satisfaction);
- » *service impact evaluation*, assessing the outcomes of the service provided, related to a specific context and target, in the medium-long term (mainly social, educational, economic and environmental impacts).

The role of design in service evaluation

Which is the relationship between service design and service evaluation? Evaluating is a complex process that implies responsibilities and a research aptitude. What the doctoral research wants to explore as a new challenge for service design, exploiting its multidisciplinary nature and its strategic value, is to contribute in designing a service evaluation approach relevant within the considered disciplinary context and the whole service lifecycle. Applying existing evaluation techniques to services is not enough: what is needed is an *evaluation strategy* considering the context in which the service takes place, the actors' perspective and the purpose of evaluation. Only designing a strategy aimed at defining what is being evaluated, for which reasons and through which process, it will be possible to select appropriate evaluation techniques and obtaining coherent results. Contemporary challenges are pulling design disciplines to overtake their boundaries. From a design point of view, spreading a culture of service evaluation and supporting the adoption of a systemic service evaluation process could increase providers and users awareness on the importance of service design to foster service innovation. In the authors' opinion, service design has the potential to engage a systematic research in service evaluation field, employing both qualitative and quantitative methods that go beyond customer satisfaction studies.

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Defining Values Through Collaboration

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Abstract

As the service sector within the global economy is growing at a rapid pace, design is called upon by the economy, society and culture to help address complex problems and build bridges between previously separate disciplines. Large organisations struggle to deliver new services that address complex problems, but do not fit into their organisational models. Designers are asked to expand their traditional roles, and also address complex organisational re-structuring. In order to play these more strategic roles, designers however need be involved at the start of an innovation process and not – as is now the often the case – only towards the end. Using a ‘thinking through making’ approach the CRISP PSS 101 project introduces tools that facilitate the alignment of expectations and address the importance of trust and meaning within networks producing Product Service Systems.

KEYWORDS: Wicked Problems, Thinking through making, Intuitive explorations, Service innovations, Service design, Co-Design, Value Creation, Product Service Systems

Introduction

Design professionals today are operating in an increasingly complex field as the need for innovation within services continues to grow. Previously considered as a trade activity, the design profession is evolving by designers adding their value through design thinking to firms trying to innovate and to societies that are trying to create change (Kimbell, 2011). Kimbell specifically refers to the fact that design has been implemented in managerial discourse (Kimbell, 2011, p. 3). The field of service science has emerged, an area of study addressing the need for more systematic service innovations accelerating the co-creation of value, leading researchers to also question how systems thinking theory is co-evolving with the current world we live in (Ing, 2013). With this in mind, how can practitioners from different fields find a common language and common ground? What can designers bring to management thinking? And in turn, how can designers make use of and further develop tools and methodologies from business thinking?

Buchanan's paper 'Wicked Problems in Design Thinking' (1992), shifted design theory towards a more generalised 'Design Thinking' which he believed could be applied to everything from a tangible object to an intangible system. Buchanan's version of design thinking is less concerned with individual designers and how they design, but seeks instead to define designers' roles in the world, which often shift as our society continues to evolve. Taking this definition we think designers have a lot to offer organisations that increasingly need to align with other fields of expertise in order to tackle complex societal demands. In order to design successful Product Service Systems, all the independent connections in the chain need to also be designed and maintained, including the expectations, values and demands of the people working in it. This requires new strategic roles and tools for designers.

Exchanging values in networks

The transitional phase that organisations endure when shifting from products to services, requires their networks to expand to include professionals in fields that are different from their own. In practice, this means working together with individuals who have a completely different professional background and agenda from their own. Healthcare organisations like ZuidZorg (a home care organization in the South of the Netherlands) for instance, are working with stakeholders like telecommunication experts and software developers to make services more accessible to patients, improving not only healthcare, but also increasing general well-being. The more complex a service is, the more multidisciplinary the network becomes, increasing the challenges for those who must collaborate to deliver these services.

The CRISP (Creative Industries Scientific Program) PSS (product service systems) 101 project aims to develop a framework of methods, techniques and tools that improves conceptualisation and communication between all those involved in design and development, across industries. In the development of this research, Design Academy Eindhoven works together with Delft University of Technology and the industry partners Canon Océ, Exact, ZuidZorg, Connect Innovate and STBY. One question the PSS 101 project addresses is how trust can be built and maintained through (the visualization of) value maps and how this will effect the exchange of values within networks producing PSS.

Every stakeholder of a PSS brings value into the specific PSS network in the form of experience and knowledge regarding development and rollout of new service concepts. These networks are in theory a reservoir of expertise from different professional disciplines openly available to all network partners. Unfortunately, due to a lack of common language and understanding of each other's goals and interests, organizations often remain in their independent 'silos', cooperating but not collaborating by sharing their independent values. To build a thriving network and to develop more innovative PSS it is necessary for organizations to work together and incorporate other network partners' expertise in the early development stages of their independent solutions.

'Value' and common goals can have different meanings for different stakeholders. One organisation might be seeking examples of similar rollouts of new concepts, another might be in need of products that solve a specific problem within their service, or individuals within an organisation may wish to learn other methodologies and ways of doing business immediately applicable to their daily work. Through collaborating in a network, individual

stakeholders represent a resource and therefore a ‘value’ for other networked partners. The PSS 101 project research is introducing tools that will facilitate the exchange of such ‘values’.

As expressed by one of the partners during a PSS 101 project workshop, experience has shown that crucial success factors for creating PSS in networks, whether inside or between organisations, depends on three factors:

- » Every stakeholder involved having an understanding of the value s/he gets out of the networked collaboration;
- » The ability of all stakeholders to express their needs clearly;
- » An understanding of other stakeholder’s expectations.

A current tool adopted by service design that relates to these factors is stakeholder mapping (e.g. Stickdorn & Schneider, 2010), which gives an overview of network relations. These maps however do not convey which relations are of actual value neither do they supply the necessary fundament for indicating where new connections can be made. As networked organisations communicate through email, there is nothing on their screens that indicate how they are benefitting from a network nor what others are bringing into it, for instance. Lacking this information prevents development of greater service experiences for the end user and increased economic value for the stakeholders involved.

It is important to realise that networks providing PSS are more ‘social networks’ in regards to how the relations of value within these networks are created by individual people as extensions of their companies. The outcome of a network producing PSS is only as good as its person-to-person exchange of resources. The day-to-day actions of individuals within such networks depend on trust, motivation and an understanding of shared goals and expectations. A misalignment between organisational structures and new service goals of the organisation affects behaviour. Trust within a network affects a person’s ability to convey experience and to communicate how this expertise can be used. This in turn, directly impacts how resources are shared within a network.

Defining Values through Value Pursuit

One approach to building trust in networks is through expanding stakeholders’ overview and understanding what all individual efforts contribute to the success of a PSS. Through her research on the importance of visualising value maps within a network in order to build and maintain trust, the first author has (together with PSS 101 project partners), created the tool ‘Value Pursuit’ (Rygh, 2013). This tool is a game board to be used in workshops aimed at clarifying how stakeholders in a specific PSS can be of value to each other, thus identifying shared goals. On the game board of Value Pursuit, every participant must write down the value they contribute and what challenges they face. Their (potential) value is then connected to other partners’ challenges. These connections are counted and represented by playing pieces on a second game board (or radar as it might resemble), visualising how much each partner is both gaining and contributing to the network. For a network to thrive and trust to be maintained between network partners, these playing pieces should be aligned as much as possible. What people gain from a network should be balanced against their contributions.

The aim of ‘Value Pursuit’ is to be further developed into a dynamic, real-time ‘radar’ of what exchanges are actually occurring within a network, visible to every person operating within it. Equally important to understanding where value creation lies within a network, is the understanding that shifts may occur as people and projects develop. As human nodes in

a dynamic network, we can maintain trust between partners by providing them with a common language through visualisations of how their value is paying off and how this value can be implemented in new areas. Capturing the dynamics of these relations in order to better understand the role of each individual, is the key to keeping a network 'alive' and productive, increasing the end value of a product service system.

The roles of designers in defining values

It takes people to create meaning within complex PSS creation contexts. Learning how one can contribute to this as a designer is a lifelong effort because the skills and knowledge needed to do so change over time. The CRISP team at Design Academy Eindhoven takes a 'thinking through making' approach to creating knowledge about such designer contributions. The intuitive making and the reflective thinking are strongly interrelated, and uncover opportunities for knowledge to be expressed not only through text, but also through designed artifacts, activities, events, services, spaces, narratives, systems, futures or any combination of these. Value Pursuit is an example of a result of such a 'thinking through making' approach, which also allowed several roles of designers to become visible in networked collaborations for PSS creation. Together with the industry partners in CRISP we have defined three main roles for designers: making ideas tangible and understandable, facilitating the connections between people or parties, and instigating change.

Making ideas tangible and understandable often includes some kind of visualization, but analysis and synthesis are always an integral part of and underpinning this designer role (Kimbell, 2011). This role moves well beyond illustrating diagrams. Rather, it researches underlying issues and pinpoints what needs to be analysed and emphasized to create proper understanding or convincing arguments through visualisations. The making of these visualisations are also part of the conversation between the stakeholders. Visualisations that are almost too perfect, may hinder this. A rough sketch can offer great room for discussion and may be very useful as a first step towards developing a greater understanding of values by stakeholders and also clarifying the designers' role (Raijmakers et al., 2009)

The goal of the designer as connector is to get people connected beyond their own disciplines and organisational silos, and broker collaborations between them. Once such connections are established, designers have the ability to instigate change through making new insights, opportunities and ideas tangible, creatively and positively disrupting traditional methods of presentation and communication. By knowing where to intervene and what element to concretise, it is possible to assist companies in adopting new approaches that do not immediately fit into their pre-defined models, as new services rarely do. But in order to be able to intervene, designers need the assistance of the client/company to be able to properly research and understand the internal processes, behaviors and mindsets of the people working there.

In order to play one of these above-mentioned more strategic roles; the designer should preferably be involved at the start of an innovation process and not – as is now the often the case – towards the end. In order to connect with the company and its stakeholders, build a relationship of trust and know where change or disruptive innovations might be beneficial, designers in the previously mentioned roles, need to become a key stakeholder taking part in the conversation from the start. This type of conversation, in the context of design, has been called empathic (Raijmakers et al., 2009), because the success of such conversations depends on understanding each other's positions empathically. When working in multi-stakeholder

collaborations, the chosen language should be inclusive and help participants in these ongoing conversations to empathise with each other. It should allow stakeholders to cross the barriers between disciplines, whilst remaining accessible to every person who will ultimately use the PSS to allow co-creation.

Conclusions

No expertise, theory or single approach alone can solve the 'wicked' problems of today, but the ability to re-invent new methods of creating knowledge through intuitive explorations serves as a vital contribution in the development of innovative service futures. Designers are particularly well positioned to deliver a vital contribution to this effort by making ideas tangible and understandable, facilitating the connections between people or parties, and instigating change. However, in order to do this successfully they need to be involved in the project from the start in order to connect with all stakeholders involved and build a network of trust. By operating on this more strategic level, the Creative Industry Scientific Program, thinks designers have the power to facilitate better collaborations and value creations that will help to serve the creative industry in the future.

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Dead or alive: How municipalities can use service design tools to create live services that are flexible, mindful and involving

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Abstract

Regional service innovation is an emerging and important topic within the European Union. According to the OECD it is becoming ever more crucial for each European municipality to support collaborations between regional stakeholders in order to be innovative and competitive. But collaborations between large municipalities with fixed service routines and small flexible SMEs are challenging. In this paper we argue that service design and service designers' knowledge about different techniques can act as a new approach for municipalities to interact with SMEs in a creative way. As an example of this, the paper describes experiences from a workshop where service designers, SMEs and Swedish municipalities prototypes a visual mapping activity. From this first pilot study we learned that visual mapping is an activity that makes it possible for municipalities to step out of their standardised service routines and step into a more involving and flexible service offering.

KEYWORDS: participatory activity mapping, design tools, service routines

Introduction

In this exploratory case study we introduce the concept of participatory activity mapping (PAM) and explore its potential of acting as a new service strategy for Swedish municipalities. PAM is a visual design activity that has the potential to act as a bridge between small industrial companies with technology as foundation and large municipalities with services as a foundation.

It is becoming increasingly common that Swedish municipalities integrate SMEs in their regional planning processes. It is a way for the municipalities to better understand the future needs and opportunities that are available in the region. But, in practice it often turns out to be quite difficult for the municipalities to create forums that can bring both municipal representatives and local SMEs together. There are at least two obvious reasons for this.

First; municipalities are relatively large organisations compared to most local businesses. Second; the municipalities almost always have a fixed and divided work procedure to deal with people and questions. While a small business owner, on the other hand must be flexible and take care of all the organisational roles himself. This means that when these two systems finally meet they are not quite compatible.

This challenge is not something new. It has earlier been described by Horn & Weber (2007) as a bureaucratic silo effect. I.e. decision-makers fail to look beyond the boundaries of their own interest group, organisation or department. And instead of embracing all the complexity that a region contains they use 'dead routines'(Cohen, 2007) as 'taming strategies'(Roberts, 2000). This could for example mean that a local municipality reduce the complexity by creating a group of selected stakeholders and gives them the exclusive right to decide what the problems and solutions should be. This attitude has a major impact on creativity and innovation, especially in social innovation where the human meeting is crucial.

Many authors claim that this way of reducing complexity by reducing people, is the wrong way to go. It is not possible to cope with complexity or wicked problems using strategies based on tame problems (Rittel & Weber, 1984). A wicked problem requires innovative and comprehensive solutions where the politics of all stakeholders needs to be embraced and listened to (Krippendorf, 2006). Roberts (2000) describes three generic strategies to cope with wicked problems. They are: authoritative Strategies, Competitive Strategies and Collaborative Strategies. Collaborative strategies are the one that many researchers suggest as the way forward.

Research context

Our goal in this case study was to explore and develop a service strategy that enables municipalities to be more flexible and more open for collaboration with the SMEs in the region. Together with representatives from the offices for industry and commerce in the municipalities of Nybro and Lessebo we started to discuss and create a space where this new service strategy could be prototyped and integrated. This space was created inside an ongoing development project named New Innovative Garden Products (NIGP). The aim of the NIGP project was to use local resources such as; materials, production facilities and design knowledge in order to co-create new garden products and new regional innovation networks.

Searching for service components

Our grid in the search for relevant strategy components was designed to sift out core ideas about participation and service design tools. According to Abrams & Hall (2006) mapping is one of the core tool in the designer's toolbox. To design is to invent strategies for visualising information that make new interpretations possible. And when we searched the service design literature we realize that maps and map-making is not a new phenomenon in service design. Since the 1980's, maps inspired by marketing and engineering have been used as communication tools within service design (Shostack, 1984).

So the mapping aspect of service design seemed to be an important starting point, now we needed to understand how we could transform mapping into a collaborative service strategy.

And that is why we were drawn towards participatory design and researchers such as Elizabeth Sanders (2011), Bo Westerlund (2009) and Mette Agger Eriksen (2012). They all have explored the topic of bringing different stakeholders and actors together into collaborative and creative workshops. The two things that all the above researchers have in common is the use of tangible materials and professional facilitators. But, since our proposal of a new service strategy is going to be incorporated in an organisation that does not have the experience of either service design or acting as a workshop facilitator. We needed to figure out how to repack the participatory design materials into a service concept that needed minimal facilitator experience.

During our meetings with the representatives from the municipalities we agreed upon that the workshop material needed to be pre-designed (Eriksen, 2012) in order to be sustainable. After a number of iterative meetings we finally decided on a 3 step format that would fit into the NIGP project. We called the format for participatory activity mapping (PAM). During the six month long project, the municipalities arranged three participatory activity mapping workshops, where the participants jointly mapped and visualised local product and service opportunities within the research topic; Swedish gardens and local resources. In this paper we briefly describe the first workshop.

Example: The first PAM workshop prototype

During this workshop the focus was on mapping different activities in a fictional garden and to fill the garden with suitable product prototypes. The participants in this specific workshop were all managers of small manufacturing companies from the surrounding area. The workshop took place at the Linnaeus University, School of Design and it was a full day activity. The first half of the day was focusing on mapping and the second half were focusing on furnishing the maps with product prototypes. The workshop was led by both the service designer and the representatives from the municipalities.



Figure 1 shows how the municipalities and the SMEs map a person's activities

After a short introduction of the day's activities the participants were divided into two groups. The groups were then asked to choose a picture and create a brief persona description of the people on the picture.

When the groups were done describing the people on the pictures they were given a large pre-designed cardboard field depicting a garden in different seasons. The groups moved the persona picture over the field whilst they discussed, analysed and wrote down the garden activities the persona did during spring, summer, autumn and winter on sticky notes.

From the fields, the groups isolated and pulled out places and situations that were problematic for the personas. The groups were asked to extract the problematic areas from the field and start to create quick paper prototypes that could solve the encountered problems. When the groups were satisfied with their paper prototypes they placed them in front of the fields and presented them to the other participants.



Figure 2 this picture shows how one group analysed an old man's garden activities and created a cardboard prototype that would solve the problem with his bad knees.

Reflections about the Participatory activity mapping prototype

What about the activities of participatory activity mapping? Was it a strategy that could both deal with wicked problems and act as a bridge between SMEs and municipalities? If we reflect on the mapping session using the aspect of embracing and listening to the politics of all stakeholders, as a starting point (Krippendorff, 2006). Then we can say that the discussion after the mapping session was more interesting and rewarding than the actual mapping. Because, it was only after the mapping that the participants really started to critically discuss the topic of regional innovation politics and its related problems of; competence migration, lack of distribution channels and distance to the market. It was a very lively discussion where old power hierarchies disappeared for a brief moment and both the SMEs and the representatives from the municipality could participate in the discussion on equal terms. I think this is a good example of how dead routines could be changed into live routines. This debate would not have happened if the municipal officials had stayed behind their desks. And I do not believe that the discussion would have flourished in the same way if they had not used the maps and the prototypes as vehicles to delve into the subject. During the discussions the issues bounced back and forth between the participants and the materials. So, in this situation you could say that the material and the tools actually bridged the gap between the SMEs and the municipalities. This gap bridging phenomenon was something that we could observe already in the very first mapping and prototyping activities. It became evident that the mapping activities more served as door openers for the municipalities than as a way to co-create new garden products. It functioned as a natural way for the municipalities to sit down and ask more individual questions to each of the participating SMEs.

Turning the prototype into a service

During the NIGP project we conducted three PAM workshops. After each workshop both the designers and the representatives from the municipalities sat down and reflected upon what had happened during the workshop and how the activities could be improved. From these iterative meeting processes, we created an ongoing manuscript. This manuscript was later turned into a brochure where we thoroughly described with text and pictures what we had done before, during and after the workshops. By the end of the project we sent out the brochures to local SMEs and neighbouring municipalities. This could have been the end of the project, because when the project ended the representatives from the participating municipalities disappeared onto other projects. But shortly after the project ended we found

out that the neighbouring municipalities had started to incorporate our experiences and activities in their range of services.

This quote is from the neighbouring municipalities' homepage.

The goal is to create a creative meeting place for the development of new products, services and business models. The project works with the design process as a methodology for product and service that will help the region's small and medium enterprises to increase profitability and competitiveness.

After an interview with the neighbouring municipalities I can say that they have kept the idea about working in groups and use design methods. But they have changed some of the activities. In some cases they lead the work with cardboard prototyping themselves and in other cases they hire a designer to lead the workshops for them. One thing that has not changed is the idea about the creative space. They always create a space that is outside the walls of the municipality. They think it is crucial to gather and meet the SMEs on neutral ground and not to get stuck in old places with old routines.

Conclusions

In this paper we have presented a workshop activity including mapping techniques in which participating municipalities and SMEs create knowledge about each other needs and dreams through the use of visual activity maps. This new way of working allows both the municipalities and the SMEs to change perspectives and act out future service scenarios. The outcome of the project is a service strategy that is open and flexible enough for both collaboration and inspiration. Another part of the outcome was that the municipalities increased their knowledge about other municipalities work context. Based on the experiences gained during this workshop we propose that the mapping method can be used to increase municipality's empathy for regional SMEs.

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Open Service Innovation Platforms and Experience

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Abstract

Open Service Innovation (OSI) platforms invite customers and other users to co-create innovative ideas and generate experiences that will potentially create value. In this paper, we propose a framework for designing experiences for service users of OSI platforms. The framework utilise the following four types of experiences described by Polaine et al.'s (2013): user experience, customer experience, human experience and service provider experience by the properties relevant within the OSI context. Our framework might provide useful insights to OSI platform designers and help them to effectively involve users in the innovation process.

KEYWORDS: open service innovation platform, experience design, service experience.

Introduction

The concept of Open Innovation (OI) refers to the interaction and collaboration of a company with the external environment, including various potential external or internal actors, e.g. customers, suppliers, institutions, universities and employees (Chesbrough, 2011). The open innovation model can be applied in the services and use of Open Service Innovation (OSI) to turn a company into a platform for users to build on. An OSI platform is both a collaborative technology tool and a community portal, which acts as an entry point for users and hosts community support services, such as idea submissions, discussions, etc. Many companies have adopted OSI platforms, including General Electric, Philips and LEGO¹, in order to invite entrepreneurs, institutions and companies to offer their innovative ideas. Representative examples of OSI platforms include Innocentive, Ninesigma and MyStarbucksIdea². OSI platforms can create value for both users and companies that run

¹ See www.ge.com/about-us/ecomagination, www.simplyinnovate.philips.com, <http://lego.cuusoo.com>

² See www.innocentive.com, www.ninesigma.com, <http://mystarbucksidea.force.com>

the platform. The value for users could be, for example, that their contribution to innovation tasks is rewarded either monetarily or non-monetarily. The value for service providers is increasing the innovativeness of their products and deepening their relationships with customers. It is critical for designers to understand the behaviours and emotions of OSI platforms' users. This will enable including them in a collaborative design process, and might in turn lead to better services.

A service can potentially be viewed as an experience that is co-created by the users and the service organisation. Users in this context are those who utilise the OSI platform of a service-oriented company and could be customers, employees, other companies, etc. They might have different and overlapping roles. Experiences with OSI platforms have a significant impact on their usages and could inspire users to contribute innovative ideas. Designers should, therefore try to enhance the experience of the OSI platform users. The purpose of this research is to propose a framework for designing immersive experiences for users of OSI platforms. In the rest of the paper, we first describe the interrelation of OSI platforms with service and experience. We then describe four types of experiences and their design implications. Finally, we conclude and describe future work.

Experience of Open Service Innovation Platforms

The experience with an OSI platform could be defined as *the experience of the users with a platform for open innovation*. The OSI platform preserves the characteristics of services as a “time-perishable, intangible experience performed for a customer acting in the role of a co-producer” (Fitzsimmons & Fitzsimmons, 2001, p. 4). As the experience is a very dynamic, complex and subjective phenomenon, it depends upon the perception of multiple sensory qualities of a design, interpreted through filters relating to contextual factors (Buchenau et al., 2000). In the experience of an OSI platform, users exist in dynamic relationship with other people, places and objects. Additionally, the quality of users' experience with an OSI platform may change over time as it is influenced by variations in multiple contextual factors, time pressure, social circumstances and company changes.

Figure 1 presents the interrelation of experience, OSI platform and the service. The elements of the triangle affect each other, involving the total experience of the user as a part of the system. The service utilises a platform as a communication channel with users, who experience the service through the platform. The experiential factor also affects the way that users utilise the OSI platform and perceive the service. Polaine et al. (2013) proposed considering the following four categories of experience in the context of service design: User Experience (UX), Customer Experience (CE), Service Provider Experience (SPE) and Human Experience (HE). We apply this classification in the context of OSI platform usage. In order to conceptualise OSI platform users' experience, we propose a framework based on these categories. The framework attempts to provide useful insights to OSI platform designers by examining the different roles of the users, including how they can effectively be involved in the innovation process.

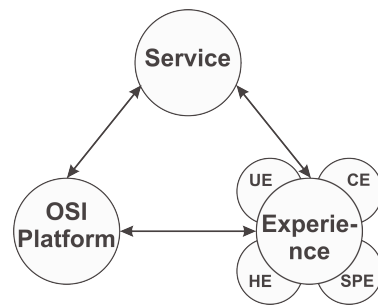


Figure 1: The interrelation of experience within a service company and with an OSI platform.

User Experience (UX) of OSI platforms

In Polaine et al.'s (2013) work, the concept of UX is related mainly with task-based experiences, short time frames and interaction with nonhuman contact points. The UX concerns the experiences of the users with technology or technology-enabled services and applications within a specific context (Hassenzahl & Tractinsky, 2006). This concept could thus be applied in the context of OSI platforms. UX with OSI platforms can be seen as a combination of service experience factors and user experience factors (Olsson, 2013). In OSI platforms the characteristics that affect UX include the social navigation, the temporal experience, the multiple interaction styles and the intangibility of services (Wäljas et al., 2010). The social navigation refers to different interactions among users. These interactions can be explicit, e.g. messaging, or implicit, e.g. letting other users see their interaction behaviour, including ratings, navigation paths or purchasing data. The temporal experience refers to the fact that the service changes dynamically and evolves over time, e.g. in terms of its content, functionalities and user interface. The intangibility of services means that an OSI platform does not produce a physical product for the users.

The UX of an OSI platform is based on these four characteristics. They can therefore be used to inform design. An example of a platform with social navigation is Induct³, which provides many different types of user interaction, such as messaging, voting and following ideas.

Customer Experience (CE) of OSI platforms

The CE is defined as “the sum of the task experiences involved in using a service” in Polaine et al.'s (2013, p. 134) work. Additionally, the CE could be defined as “the internal and subjective response of customers when they have any direct or indirect contact with a company” (Meyer & Schwager, 2007, p. 2). The design of the CE is considered important to service success and is now incorporated in many service development approaches (Clatworthy, 2012). CE is accompanied with expectations in terms of quality and value that an OSI platform should create for its users. Moreover, these expectations are set by the brand, the company that runs the platform and the previous experience of users with similar services. If the experience does not match the expectations, the users become disappointed and frustrated, and that emotional state affects the perceived quality of the platform (Polaine et al., 2013). An OSI platform enables a company to encompass all the involved users in creating the CEs.

³ www.inductsoftware.com

Ritter and Walter (2003) suggest the importance of the following four characteristics when involving customers in the development process: mutual adaptation, mutual trust, mutual commitment and mutual relationship management. These could be used when considering how to incorporate CE into the design implementation of OSI platforms. LEGO Cuusoo is a representative example of an OSI platform where users create unique CEs, not only for themselves but for other users as well. More specifically, users submit idea projects that might be produced and the CE is enhanced by the company's brand.

Human Experience (HE) of OSI platforms

The HE contains a range of emotions, such as pride, shame, joy, embarrassment, euphoria and despair (Polaine et al., 2013). These involve both physical and cognitive events. The HE with OSI platforms might evoke rich emotions related to the users' motivation. Motivation has been described as the "energisation and direction of human behaviour" (Reeve, 2005, p. 6), and is thus a fundamental concept for designers seeking to understand, regulate and support human behaviour. Motzek (2007) discusses the motivation factors of open innovation that could be used by companies. These factors are similar to the general knowledge regarding motivation factors for entrepreneurs. Other studies demonstrate that users in the OSI context can be motivated by fun, reward, participation in a community and desire to innovate (Antikainen et al., 2010). Gamification refers to the use of game elements, game mechanics in a non-game context to increase motivation. We believe that gamification might enhance the HE of OSI platform users. MyStarbucksIdea is one example of an OSI platform with gamification elements. The best ideas proposed by the users are rewarded.

Service Provider Experience (SPE) of OSI platforms

In many cases, service experiences are co-produced by the customer and their interaction with a contact point (Polaine et al., 2013). The SPE can be defined as "the cognitive, emotional and behavioural responses that are created during the process of performing in a service role" (Parish et al., 2008, p. 221) in the context of an OSI platform. Parish et al. (2008) proposed evaluating the SPE with respect to the following two dimensions: the user's immersion and the intensity of the service role. In the context of an OSI platform, the immersion refers to the time that a user spends with the OSI platform, while the intensity of the service role refers to the amount of knowledge, skills and emotional and/or physical labour is required by a service role.

Service providers are now more aware that the creation of customer and brand experiences requires more than just service provider control. Philips provides an attractive OSI platform for users, especially industrial designers, who want to participate in the design of Philips products. The changing nature of the user-company interaction as the locus of co-creation and co-extraction of value redefines the meaning of value and the process of value creation (Prahalad & Ramaswamy, 2004). Design implications for SPE might include the immersion and intensity of the service role with respect to the simplicity and attractiveness of innovation tasks and user interface design. Furthermore, the reliability and robustness of the platform could support the user immersion in the platform.

Conclusion

In this paper, we proposed a framework for designing experience for OSI platform users based on the experience categories proposed by Polaine et al.'s (2013). The framework

attempts to provide useful insights to OSI platform designers in order to examine the different roles of the users and effectively involve them in the innovation process. Specifically, User Experience, Customer Experience, Human Experience and Service Provider Experience were discussed as they are important to consider when designing experiences for this context. This framework attempts to create immersive experiences for users that are expected to contribute with innovative ideas. It might be useful for designers of OSI platforms as well.

As companies are beginning to consider user innovation as a strategic asset for developing new ideas for innovation and support in the innovation development process, designing better experiences for users of OSI platforms is an increasingly important priority. The presented framework can be seen as a 'rule of thumb' and a useful foundation for the reader to build on. Future research includes the evaluation of the design framework described herein in case studies and development of guidelines for design of OSI platforms.

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The Strategic Role of Design in Supporting Knowledge Exchange

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Abstract

Within the last decade design has had a strategic role in tackling escalating environmental, social and economic problems. Through design thinking, creative methods have been applied to problem solving in a process of collaboration and designers working in new territories and knowledge domains. As the designer has moved further afield the method of Knowledge Exchange (KE) has become more recognised as a democratic approach to collaboration with the ethos that everyone has something creative and productive to offer. This paper provides reflections on early stage findings from a strategic design innovation process in which collaborative partnerships between academics, SMEs and designers emerged through KE and suggests that there is value to be had from using design strategically for not only those from a business or academic background but also for those from the design community and points to a need for more training for designers from all disciplines in how to use design strategically.

KEYWORDS: design thinking, knowledge exchange, collaboration.

Introduction & Background

As a society we are facing increasing environment, social and economic challenges, which are global and complex and to date traditional problem solving methods have not been enough to tackle them (Collins, 2013). Design thinking has often been posited as being a strategy which can tackle this through the use of creative problem solving (Kimbell, 2011; Design Council, 2012). However, Nussbaum (2011) an original advocate of design thinking has recently labelled this a “failed experiment”. One reason for this label is that design thinking has often been disassociated from business (Kimbell, 2011), while another is that it not yet clear how this process of design thinking can be independently applied to industry and their ways of working without the on-going support of a designer (Acklin et al., 2013).

One particular aspect of design which businesses have struggled to embrace is the mess and disruption which is inherent to the creative process. The design mantra of “Fail Early, Fail Often” is alien to the success driven nature of business (Koh, 2012). Design consultancies who championed the strategic value of design aimed to promote a culture of collaboration within a diverse group of expertise, which requires a new mindset. However, businesses often expected that their employees would develop the capacity to use design strategically following short workshops and subsequently became disheartened when they did not develop innovative solutions (Koh, 2012).

Challenge

As can be seen from the literature, it is clear that simply teaching those from business about design is not sufficient for them to make use of design thinking within their own work and practice. For this to happen they need to be both supported by a designer and experience a change of mindset (Acklin et al. 2013). It has been argued that this change in mindset could be supported through the use of Knowledge Exchange (KE) in which both business and design learn from one another (Follett & Marra 2012). KE has the potential to assist the UK to develop a competitive edge in new and emerging industries by enabling companies to make best use of external knowledge in order to encourage innovation (Cruickshank et al. 2012). Conducting traditional KE can be challenging (Follett & Marra 2012), however one project which is looking to address these challenges through the use of design as a strategy is Design in Action (DiA). DiA, a four year Arts and Humanities Research Council (AHRC) KE Hub, engages with and supports diverse stakeholders to achieve collaborative innovation through design in the sectors of Wellbeing, Food, Rural Economies, Sport and ICT, all major sectors within the Scottish economy. The AHRC has invested in four hubs to explore KE within the arts and humanities field. DiA seeks to investigate the role of design as a strategy in KE. The KE Design Process created within the DiA project, allows both designers and those from a non-design background to work together to solve complex problems, while also learning from one another’s different practices of working. This design process takes place in KE ideation events known as Chiasma (meaning ideas meeting at the point of creation).

KE Design Model and Case Study

This model has evolved by applying design strategically to support KE between designers, academics and SME’s. The Chiasma events apply the KE Design process, which includes the four stages of inspiration, ideation, conceptualisation and refinement.

This supports the design and development of bespoke tools and methods that are tailored to the scope of the call for participation. These are supported through design facilitation, which differs from traditional practices by incorporating design thinking throughout delivery. While the participants are supported, the designer plays a different role due to their previous experience of applying skillset of visualising, communicating, prototyping to synthesize new ideas. The designers then take on a key role once each group is formed. A sports sector Chiasma was held in September 2013 over the course of two and a half days at an outdoor sports resort on the outskirts of Dundee. This Chiasma looked at solutions to the barriers in participating in outdoor sports, which were faced by specific populations (e.g. older adults,

people from areas of social deprivation and people with disabilities) and was facilitated by researchers from DiA. The design facilitation supported active engagement enabling each and every participant to transition through the complete design process. Through conceptualising the Chiasma model, the research team strategically implemented design and research tools to facilitate KE. This enabled the researchers to observe the process, capture data, reflect and refine.

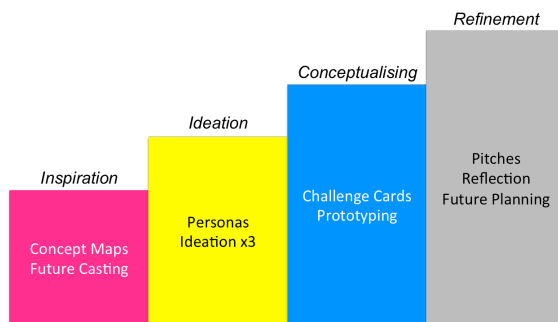


Figure 1 - Sports Chiasma Process

Inspiration: Because the scoping of the issue has taken place prior to a Chiasma, there is less of a necessity for the participant to spend time breaking down the problems. Instead within the Sports Chiasma, the inspiration phase looked at understanding the issues already scoped and the populations affected by the issue (Figure 1). Starting at dinner time on the first evening the first activity was devoted to this understanding, with participants creating concept maps for the four themes previously identified by DiA researchers: Community; Accessibility; Learning; and Safety. Participants used pre-produced fact and provocation cards developed by DiA researchers. This was followed with a future-casting task in which participants were asked to imagine that this problem had been solved and the different changes this had brought to society. During this task the participants were instructed not to imagine *how* the problem would be solved, this pushed the designers out of their comfort zone as their natural response is the problem solve and ideate.

Ideation: On the morning of the first full day, participants quickly moved from the inspiration phase into ideation. The KE Design process allows for three rounds of rapid ideation. Participants formed four groups and spent fifteen minutes in each theme, considering ideas to help people affected by this issue. All participants were encouraged to write their own ideas down on a post-it using one or two words and place this onto a board. The focus in this activity is to enable participants to feel safe within the Chiasma environment and to be comfortable in sharing ideas. The facilitators encouraged participants to think radically in generating ideas, and enforced the rule that at this stage there was to be no critiquing of one another's ideas.

Following this stage, the facilitators clustered the ideas generated, identifying common themes and generating four new headings for the next round of ideation: Community Linking; Integrating Existing Hobbies; Mixing Digital with Physical Activities; and Information Access. In order to introduce the concept that failing is not only acceptable but actually useful, participants were instructed that they were now to push beyond their initial ideas and develop new solutions for the four new themes and told that they could not reuse any of their ideas from the first round, not because those ideas had been judged to be wrong but because there was a need for this phase to be challenging if it was to produce innovative ideas.

Conceptualisation: Following the final round of ideation, the ideas from the previous session were again clustered with the most popular five ideas identified. These ideas were still at a very high level e.g. “Technology Based Feedback on Participation” giving participants plenty of scope to explore how to develop the idea. The participants were given the choice to select their two favourite ideas and were organised into groups based upon these choices. The facilitators helped manage this stage to ensure that groups are balanced and had a mixture of both designer and business participants. To support a feeling of equality, no leader was directly assigned by the facilitator and when meeting with the groups, the facilitators encouraged contributions from all participants. As groups developed their ideas over the following twenty-four hours, they were offered both public and private feedback from their fellow participants and the facilitators. The ideas changed dramatically over this time, demonstrating that the participants were becoming comfortable with accepting that something would not work and with changing their direction.

Refinement: At the end of the event, five teams presented their ideas to a panel of experts drawn from academia, design and industry who offered feedback and advice on where the idea could be improved. Following the Chiasma the teams have six weeks to submit a full funding application for up to £20,000 to take the idea to market. The Sports Chiasma, saw three applications with one company being awarded funding. This idea had been further developed following the feedback from the panel, again demonstrating that the companies had become confident in iterating on their initial ideas and changing direction as required. DiA is currently developing a package of tools to allow participants to continue to make use of these design tools following the end of the Chiasma.

Discussion

DiA is employing the use of design thinking in the development of a range of innovation events designed to support KE. To date this work is still very much in its infancy and so results are limited. However, we have noted that even within this limited time, there has been great value taken from the strategic role of design within the KE design process. A scaffold has been built to support businesses and academics in using design in this way and the role of the designer is key within this both as a facilitator and as a member of a group.

The use of a workshop such as Chiasma to carry out KE is not new, many other organisations and research projects have conducted similar workshops previously (for example hackathon events). However, within Chiasma the aim is not only to conduct creative problem solving but to change the perceptions of those coming from business as to the value that design as a strategy can bring to them and their companies. Participants coming from business are exposed to new methods and ways of working, with designers looking for ways to work around or breakdown existing barriers rather than accepting that these are immovable obstacles. In addition the fact that the problems and challenges are scoped prior to the Chiasma, allows the participants the opportunity to begin using people centred methods, to remove themselves from the situation and to use mindful design processes to consider solutions for other people.

Additionally, in general, the designers that have tackled the problem strategically have been from a service design background which is accustomed to interdisciplinary approaches and working with those from outwith design. The solutions developed in the Chiasma by these designers have on the whole considered touch points, which incorporate experiences and processes to design a product eco system. This has led to designers from more traditional

background also learning new methods of working within the Chiasma and points to a need for them to be able to access training in this new mode of working. Additionally, many of the solutions that have been pitched and been awarded funding have been service orientated or product service systems. This has even been true in those groups who did not have a designer from a service based background, suggesting that in order to solve these complex problems and change existing perceptions there is a need for a service based approach.

Conclusion

Design Thinking has been a controversial term in recent years; with many arguing as to the value it can actually bring to businesses seeking to adopt it. DiA is looking to use design as a strategy alongside Knowledge Exchange to both change business perceptions on design thinking and to also help them experience a change in mind set of how they can adopt design principles within their own business. DiA's Chiasma events have also suggested that the designers best placed to work with business in Knowledge Exchange and to help them experience this change in mindset are those who can use design in a strategic manner with a variety of stakeholders.

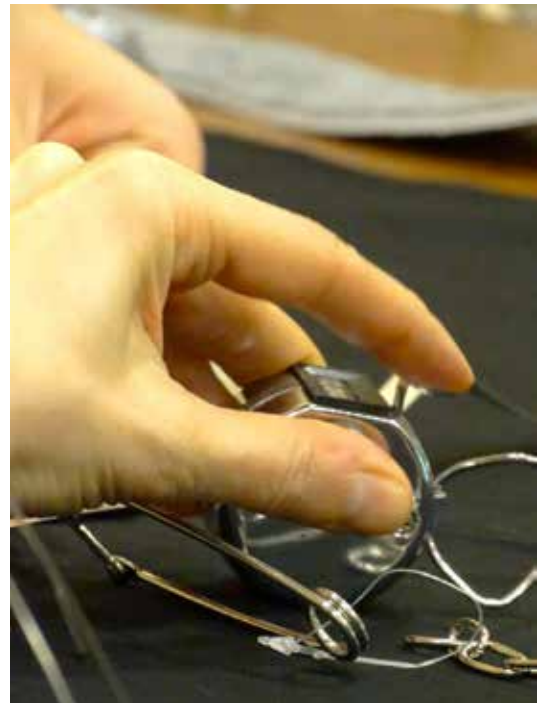
Acknowledgements

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Workshops



Networked Collaboration Canvas: How can Service Design facilitate Networked Collaboration?

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Introduction

Whereas products and services are growing in complexity, industry needs to expand their networks to include expertise from other fields than their own. Consequently, innovation activities more and more take place in highly dynamic network environments, mixing people and parties, models, interests, and goals.

It can be said that these dynamic networks do not function as well as they should; in part, because companies need to reshape their organizations to effectively deal with the demands of these networks and processes. In part this is because new techniques are needed to determine and communicate end-user needs, and involve end-users themselves in different ways. Although techniques from experience design, product design and service design are promising; using these in practice for networked collaboration has proven difficult. The challenges are to understand and involve parties as a heterogeneous network rather than a set of isolated individuals. In an on-going research on Product Service System (PSS) development Henze, Mulder, Stappers, and Rezaei (2012) identified boundaries obstructing the implementation of PSS. In order to facilitate the clients' functioning by the provider, the latter needs to adapt the own organization to cross these boundaries. Moreover, this development poses challenges working with the (often short-lived) network of creative industry partners, which participate in the innovation/development phase for new services.

Networked Collaboration Canvas

In order to get a better grip on the networked nature of the new forms of inter-organisational collaborations a Networked Collaboration Canvas has been built elaborating upon Actor-Network Theory (Latour, 2005) and Boundary Objects (Star & Griesemer, 1989) addressing the interactions between actors and objects involved in PSS development (Henze, Mulder, & Stappers, 2013).

The Networked Collaboration Canvas covers the full life cycle of a human-centred development process, starting from understanding user needs through generating product

service propositions and developing these into implementations. The process is visualized as an accumulation of translations and transformations. Applying the Networked Collaboration Canvas starts with mapping boundaries occurring in human-centred development. It is needed to understand these boundaries in order to designate adequate boundary crossing methods, techniques and tools, the next step in the application of the canvas. The aim of the workshop is to discuss existing Service Design methods, techniques, and tools that should be on the palette of adequate methods, and challenges to develop new methods and tools.

After a short introduction on the Networked Collaboration Canvas the workshop participants will work collaboratively to map boundaries (a PSS development case is provided) using the Canvas. After this the participants will have an understanding of the boundaries occurring. The workshop continuously discussing what (Service Design) methods and tools could support crossing the boundaries. A moderate palette of methods and tools will be provided. Participants are invited to add on and remove from the palette, and discuss the need for new methods and tools.

The workshop invites both practitioners and academics in its discussion on what Service Design can add to networked collaboration and what directions are desirable for new Service Design methods and tools.

Workshop outcome

Participants learn to trace possible boundaries in their practice of networked collaboration, and how to cope with these boundaries. Possible new directions for future Service Design methods and tools will be identified. Workshop experiences, results and reflections will be published as an eBook and send to all workshop participants. A publication on the workshop will also appear, as a chapter in the forthcoming CRISP PSS 101 book. This book (expected to be published early 2015) is the result of the PSS101 project of which the Networked Collaboration Canvas is one of the results. Participants who apply the canvas in their own PSS development and networked collaborations are invited to submit a chapter on their experiences as well. The workshop is used as a further valorisation of the networked collaboration canvas; these findings are to be published in relevant journals and conference proceedings.

Acknowledgement

This work is funded within the Creative Industry Scientific Programme (CRISP), supported by the Dutch Ministry of Education, Culture and Science. We thank all partners involved in the CRISP project PSS 101 project; industrial partners are Connect to Innovate, STBY, Exact, Océ industries, and Zuidzorg. Academic partners are from the Design Academy Eindhoven as well as the Delft University of Technology, both the Faculty of Industrial Design Engineering and the Faculty of Technology, Policy and Management.

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The appliance of science – how behavioural science can help create better services

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Workshop theme

Service Designers already use a number of different techniques to help design new services - from ethnography to longitudinal research, prototyping to service staging. We believe that behavioural science is an often overlooked and important addition to a service designer's arsenal.

Behavioral science can provide designers with insights that challenge traditional assumptions about behavior and help them to develop better services. In particular it helps us create more **actionable insight** about our users help us understand **why they behave as they do** and gives us the **tools to test our assumptions**.

However, much of the body of knowledge uncovered by behavioural science is inaccessible, locked behind academic paywalls. Our workshop will provide an introduction to the benefits and skills needed to build capability, all delivered through a specific brief focused on alcohol reduction.

In the workshop participants will be asked to:

- » Design an alcohol reduction service for 20 year olds using market and audience data that was developed through a collaboration between a service designer and behavioural scientist.
- » Develop robust experiments that allow them to understand if their proposed solution will work.

Overall the session will demonstrate the benefits of taking a more evidence based approach to the design and testing processes.

Workshop description

Intro

Why combine – creative thinking and science?

- » The best way to tackle social issues is to not only research how and why people make decisions, but use the design of products, services and places to help us all make better decisions.

BRIEF

Design a service to help 20 year olds reduce their alcohol consumption

- » Problem
 - Drinking frequently often more than five times a week
 - Social contracts of drinking, like the pressures and round culture
- » Audience insight
 - Alcohol can be a positive social lubricant (Sayette et al., 2012) so the service cannot and should not design it out
 - However rituals can enhance consumption (Vohs et al., forthcoming) in particular the issues around round culture
 - And people often comply to drinking norms without intention (Cialdini et al., 2014)
- » Market data
 - Lessons from other market examples. Focusing on:
 - How quantified self products change behaviour
 - The success of time-limited campaigns
 - Lateral examples from other markets
 - A set of UX principles to guide the design process, which can be found [here](#).

IDEATION

- » ‘An easy way to say no’ – how can we reduce consumption in pubs while maintaining the positive benefits of sharing a drink?

EXPERIMENT DESIGN

- » Principles of lean experiments examples
 - Experiments are the most rigorous way of demonstrating a cause-effect relationship between an intervention and any change in behaviour (Cabinet Office, 2012)
- » Active session to design some simple experiments, covering:
 - Who is in the sample?
 - Where does the experiment take place?
 - What is the manipulation, the factor we are interested in?
 - What are the objective outcomes we want to measure?

Workshop outcome

Understanding how to alter behaviour by combining a rigorous scientific approach with creative thinking.

We expect participants to leave with:

- » An understanding of how behavioural science can help them design services
- » How they can access behavioural science resources
- » Knowledge of how to create experiments to test their hypotheses
- » Practical tips and tools to improve their own practise

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Published research vs. business reality: Towards a common understanding of customer journey mapping

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Workshop theme

Scholarly literature provides various approaches to describe customer experiences throughout the “customer journey”. These approaches differ not only regarding their naming but also regarding their definitions, visualisations, scale and scope (A brief overview can be found in Segelström, 2013). Some scholars refer to the approach of service blueprinting based on the early work of Shostack (1982; 1984), Bitner, Ostrom, & Morgan (2008) propose a revised model of service blueprinting, others focus on certain aspects, such as Wreiner et al. (2009) or Sparagen & Chan (2008). Polaine (2009) presented Blueprinting+ visualising the experiences of various characters and highlighting the interactions between them (see also Aebersold, Polaine, & Schäfer, 2010). Other scholars refer to customer journey mapping (also known as experience journeys, user journeys or customer journey maps). Such customer journeys share a strong focus on the orchestration of touchpoints (Parker & Heapy, 2006). In one of the first service design books, Koivisto (2009) describes customer journey mapping. Other approaches are based on storyboarding and often derive from interaction design (Carroll, 1999; Goodwin, 2009; Cooper, Reimann, & Cronin, 2007).

However, service design practitioners rather use a combination of these methods since single methods cover only a limited view of the customer journey. They no longer reflect the daily reality and needs of service design practitioners. Hence, in this workshop we will briefly reflect on the existing approaches in academic literature and their strengths and shortcomings before co-creating a more general approach together with the participants. We will also clarify the context when to use customer journey mapping and when to resort to other tools.

The outcomes of this workshop will be used as the starting point for a wider discussion on customer journey mapping within the service design community. The workshop builds on the service design and business model framework presented in our previous workshop at ServDes 2012 (Stickdorn & Horneß, 2012).

Workshop description

Workshop Aim

The aim is that participants of this workshop will gain an overview on the academic body-of-knowledge regarding various approaches to visualise customer experiences. Participants should thereby reflect scholarly literature with service design practise. Building on their individual experience, practical examples and the presented approaches, the participants will co-create a more general approach of customer journey mapping based on the core components used in practise and described in literature.

Agenda

- 0:00 Introduction and challenge to map out an easy customer journey.
- 0:05 Participants are split into teams. Each team gets a manual how to map the given journey method. Coached by the workshop leaders they create their version of that journey.
- 0:30 Each team puts up their journey and quickly points out the main pains and gains of the method they used. All resulting journeys are put up on the wall as a customer journey gallery (together with the description of the specific method).
- 0:50 New teams are formed (group puzzle): the new teams have one member of the previous teams each (so each journey method is present in each tem).
- 0:60 Looking for common ground: Common principles and elements of the different customer journeys are identified by the teams.
- 0:70 Embrace the difference – looking for generalizing principles: The differences in the selected methods are identified. The teams are challenged to turn the insights into a more short generalized approach.
- 0:80 Wrap up: Synthesizing the results into a call for researchers to bridge the gap between research and practitioners for customer journey mapping.

Workshop outcome

Problems discovered and discussed during the workshop:

- » **Definition issues:** There's no clear definition of central concepts (e.g. touchpoint). Often this is a big obstacle in the common co-design setting with customers and clients in service design projects.
- » **Granularity and scope of journey:** Each customer journey can be looked at at different granularity (i.e. level of detail) and scope (i.e. focus on a high-level end-to-end journey map vs. focus on one -or few- critical touchpoints or channels). Customer journey mapping as a tool itself does not provide a clear guidance on granularity and scope. Therefore, often a common agreement on these issues during a co-design process is missing.

- » **Role of facilitation:** Customer journey maps as a tool cannot be seen as a method description or as a simply paper template, but rather as a boundary object that highly depends on facilitation.

Further workshop take-away:

- » Overview and understanding of existing approaches in customer journey mapping.
- » Understanding of the common features and differences.
- » A feel for a practical and more generalized approach that meets the need of service design practitioners.

This workshop served as a starting point for the co-creation of a whitepaper addressing the common problems of service design practitioners regarding customer (as well as employee or stakeholder) journey mapping.

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Feely Touchpoints and Bouncy Journeys? Kinetic Materials for Service Design

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Abstract

Design materials with unpredictable dynamic qualities such as balancing, bouncing, rolling and falling can lead to surprises that provoke a lively challenging of assumptions. In this workshop, participants will engage hands-on in exploring several contrasting kinetic materials to support negotiating service strategies and values.

KEYWORDS: workshop, kinetic materials, tangible materials, co-design, service design, service values

Services are collaborative, multi-dimensional and unpredictable

Services are neither static, linear, nor fully controllable, and neither are service (co-)design or service innovation processes. Design and delivery of services is inherently collaborative – whether between or within organisations, and it increasingly involves user/stakeholder collaboration too. Somewhat surprisingly, for a field with such an emphasis on “touch points” in these service (co-)design processes, there appear relatively little attempts to exploit sense-making around service strategies and values through collaboratively manipulating tangible and kinetic materials. We fully acknowledge the qualities of combining diverse (largely 2D) ways of working with visuals, journeys, mappings, etc. with (more 3D) ways of working with mock-ups, service prototyping, etc. in such processes. This workshop, however, offers a possible complement to these practices through facilitating negotiations and understandings of strategies and values of services through dynamic, multi-dimensional and partly unpredictable representations and provocations.

Benefits of a tangible approach

The hands-on examples and experiences shared by the organizers at the workshop, are based on many years of research on how material matters in multidisciplinary, participatory design and innovation situations, conversations and processes among diverse stakeholders (e.g.

(Mitchell *et al.* 2009, Eriksen 2012, Vaajakallio 2012, Buur, Ankenbrand & Mitchell 2013). This practice-based co-design research includes, studies of using tangible materials beyond touchpoint/product development for more abstract or strategic purposes such as exploring and negotiating business modelling, value setting as well as identifying and negotiating core issues and challenges to address in (service) innovation processes. From such research, we have found that working in these ways between diverse stakeholders assists in quickly establishing new understandings, generating new perspectives, provoking new narratives and identifying new issues and challenges for (service) innovation. – in other words, that mutual learning is in motion.

Workshop description

The workshop will be organized around participant's literally hands-on experiences, in intimate sized groups to explore three different core topics to the field of service design. This will be done with three sets of diverse kinetic materials described below.

The artefacts we propose to share are carefully selected in order to give participants direct and indirect exposure to a number of different experiences with tangibles. The different artefacts offer different benefits for addressing different aspects of a case.

1. Ricocheting Customer Journeys

Marbles representing customers are lined up behind a gate at the top of a ramp. Upon lifting the gate the “customers” roll down the ramp, unpredictably bouncing off each other and various adjustable barriers, to end up in either of two receptacles (figure 1). Labelling one receptacle “satisfied customers” and the other “dissatisfied” facilitates rich discussions concerning matters like the influences that service customers have upon each other, and the factors that may tilt or steer their experiences.



Figure 1: Marbles representing service users, bounce unpredictably off of barriers that represent the different factors that influence the likelihood of becoming a customer.

This “Pinball” artefact was originally developed to provoke a hearing aid manufacturer in discussions concerning how they relate to users and pre-users (Mitchell & Buur 2010). However since then, we have since deployed variations of this dynamic tool kit in sessions with a wide variety of diverse stakeholders. For instance, sessions concerned with science museum experience design (Murman & Heinemann 2013), educational program strategy planning, and amusement park development (Buur & Gudeskin 2012, Mitchell *et al.* 2013).

2. Balancing front and back stage resources

We offer a series of artefacts that lend themselves to experimenting with balance and imbalance in service strategy.



Figure 2: Balancing sales, marketing and research and development resources on unpredictable poles

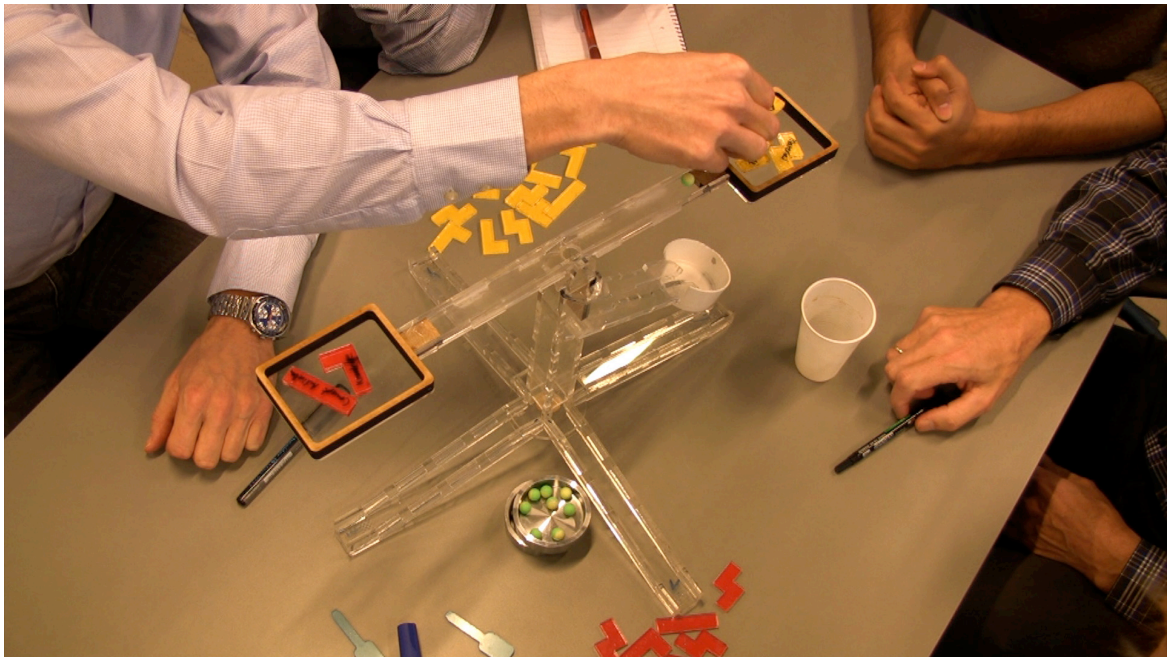


Figure 3. Negotiating to balance inputs and outputs of a novel product-service collaboration

Our first balancing contraption was developed to illustrate business dilemmas experienced by a lighting technology company. It took the form of a suspended mobile comprising a 2m long dowling pole, and two shorter poles suspended at either length of the main pole (see Figure 2). It was designed to support a discussion of the best relative proportion of resources between sales and development departments (Mitchell & Buur 2010).

A later contraption was designed to encourage a smart materials manufacturer to discuss the balance between mutual costs and benefits in a customer relationship (Figure 3). Two weighing pans at opposite ends of beam were supported at its fulcrum by a small table-top frame. A marble would wobble on the beam until an imbalance was reached, whereupon it would drop down to the table-top through a hole in the beam via ramps in the frame (Mitchell *et al.* 2013).

3. Tangible Activity Maps That Snap Back

Since 2009 we have been evolving a bricolage toolkit of similarly shiny materials we call the “Silver Set” (figure 4). Based upon many workshops in which we have challenged industrialists and public sector managers to make a shared tangible representation of their value network (Buur *et al.* 2013), we have been able to also inspire service industry partners in tourism and leisure to fresh perspectives on their strategic landscapes. What has proved particularly engaging and inspiring has been participants responses to materials that “talk back” through providing some kind of surprise physical action or resistance e.g. springs, magnets, wheels (Mitchell *et al.* 2013).



Figure 4. An unpredictable spring provokes a novel shared understanding concerning service contracts

Procedure

1. We start by introducing details about a service innovation case. After this briefest of introductions, workshop participants will be divided into three “tracks”.
2. One of the organisers will guide each track into how to use a particular set of tangible materials. (If needed, each track will be sub divided into work groups comprising two or three people). They will explore the case with, and through the available materials for 20 minutes.
3. Tracks will then rotate, so participants will be able to explore the case with one of the other sets of tangible materials. Same procedure as above for 20 minutes.
4. 2 minutes theoretical perspectives on today’s experiences by each of the workshop organizers.
5. 2 minute silent individual reflection on key insights and surprises (annotations on post-it notes).
6. Plenum discussion based on individual reflections. Clustering and renaming of key insights and surprises in relation to service innovation processes.

Workshop outcome

From active participation at this hands-on inspirational workshop, the one outcome we would like people to learn and take home, is how tangible and kinetic materials/artefacts offer a promising addition to other common ways of working when (co-)designing services and working with service innovation. For example when focuses are on collaboratively exploring non-static and non-linear service strategies and values.

However, this learning will very likely come in several different forms – for example through:

- » experiences of how different tangible and kinetic artefacts can influence direct collaborative understanding, negotiation and discussion of both case and topics

- » observation of how other participants may respond in different ways to the artefacts in motion
- » discussion of individual and collective reflections on insights and surprises as well as possible ways forward – in relation to current service design and innovation processes and practices.

This said, we of course recognize, that what situated mutual and individual learning will be set in motion through the shared hands-on experiences, cannot really be prescribed in advance.

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Bedside Manners: Lessons learned from Design Practice in Healthcare

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Workshop theme

No one can doubt the unique situation in which Design practice finds itself in healthcare. It is heralded by some as the panacea for an ailing system that demands innovation whilst experience suggests that 'health and social care' is a context with its own particular set of challenges to the design approach. In recent years there has been growing interest in the potential of design approaches to transform health care. Reports by UK organisations including NESTA (Horne, Khan & Corrigan, 2013), Demos (Parker & Heapy, 2006) and The Design Council (Cottam & Leadbeater, 2004) discuss the need for and benefits of both using design methods and involving a wider group of patients, communities and health professionals in the development of public services. However, these papers focus on the results of such co-design (or co-production) to demonstrate their value and there is little discussion of how designing operates to explain its unique usefulness and assist its adoption. There are many drivers for health service reform; a rise of long term conditions, an aging population, a health service that has evolved to deliver acute care rather than primary care, reduced funding and increasing expectations from an increasingly informed population. These are some of the key challenges to society today, and ones that require a new way of thinking, a radical step change in the ways we deliver care, innovative approaches.

Workshop description

This workshop is the opportunity to bring together practitioners delivering service design in 'health and social care' to critically reflect on the highs and lows, the successes and challenges of working in this area. The workshop is facilitated by the User-centred Healthcare Design (UCHD) Team. UCHD is a five-year project funded by the United Kingdom National Institute for Health Research (NIHR) as part of the Collaboration for Leadership in Applied Health Research and Care (CLAHRC) for South Yorkshire. The project is multidisciplinary, drawing on experience in health and design; specifically methods that come from a rich tradition of participatory design research. Over the past five years UCHD have undertaken a

series of case studies exploring the use of design in health culminating in the Better Services by Design project, which looked at sharing design methods with teams from 'health and social care'. UCHD have undertaken a comprehensive evaluation identifying the aspects of the design process that resonated with partners and identifying the key differences that design brings to a service improvement/service design project.

Health and social care as stated previously has a unique set of challenges for design and designers, these might include:

- » Issues around access to vulnerable populations, the ethical and governance framework that surrounds such access.
- » The language barrier between health care and design, from both perspectives.
- » Barriers from different professions to particular methodological approaches.
- » Perceptions from health and social care as to what design is.

The workshop is the opportunity for the service design in health community to identify the range of these challenges, and to reflect on strategies that have worked, or might work, drawn from experience.

The workshop participants along with the facilitators will be encouraged to bring stories that describe challenges from their own practice. Participants will deliver short presentations describing the context for the challenge and then a consensus process will prioritise the top five challenges.

Participants will move between the five challenges and be facilitated to devise strategies to address them and describe the practical steps required for each of the five case studies to overcome the challenges. The presentations of context and the final five solutions will be presented as scenarios and recorded to produce a short film that will be edited and shared with the service design community.

Workshop outcome

Using service design methods is not straightforward in the context of health and social care and there are unique challenges for designers and design researchers working in this area. There is a critical mass of activity taking place in this context and it is paramount that as a community we learn from each other. Using experience and recognising the contribution from other professionals and professions there is a great deal of learning and knowhow that the community can draw upon. This workshop looks to pull this experience together to develop practical advice that will allow service design to move forward and to leverage the benefits of these approaches for staff, patients and carers.

UPDATE: The Outputs of the workshop can be found at <http://www.bsbd.org.uk/lessons-learned/> thanks to all our participants!

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CoCo Cosmos – experiencing a new visual way to develop service businesses

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Abstract

Identifying opportunities for service innovation in the rapidly changing and complex business environments requires easy-to-use tools. This workshop introduces and provides a possibility to test a new tool kit for accelerating service innovation and supporting co-creation activities.

The CoCo Tool Kit is a collection of five tools: 1) CoCo Interview, 2) CoCo Self-assessment, 3) CoCo Continuum, 4) CoCo Tree, and 5) CoCo Cosmos. The first four tools analyze and communicate a company's current business approach. The most powerful tool is the CoCo Cosmos which is an interactive service design game. The game uses cards as a visual method for ideating and visualizing holistic service contexts. Most importantly, the game helps companies focus on customers' contexts and build their value propositions to correspond with customers' needs. In November 2013, the CoCo Tool Kit was nominated as the winner of one of the main categories ("Capacity Building") in the EU Female Inventors and Innovators competition.

Keywords: Co-creation, value co-creation, co-production, co-design, service business

Workshop theme

The concept of co-creation is becoming increasingly prominent in service theories as it is seen to be a promising way forwarding the creation of shared value between individual stakeholder groups. Despite on-going efforts, the concept of co-creation seems to remain debated in both theory and practice for its ill-defined nature and partly conflicting interpretations (Ojasalo, 2010; Keränen & Ojasalo, 2011).

In the CoCo project, Laurea University of Applied Sciences together with its partners has addressed the problem stated above and has developed a practical co-creation tool kit, the CoCo Tool Kit (see Figure 1). The CoCo Tool Kit aims to increase the understanding of the co-creation phenomenon and support co-creation in service businesses. (Ojasalo & Keränen, 2011; Keränen et al, 2013.)

CoCo Tool Kit is a collection of five tools and a workbook that is designed to support service businesses for adapting co-creation activities. First four parts (CoCo Interview, CoCo Self-assessment, CoCo Continuum & CoCo Tree) are dynamic analyzing tools and they communicate about a company's current business approach.

The most powerful tool of this kit is the CoCo Cosmos which applies an innovative method to ideate and visualize the holistic service context, its stakeholders and co-creation activities between the stakeholders. Thus, the CoCo Tool Kit is useful for the service businesses and also for service researchers. (Ojasalo & Keränen, 2011; Keränen et al, 2013.)



Figure 1: CoCo Tool Kit overview

Workshop description

The workshop provides an interactive introduction to the CoCo Tool Kit consisting of a series of individual tools. The particular focus of the workshop will be on the main tool of the kit, the CoCo Cosmos. It is a discussion tool aiming to facilitate the ideation and visualization of the holistic service context, its stakeholders and their co-creation activities. By using the creative card lay method of the CoCo Cosmos, a shared understanding of the complex service context can be established.

General approach:

First, we will briefly introduce the topic, aim and timetable of the workshop. Second, we will show our view of the co-creation phenomenon. Third, we will familiarize workshop participants with the CoCo Tool Kit. After this participants will have a possibility to try out the CoCo Cosmos (see Figure 2) within groups of 6-8 persons.

Workshop outcome

Workshop participants are familiarized with the co-creation phenomenon and its possibilities to tackle challenges in today's complex service contexts. Participants will try out the CoCo

Cosmos tool and obtain ideas how to use it both for the research and for development of service business.



Figure 2: CoCo Cosmos

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Future Worlding for Service Design

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InReality (www.inreality.com)

Workshop theme

Service design aims to take a comprehensive view in creating value and services, as well as to help organizations create mechanisms to deliver and support those services. However, very often service design practitioners do not have an opportunity to consider the implications of a new service in a wider context (social, economic, political). This oversight may also limit the ability to make a significant impact on how we design and create our collective future.

The goal of this workshop is to demonstrate how futures studies (also known as futures or foresight) can help service design practitioners (i) imagine possible future worlds, (ii) create services in the contexts of those worlds (iii) understand systemic implications based on the interaction of the service and the future world. During this workshop we will introduce some of the basic concepts of future studies and drawing from the decades of research in this field, teach and practice specific futures methods to the audience. These methods will then combined with more traditional service design tools (e.g. journey mapping) to demonstrate how futures can empower service design to deal with larger and longer-term change and how service design can help futures in imaging specific user interactions and services in an imaginary world.

Workshop description

The workshop will consist primarily of group activities with some theoretical background and case studies to help the audience familiarize themselves with the methods. First, we will warm up the audience to the idea of futures with an activity called the Polak Game. In it we will explore how people in the audience differ in opinions of how they feel about the future and how much control they have over it. This will be followed by a brief introduction in some of the basic concepts of futures.

Next we will move into the Worlding and Service Design exercise. In this exercise, the audience will be divided into teams and be given a description of an imaginary world. The way the worlds are constructed will follow a specific methodology, which we will also explain. Once the teams read the description of the world they will have to create a service for that world. The service will be the same for everyone (e.g. housekeeping or car wash).

What will be different is the impact of some of the characteristics of the future world on how the service is delivered. The teams will present these services using traditional journey map. The point is not to create a completely new service but imaging how an existing service could fit in a new world.

In the final exercise called Future News Report the teams have to create and re-enact a three-minute news story as if it is reported on TV. The story has to be related to the service that they have just presented. It could be an interview of a business owner or a customer of that service or an imaginary situation involving the service. The goal of this exercise is to start imagining wider implications of a service that the workshop participants have just designed. The news report format serves as a familiar medium, which also gives the stories some sense of credibility. In addition, the idea of reporting something “newsworthy” will also force the participants to create stories in which the service they design has some wider consequence. Teams will re-enact their 3 minutes stories for everyone to see.

In the final stage of the exercise, we will discuss the impact of the exercise and the frameworks on the participants’ thinking process and conduct a Q&A. The agenda of the workshop will be as follows:

Polak Game – 10 minutes

Introduction to Futures – 10 minutes

Worlding + Service Design Preparation – 15 minutes

Worlding + Service Design Presentation - 15 minutes (3 minutes per team x 5 teams)

Future News Report Preparation – 15 Minutes

Future News Report Presentation – 20 minutes (4 minutes per team x 5 teams)

Discussion – 5 minutes

The materials used in the activities above are flipcharts, printouts of journey maps sticky notes, markers. We will need a projector, computer connection, and multi-media speakers in the room.

Workshop outcome

The most useful outcome of this workshop is teaching the participants how to deal with the uncertainty and multiplicity of the future with the tools of foresight, and use these tools to imagine new worlds and service in them.

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Open Badges for Service Designers

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We are Snook, Glasgow, UK

Workshop theme

One of the ServDes themes has proposed the need for “T-shaped professionals with deep skills in a specialty and broader understanding of other disciplines”, and asked us to consider “What are the key competencies and skills Service Designers need to develop to help shape promising Service Futures?”

Snook propose a workshop where these ideas can be explored in depth, and a series of profiles will be created by participants to illustrate the range and depth of skills of people who call themselves Service Designers. This may result in identification of key skills and core competencies that might form a programme for Continuing Professional Development (CPD) for Service Designers.

We will use technology we have been developing as part of the Mozilla Open Badges project with the Technology and Strategy Board (TSB). This technology allows participants to create digital Open Badges using agreed shared technical standards that validate recognised skills and achievements. The badges are a way of visually recording and displaying achievements, qualifications and soft skills.

Workshop description

Snook will explain in detail how the interactive Badgemaker software (www.badgemakerproject.com) works and will support participants in reflecting on particular qualifications, and identifying the core hard and soft skills that are foundational to successful practice as a service designer. This will provide the foundation for identifying obvious skill's gaps and potential areas for cross-disciplinary collaboration to enhance our practise.

Snook will provide materials to allow creation of a range of badges and intend that this workshop will facilitate an indepth exploration of what it takes to be a Service Designer in a fun, interactive session.

Workshop outcome

The key thing we want participants to do is reflect on their own personal skills and qualifications, and create a shared language to describe the key competencies that encompass the full range of soft skills required in service design.

We will give participants a framework within which to describe their skills and introduction to a useful tool for visualising these skills. Making it visual, and capturing this graphically, will help us to clearly describe what it is we are trying to measure, and what it is we value in experienced Service Designers.

Participants will also be able to take home the physical outputs from the digital badges they have created, in certificate or badge form, and display these in their studios.

Open Service Design? Exploring Customer Co-creation in a Service Manufactory

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Customer Co-Creation for Service Innovation – The Foundation for a Service Manufactory

Services are solutions, processes and experiences – intangible and difficult to describe, co-created between the service provider and the service perceiving customer (Bitner, Faranda, Hubbert, & Zeithaml, 1997; Vargo & Lusch, 2004). Whilst customers are acting as co-producers of services on the one hand, the success of a new service is highly dependent on the positive perception of the customer on the other hand (Parasuraman, Zeithaml, & Berry, 1985). For innovating new services, these premises demand a) specific tools that address the characteristics of services and enable the communication and visualization of services (Blomkvist & Holmlid, 2010) and b) the integration of the customer as a co-creator in service innovation (Witell, Kristensson, Gustafsson, & Löfgren, 2011). Service design tools are gaining attention and acceptance across disciplines. Especially service prototyping allows to describe, discuss and develop services more efficiently and collaboratively (Blomkvist & Holmlid, 2009, 2010; Neyer, Doll, & Möslin, 2009; Steen, Manschot, & Koning, 2011). Given these possibilities, service innovation is practicable in interdisciplinary settings not only for but also with customers (Mattsson, 2010). Customers might share their experiences with existing products or function as co-creators for new meaningful solutions (Chesbrough, 2010; Lee, Olson, & Trimi, 2012; Ramaswamy & Gouillart, 2010). As co-creators, customers are given the chance to participate in the creation of future services not only by the integration of their explicit but also their valuable latent needs and tacit knowledge (Chesbrough, 2010; von Hippel, 1994). Today, the integration of customers is characterized by passive and reactive methods mainly, where customers are observed or asked questions to describe their service experiences (I. I. Alam, 2002). Different from that, co-creation for service innovation should be an interactive process, enabling a mutual, two way communication between the customer and the service providing company (Gustafsson, Kristensson, & Witell, 2012; Kristensson, Matthing, & Johansson, 2008; Prahalad & Ramaswamy, 2004).

Even though we know from research, with respect to customer integration is, that mutual co-creation is rarely visible today. If customer integration as a passive or reactive integration is enabled, this happens mainly in closed workshop settings with hand-selected customers fulfilling specific predetermined characteristics (Alam & Perry, 2002; Jonas, Moeslein, & Roth, 2013; Schulteß, Wegener, Neus, & Satzger, 2010). Whilst mutual co-creation of innovation for products is establishing and maturing in the online world, service industries are still lacking an open space for transparent, interactive value creation with customers and other potential future users, non-users and ordinary people. But these and other potential future users, non-users and ordinary people could contribute easily by sharing simple needs, being given the right media to express them (Mattsson, 2010; Piller, 2006). As service experiences are rich and service design mechanisms manifold, online environments often cannot provide the adequate relational depth and variety of experiences and emotions needed for a fruitful co-creation process. We therefore suggest to experiment in offline spaces and to develop the necessary online-offline interactions that allow for rich co-creation processes with real customers, users or non-users. Our suggested solution is a so called service manufactory, an open shop, serving as a platform for co-creative, interactive service innovation between service developing companies and voluntary co-creators.

The Service Manufactory Workshop

What is a service manufactory and what can be done there? This is what this workshop is about. To create a common ground of understanding, the theoretical foundation is presented in the introduction of the workshop by the workshop chair. The need for an open service co-creation space is explained. In a second step, the service manufactory experiment will be described in more detail. In the following, the different interest groups of the service manufactory and the opportunities gained through this experimental space are being spotlighted: Customers are given the possibility to form the future of service offerings as so called prosumers, they can engage in service innovation, learn about innovation processes and experience this new concept with a coffee bar, an event and training location and the interactive co-creation platform. Motivated firms are being guided along the process of co-creation in the manufactory – creating their way to practice of opening up their organisational boundaries and processes to an open unknown space. With this low risk possibility of a service manufactory, they are able to try out new things, to develop, prototype and test new service concepts and business models, to educate employees, get in touch with other service innovators and learn about customer needs in direct exchange. Additionally, manufacturers undergoing a so called “servitization” process from a goods- to a service-product solution logic can experience service processes and direct customer contact in the safe environment for innovation. Researchers are able to explore how the understanding of co-creation can be realized in the real, offline world. The interaction of customers with the companies, their emotions and footprints, but also different ways to attract customers to interact and co-create with service providing companies offer a field of research. After exploring the interaction possibilities for these stakeholder groups, the proposed workshop focuses on the potential of an open service co-creation space for service design experts. In an interactive session of about 60 minutes, workshop participants will create ideas and develop an understanding on the interests, motives and opportunities that service design experts see in the concept of the service manufactory. The session will invite

participants to come up with ways to utilize the concept as a platform for the development of the service design discipline. The results of this interactive workshop will be presented and discussed in the group, challenges and potentials derived.

Workshop agenda

1. Presentation of the service manufactory concept (30 Minutes)
 - a. Theoretical foundation
 - b. The service manufactory “JOSEPHS®”, a prototype of an open space for co-creation
 - c. Stakeholder groups and what the service manufactory can offer to these groups
2. Interactive session:
 - a. Placing the question for discussion: How can service design experts make use of the provided platform for the development of service design? (5 Minutes)
 - b. Group work with provided paper canvases and topic cards as an inspiration to start conversations in the work groups (20 Minutes)
 - c. Presentation of ideas in these groups (20 Minutes)
 - d. Discussion and summary (15 Minutes)

Workshop outcome

In this workshop, we want to inform about the concept of the service manufactory to open up a discussion on the possibilities of service design with respect to the tension points online/offline and closed/open customer co-creation in service innovation. Workshop participants are engaged to develop their perspective as experts in service design on open co-creation of service innovation. In our group works and discussion, we invite to build ideas for the further development of service design thinking and discuss different ways for the adaption and implementation of service design in the service manufactory as a new and challenging environment for the co-creation of service innovation.

People will take home new thoughts and ideas about how service design might work in an open space – or not – and get inspiration about the customer integration as mutual co-creators in their business, consultancy or research setting.

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Co-creation with co-workers as a creative method for improving service in the Health care domain

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Workshop theme

To be able to give excellent service many departments need to work together so that the customer isn't lost at any point. Besides this individual co-workers need to see their part in providing service for the customers. This is a challenge – especially for big companies. Unfortunately, the challenge is often tackled by sending memos with endless descriptions of everyone's responsibilities. Or in the worst case, it is not handled at all.

At Antrop we have worked with co-creation with co-workers as a method for improving the given service. It has the advantages of:

- » Pinpointing where the service needs to be improved
- » Effectively finding creative solutions
- » Getting different departments to start communicating
- » Individuals seeing their role in the service chain

In this workshop we will share our experience from service design projects within the health care domain. One of the projects concerns providing health care for the most elderly in the right place at the right time. To prevent illness and to provide dignified care at the end of life is challenges that stress the need for different health care providers to co-ordinate their efforts. Despite the sense of urgency to improve everyday life for elderly patients, it is clear that structural deficits in the health care system hinders communication, innovation and improvement.

We believe one of the key factors to changing these tendencies is to show decision makers and co-workers what context their work is part of and how what they do – or don't do – affect other care givers and the patients. For example, showing actual patient data and quotes in a patient journey map across time, health care interventions and health care providers has proven to be a very promising starting point for structured discussions. Paired with a clear agenda and the right set of questions, this kind of visualisation can motivate co-workers to identify pain points and find ways to improve coordination, allowing each care giver to focus on their core assignments and thus improving health care for the patients.

Workshop description

Our workshop proposal is to share our experience and insights from two real life service design projects where the main aim has been to inspire co-worker driven improvements in different health care organisations.

Key points for the workshop:

- » Pinpointing where the service needs to be improved
- » From dull data to engaging patient journey map
- » How to engage and motivate co-workers in co-creation workshops

The schedule for the workshop:

- » 15 min insights from two real life service design projects in the health care sector
- » 30 min exercise 1. We will provide the attendees actual data to work with. They will sketch their own customer journey maps in groups.
- » 15 min tools and methods for co-creation
- » 30 min exercise 2. Attendees will take the roles of the service design team and the caregivers respectively and play their scenarios out as role-play.

Workshop outcome

We want to inspire and teach tools for co-worker driven improvements in different health care organisations. We also want to show how a patient-centred approach, with tools such as patient journey maps, can be a great way to motivate co-workers to engage in the improvements. The project experiences we share and the methods we teach in this workshop will also be relevant for companies and organisations working in other domains.

Forums



Service Design & Research Forum

¹Daniela Sangiorgi, ²Alison Prendiville, ³Lia Patricio, ⁴Don Allen

¹Lancaster University, UK; ²University of the Arts London, UK; ³University of Porto, Portugal; ⁴CISCO and ISSIP member

Abstract

Service Design Research has been developing considerably in these last few years, with more research centres approaching designing for services from different design backgrounds. As we can see from the ServDes2014 conference programme, services as a new object for Design, touch many existing fields of innovation and requires contributions related to methodological development (i.e. co-design, empathic design, etc.), sectorial development requirements (i.e. healthcare, transport, education, etc.), delivery channels design (i.e. digital services, social interaction, touchpoints, etc.) as well as related to the development of theoretical frameworks and foundations. At the same time Service Design researchers are approaching the wider academic fields of Service Research and Service Science to position Service Design within the global and multidisciplinary debate around service innovation.

This forum builds on an on-going UK Art and Humanity Research Council funded network on Service Design Research, surveying Service Research priorities, and generating Special Interest Groups discussions, as part of the International Society of Service Innovation Professionals (ISSIP). The forum aims to initiate the development of an international map of Service Design Research to compare and link it with, contemporary research priorities and themes as currently discussed in Service Research and Service Science. Workshop participants will actively contribute to this mapping exercise and to the following discussion.

Questions

- » What are the growing centres, themes and questions for research in Service Design globally?
- » How are these emerging themes related to contemporary research priorities in Service Research and Service Science?
- » How are they different from each other?

Service Design and Education Forum

¹Lara Penin, ²Beatrice Villari, ³Stefan Holmlid

¹Parsons The New School for Design, New York, USA; ²Politecnico di Milano, Milano, Italy; ³Linköping University, Linköping, Sweden

Abstract

Today's designers are increasingly being asked to design services and systems intended as new challenges for societal change, for new ways of production and consumption, and for new governments and the private sector. In response, our current educational missions also need to change. Current design approaches, inspired by user experience and user-centered design, are necessary but insufficient in adequately training students in how to take on these new design challenges. An open question is how we best design the curricula of the future to best accommodate for designing future product service systems and services and systems intended for contemporary society.

This session invites a core group of design educators to compare and contrast their educational approaches to managing the increasing breadth and complexity of service design. We hope to bring together leaders in academic service design to discuss their thoughts and experience in creating new service design curricula, or instead tuning more traditional curricula in industrial and communication design. We hope to promote an international discussion about service design pedagogy and how it has led to the development of service design practice and careers.

Questions:

- » What are core competences future service designers should learn, considering both technological and people-centred aspects in service design practice, what are the key multidisciplinary combinations being taught and how do they inform different professional profiles?
- » Assuming service design pedagogy is mainly project based, what is the landscape in terms of scope and modalities of projects offered to students in service design courses - that will result in graduate portfolios, and what are the theoretical fundamentals that sustain this model?

Service Design & Social Innovation Forum

¹Ezio Manzini, ²Carla Cipolla, ³Adam Thorpe,

¹DESIS Network, ²Universidade Federal do Rio de Janeiro, DESIS Network; ³University of the Arts London, DESIS Network

Abstract

Social innovation is a dynamic phenomenon, with solutions emerging and moving from the margins of society to the mainstream. The word “social” in “social innovation” refers both to the means and the end. As a means, it indicates that these innovations are based on the capabilities of the people who activate and benefit from the innovation, and on unexpected interactions and partnerships between citizens, institutions, businesses, and governments. As an end, it indicates that the social effort is targeted to solve commonly recognized problems that existing businesses and technological solutions have failed to address. This implies that design discipline (and service design) can have an important role in identifying these small, local social inventions and their working prototypes, and make them spread to address economic, social and environmental challenges.

Research activities on service design for social innovation - particularly undertaken in DESIS Network - have identified a particular kind of service configurations known as collaborative services: services where the final users are actively involved and assume the role of service co-designers and co-producers. Recognition of the collaborative service model led to the coining of another one: relational services, in which participants need not only to be operationally active and collaborative, but also well inclined and willing to relate with others in an intensive personal manner.

Questions

- » What service design discipline is learning from the activities on design for social innovation and vice-versa?
- » Could social innovations be an important source for innovation in the service sector, bringing into light new service configurations and, consequently, enlarging the definition of “services” itself?

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