

one among many

learning and evaluating design in the public sector

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Declaration of Authorship

I, Angela Fernandez Orviz declare that the enclosed submission for the degree of Doctor of Philosophy and consisting of textual dissertation meets the regulations stated in the handbook for the mode of submission selected and approved by the Research Degrees Sub-Committee.

I declare that this submission is my own work, and has not been submitted for any other academic award.

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Abstract

This research responds to an increasing interest in understanding, evidencing and promoting the value of design in the public sector, and a lack of academic research and specifically Scotland-based empirical studies in the area. There is growing evidence of the value that design approaches can contribute in public sector contexts; however, its demand in the UK public sector has not scaled up as expected. With the purpose of identifying opportunities for enhancing design's uptake in public sector contexts, this research studies how public sector professionals evaluate the application of design strategies and methods in their work, and what shapes their decisions.

Rather than focusing on the outputs and impact that mark design's contribution within the public sector, the empirically-developed research questions within this thesis address a gap in the literature by examining public sector professionals' uptake of design-led innovation as a process. Through the qualitative study of six design-led innovation projects undertaken by Scottish public sector organisations, this research sought to understand public sector professionals' interactions and decision-making processes as they assess the appropriateness of introducing design strategies and methods in the particular contexts of their work, and what factors influence the construction of those perceptions and decisions. These insights are crystallised into two conceptual frameworks: firstly, describing public sector professionals' learning and evaluation processes, and secondly, providing a taxonomy of factors influencing public sector professionals' uptake of design strategies and methods.

The research findings reveal gaps in design communication that expose the inadequacy of one-size-fits-all representations of design to effectively communicate design to public sector professionals. Consequently, this research argues for the need to develop context-specific articulations of design-led innovation approaches in terms of their role, value, strategies and methods as a means of enhancing their comprehensibility and credibility in public sector contexts. Thus, this research contributes to improving the communication and promotion of design-led innovation approaches in public sector contexts.

Preface

I arrived in Scotland ten years ago as an Erasmus Exchange student in Mechanical Engineering. A year later I embarked upon the adventure of studying the Masters in Design Innovation at Glasgow School of Art in its first year of tuition. That year was transformative at many levels. I had never heard of Service Design, nor had I ever reflected on the environmental and social impact that conscious and unconscious design could have. Trained as an engineer, the term improvement was a synonym of achieving cost efficiencies and technical optimisation. As for some of the public sector professionals involved in this research, design's emphasis on the human experience came as a surprise to me. But possibly the greatest imprint that design has made in me as a professional is feeling entitled to questioning how things are done, to imagine and believe that a better way is possible.

But these changes in mindset took time. Some of the most sceptic views of design displayed by research participants mirrored my first impressions. As some research participants, I struggled to see how design could tackle complex problems. In the end, it just seemed like common sense. Through my engagement in learning and practising design, however, I have reconfigured my understanding of common sense as not universal and multifaceted, not evident until made explicit, and easier said than done. Now, whether an idea or insight feels like common sense, lacks relevance, as the seemingly simplest intervention can have a major impact or a complex implementation.

From design sceptic to design devotee, I now believe in the social, economic and environmental value that design approaches can have. My conversion to design, however, diverged drastically from that of research participants, as my learning experiences were free from the time pressures, ethical and financial responsibilities, organisational constraints and standards that shaped public sector professionals' experiences. These reflections become tangible in some of these research propositions for design capacity building in the public sector.

Research findings speak to the need for articulating design for different peoples. My work at the knowledge exchange project Moving Targets, where I explored the application of design approaches in the creative and media industries, may have attuned my ears to perceive how research participants spoke about design, their work and their contexts. In this practice-based research project, I worked with small companies in a wide range of sectors, from video-games to poetry, from documentary film to radio, to social innovation projects that wanted to harness digital technologies. Slightly adapting my language and descriptions of design's potential roles and contribution depending on who was listening emerged intuitively in my practice. It seems common sense. But articulating what design-led innovation is and what it can do, is easier said than done. Designers are continuously seeking new ways of describing the emerging roles, approaches and applications of design to support communication and uptake outside the discipline. However, design research has rarely looked at how professionals from other fields make sense of design, how they construct meaning and assess its suitability.

This research study of how public sector professionals evaluate the suitability of design-led innovation approaches, strategies and methods, has opened up many questions. I see the findings and proposals of my exploration as doors to new areas for investigation rather than solutions. By examining small gaps in design communication and capacity building, the discipline can reach a deeper understanding of how design innovation practices fit within public sector contexts, where are its limitations and where it shines, and, as captured in this thesis title, how it sits among other more established methodologies and methods.

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Glossary of Terms

Constructivist epistemology: meanings and knowledge are dynamic, constructed and modified through individuals' experiences and interactions with the world.

Constructivist or Naturalistic methodology: qualitative inquiry that takes place in the natural setting of the interactions studied. Naturalistic or constructivist studies cannot be rigidly designed beforehand, as their design emerges in response to the inductive and iterative analysis of empirical data.

Constructivism: Building on a constructivist epistemology, constructivism emphasises individuals' cognitive processes in constructing meaning.

(Social) Constructionism: Building on a constructivist epistemology, social constructionism emphasises social processes in constructing individual and collective meanings.

Design-led innovation approaches: This research uses design-led innovation as an umbrella term to refer to design approaches and practices that seek socially and environmentally responsible solutions to often complex and immaterial challenges, and emphasise the relevance of understanding the context and the perspectives of different actors. For simplicity, this research often refers to design-led innovation approaches more generally as *these* design approaches or practices.

Direct interpretation: analytical method that builds on the researcher's intuitive sense-making of empirical data and seeks to harness the researcher's knowledge to interpret what is happening.

Flexible research design: when the research design is not rigidly designed beforehand but is adapted to the evolving research situation. The selection of participants or cases, data gathering and analytical methods are guided by emerging empirical insights and concepts.

Empirically developed: inductively developed from empirical materials (see inductive)

Exploratory research or study: preliminary inquiry concerned with discovery that seeks to ground research questions and approach to the phenomena on empirical data or to formulate a hypothesis in a new area of research.

Inductive: method or approach through which concepts are constructed or developed from empirical evidence.

Instrumental case study: when the bounded phenomena studied (e.g. individuals, projects or organisations) is the means to understand something else. It is instrumental to understanding a particular or broader issue, or developing theory.

Meanings are mental, linguistic or visual representations of reality, such as values, rules, mental models, beliefs, or perceptions.

Meaning Construction refers to the mental and social processes through which individuals (and social groups) create meaning themselves and for others.

Participant Observation: research method through which the researcher immerses herself in a social setting, observing and participating in interactions.

Participant as observer: the researcher acts as a complete participant involving herself as a member of the social setting, while participants are aware of the researcher's status as a researcher.

Observer as participant: The researcher does not engage in the social setting as a member and acts primarily as an observer with little involvement in participants' activities.

Practice-based: refers generally to the instrumental inclusion of the researcher's design practice, not as the objective of the research, but as an integral part of discovery, as a means to collect data or structure reflection.

Practice-based case studies: Researcher's involvement, as an innovation designer, in the projects studied. This practice responded to the needs of the context and was instrumental in gaining access to real public sector projects and gathering empirical and experiential data from the inside.

Practice-based analysis: Use of design visualisation methods as a sense-making tool to articulate research findings. This kind of practice was initiated by the researcher as a means of exploration and responded to analytical needs. Its outputs embody statements or questions that the researcher sought to understand or critique.

Public sector professionals: all those involved in public sector work (see *public sector work*) independently of their skillset, area of practice, position within the organisation, or role within the design projects studied.

Public sector work would include the design, provision, management, and administration of services offered both internally to employees and externally to the public or partnering organisations.

Reflexivity: the researcher's examination of her experiences, decisions, and interpretations in relation to both research and practice. This examination seeks to (a) increase the transparency of the study and inform research decisions and interpretations by making

Glossary

explicit the researchers' assumptions and beliefs that can bias results, and (b) to harness the researcher's tacit knowledge as design practitioner to guide the inquiry.

Unit of analysis: is what is being studied, the main entity being analysed.

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Chapter 1

INTRODUCTION

1.1 Empirical context and rationale

This research examines the uptake of design-led innovation approaches by public sector professionals specifically in the context of the Scottish public sector. Note that this thesis uses the terms design and public sector quite broadly. The public sector encompasses all kinds of services, varying widely in their offerings and contexts (Mager, 2016, p.19; Bradwell & Marr, 2008, p.36). By *public sector professionals*, this research refers to all those involved in public sector work independently of their skillset, area of practice, position within the organisation, or role within the design projects studied. *Public sector work* would include the design, provision, management and administration of services offered both internally to employees and externally to the public or partnering organisations. Regarding the term design, there are a variety of design approaches used in different public sector areas with a wide range of purposes (Armstrong et al., 2014, p.24; Kimbell, 2009b, p.9; Bradwell & Marr, 2008, p.21; Yee et al., 2015a, pp.2, 14). This research focuses a particular set of design approaches, set under the umbrella of design-led innovation, that are characterised by their emphasis on understanding the context and gathering the perspectives of different users and stakeholders, and their focus on immaterial challenges, such as the design of services, experiences, relationships or systems. It is worth noting, however, that the thesis often uses simplified terms such as ‘design’ or ‘these design approaches’ in contrast with more inclusive terms such as the discipline or field of design.

In the last decade, there has been a growing interest in the incorporation of design-led innovation in the public sector (McDonald, 2017, p.311; Armstrong et al., 2014, p.38; Mulgan, 2014), both in the UK and globally. The convergences between design innovation approaches and public sector policies emerge from (Figure 1), on the one hand, design’s expansion beyond the production of tangible outputs and the growing maturity of social,

strategic, and collaborative practices (Suri, 2005, pp.168–169; Sanders & Stappers, 2008, p.11); and on the other hand, the public sector’s on-going shift from top-down approaches towards the co-production of value (Evans & Reid, 2013, p.23) and the growth of public policy encouraging citizen-centric, participatory, and collaborative approaches to service and policy design. The incorporation of design innovation in the public sector has also been fostered by the wider dissemination and popularisation of Design Thinking (Brown, 2008; Björgvinsson et al., 2010; Kimbell, 2011a) and the digitisation of public services (Podger et al., 2012, p.107; Cottam & Leadbeater, 2004).

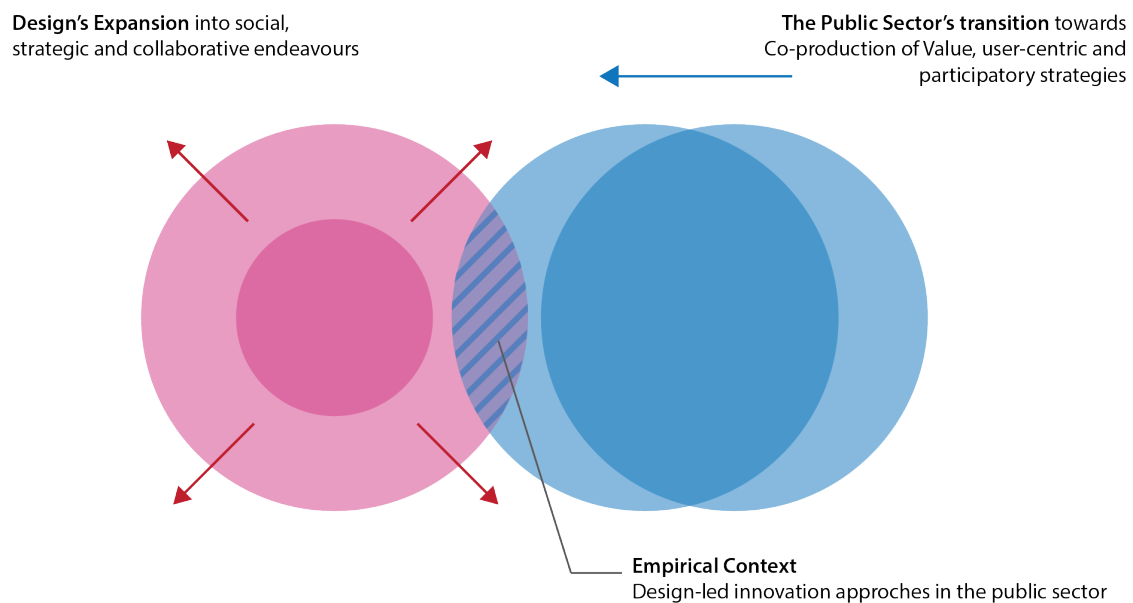


Figure 1 Scope of Empirical Context (Author, 2018)

With design methodologies constituting ‘an emergent, rapidly accelerating global trend’ (Bailey, 2016, p.14; Podger, 2012, p.85), there is growing evidence of the value that design approaches can contribute in public sector contexts (Design Council, 2015; Kotamraju & van der Geest, 2012a; Podger et al., 2012; Design Council, 2013). However, in the UK, this demand ‘has not scaled up as expected’ (Siodmok, 2013), as design-led innovation still occurs at the fringes of the public sector (Siodmok, 2013; Design Council, 2015; Thoelen et al., 2016; Bradwell & Marr, 2008; Brecknell, 2013) and often through initiatives driven by innovation bodies, such as the Design Council and Nesta. Much of the contemporary design

research and innovation programmes are aimed at creating demand, raising awareness, and demonstrating design's value in these contexts (Yee et al., 2015b, pp.4–5; Swiatek, 2016, p.8; Mager, 2016, p.13; Nesta, 2015). This focus suggests that design still lacks visibility or public sector professionals are not yet convinced of its contribution or suitability. To better understand what leads to the uptake or rejection of design-led innovation approaches in public sector contexts, this research seeks to understand how public sector professionals make decisions about its suitability in their work.

The incorporation of design-led innovation approaches in public sector contexts is not a new topic. Yet, scoping studies from the Arts and Humanities Research Council (Flood & Lambert, 2012, p.5; Armstrong et al., 2014, pp.8, 49) and other researchers (Podger, 2012, p.86; Mulgan, 2014) note a lack of criticality in empirically-based UK research. This has been partially attributed to the fact that design research has been neglected by academia and pioneered by innovation bodies, which seek practical impact and are less concerned with academic rigour and knowledge generation (Armstrong et al., 2014, p.49). This research will argue (p.72) that the field's need to demonstrate its contribution to the public sector might have enticed design research to have an excessive focus on the outputs and impact of design practices; while literature examining the interactions and mechanics of its incorporation in public sector contexts is less established. In response to this gap, this research focuses on process rather than outputs, as it does not seek to prove design's contributions, but to understand how public sector professionals judge its suitability.

This research understands design uptake as a contingent output of public sector professionals' decision-making processes regarding the suitability and application of design strategies and methods in their work. A systematic investigation of how those decisions come into being could potentially offer insight into: (1) public sector professionals' needs, limitations, expectations and aspirations as they evaluate design; (2) why they may render design as unsuitable; and (3) lessons, strategies, and ideas for enhancing uptake.

As the next section describes in detail, this research investigates *how public sector professionals evaluate the application of design approaches, strategies and methods in their work; and what shapes their decisions*. The research questions seek to contextualise decision-making in relation to their particular social contexts and interactions with design practice and practitioners. The research objectives (RO) are:

RO1. to understand what shapes public sector professionals' decisions of design's suitability;

RO2. to capture public sector professionals' decision-making processes as they evaluate the suitability of design approaches, strategies, and methods in their projects; and

RO3. to identify gaps and barriers to public sector professionals' uptake of design approaches, strategies and methods, and, if possible to identify strategies for enhancing evaluation and uptake.

1.2 Research design

This research was exploratory and inductive in nature: inductive because it sought to develop research questions and theory from empirical insights (Charmaz, 2014, p.188; Bryman, 2004, p.540; Creswell, 2007, pp.19, 21), and exploratory due to the lack of previous studies on public sector professionals' decision-making processes to guide the investigation (Maxwell, 1996, pp.44–45; Creswell, 2013a, p.18).

The research began with a general interest in how design practices that are collaborative and socially-driven fit within public sector work; and a scoping or exploratory study (Maxwell, 1996, p.44) to inductively develop research questions and aims from empirical data. This study took a naturalistic approach (Robson, 1993, p.61; Lincoln & Guba, 1985, pp.39–40) by studying interactions in their natural context – real design-led innovation projects in the public sector. The researcher chose to participate as an innovation designer in the projects studied to ground the research into real-world practice and harness her design sensibility (Fallman, 2008, p.17; Glanville & van Schaik, 2003; Robson, 1993, pp.37–38, 447; Creswell, 2007, p.97). This design practice (see p.51) mirrored commercial design

innovation consultancy (Fallman, 2008, p.6), and was instrumental in gaining access to real public sector projects and gathering empirical and experiential data from the inside (Durling, 2002, p.82). Early interactions revealed diverging perceptions between the designers team and public sector professionals regarding the potential roles and contributions of design and designers, and brought into focus the relevance of public sector professionals' perceptions and preconceptions of design in their decisions of when and with what purposes to seek design support and apply design methods. These insights formed the core research question (RQ1): *what shapes public sector professionals' decisions on the application of design approaches?*

The research continued to observe decision-making beyond procurement, as participants considered the suitability of different design methods and strategies at different stages in their projects and at evolving degrees of design awareness. This continuity gave a temporal dimension to the inquiry, where every instance of decision-making became part of a broader evaluation process. This new dimension prompted a sub-research question (RQ2): *how do public sector professionals evaluate the application design approaches, strategies and methods in their work?* These two lines of inquiry into the micro and the macro levels of decision-making can be articulated as: *how do public sector professionals evaluate the application of design approaches, strategies and methods in their work; and what shapes their decisions?*

The methodology chapter (p.93) describes in detail the Theoretical framework used to conceptualise evaluation as a dynamic social process of meaning construction (Leeds-Hurwitz, 2006, p.232; Charmaz, 2014, p.184). When speaking of meaning construction, this research refers to the processes (both cognitive and social) through which individuals create meaning for themselves and for others. These meanings are mental, linguistic or visual representations of reality (Kvale, 1995) and can be understood as the beliefs or mental models that guide public sector professionals' behaviour, views, decisions, use of language and actions (Leeds-Hurwitz, 2006, p.232; Charmaz, 2014, p.184). These meanings can be individual or collective, for example, if shared by a social group. In summary, to understand

the meanings and processes that play a role in shaping public sector professionals' uptake or rejection of design strategies and methods in their work, this research studies how their decisions emerge and evolve through their interactions with design practice and practitioners in the particular contexts of their projects. In doing so, the research seeks to inductively reconstruct from empirical evidence (Charmaz, 2014, p.188; Bryman, 2004, p.540; Creswell, 2007, pp.19, 21) public sector professionals' learning and evaluation processes and the broader ecosystem shaping their decisions.

The research design was refined and took the shape of naturalistic or constructivist case study (Guba & Lincoln, 1994, p.111; Lincoln, 1995, pp.286–287) characterised by (1) the qualitative study of public sector professionals' interactions and decision-making processes within the bounded conditions of their project contexts; and (2) the iterative refinement of the research design in response to the analysis of empirical materials.

The three case studies (including the scoping study) were all based in the Scottish public sector and served to (1) orientate the research; (2) conceptualise public sector professionals' evaluation processes and the broader ecosystem shaping their decisions from empirical insights and the literature; and (3) refine those conceptualisations (see pages 29 and 30 for a summary of the research design). The first two cases were practice-based studies (see p.51) and focused on a single project each, while the third or main case observed four projects from four different organisation as they participated in a project-based design training programme for the public sector. The research compares these six design-led projects and examines the similarities and differences in how public sector professionals' evaluate design attending to the different purposes and contexts of their projects. The projects studied ranged from service improvement and innovation – both public-facing and internal to the organisation – to organisational change, to the integration of services provided across multiple organisations. Through these projects the researcher interacted with central government, local Councils and other Scottish-wide public sector bodies.

To study public sector professionals' interactions with design and designers and understand their contexts, projects, and organisations; this research included a variety of

methods (see p.120), including interviews, participant-observation, and documentation from projects and organisations.

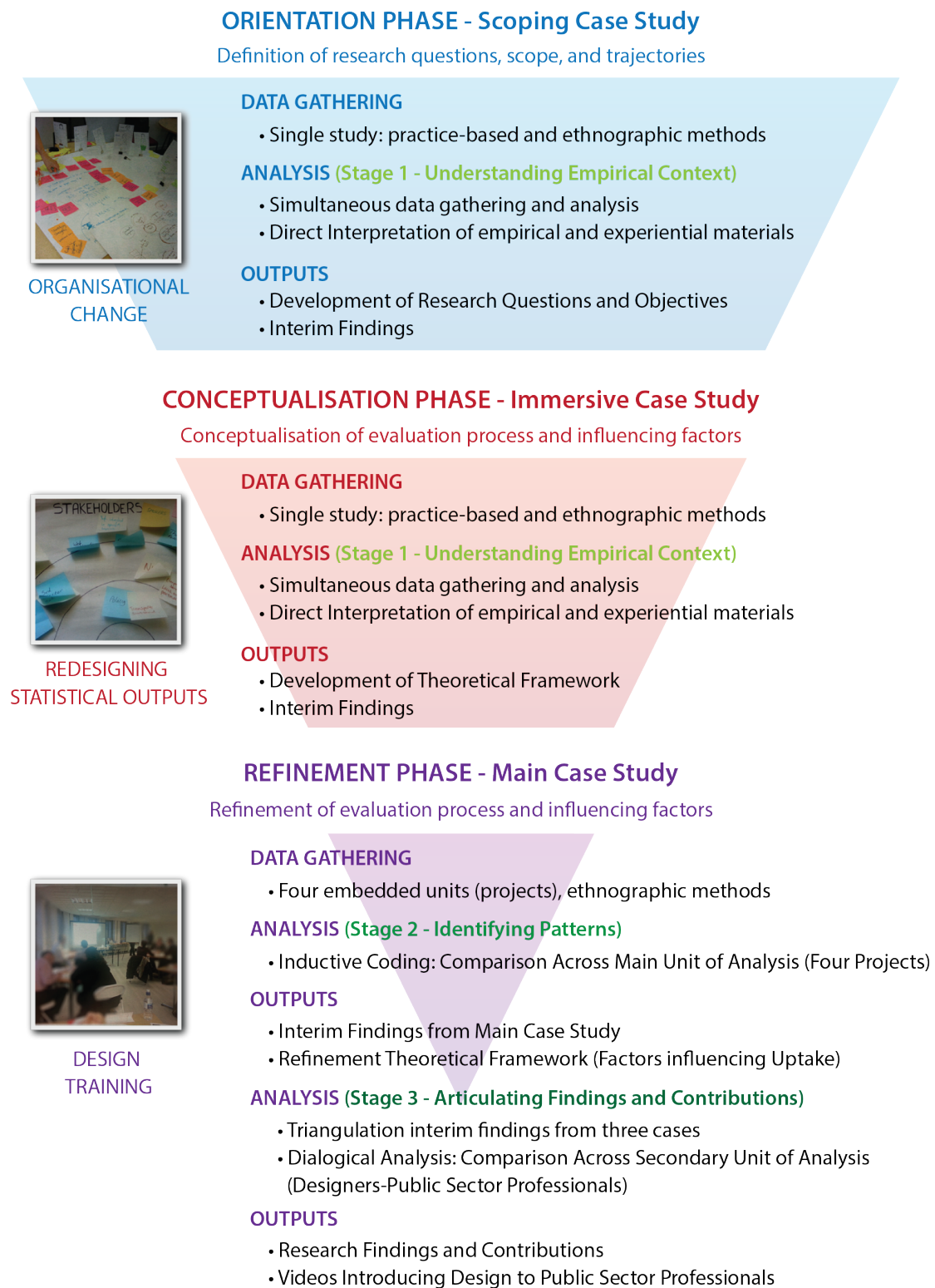


Figure 2 Overview of Research Design (Author, 2018)

Table 1 Summary Table: research aims and objectives, questions, methodology and design

AIM & OBJECTIVES

- To understand what may limit public sector professionals’ uptake of design approaches, strategies and methods in their work in order to develop strategies for enhancing uptake.
- RO1. To understand what shapes public sector professionals’ decisions of design’s suitability.
- RO2. To capture public sector professionals’ decision-making processes as they evaluate the suitability of design approaches, strategies and methods in their projects.
- RO3. To identify gaps and barriers to public sector professionals’ uptake of design approaches, strategies and methods, and, if possible to identify strategies for enhancing evaluation and uptake.

RESEARCH QUESTIONS

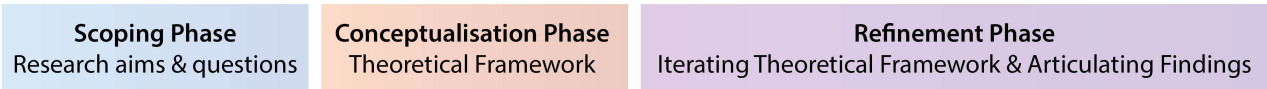
- RQ1. How do public sector professionals evaluate the application of design approaches, strategies and methods in their work?
- RQ2. What shapes public sector professionals’ decisions on the suitability design approaches, strategies and methods in their work?

METHODOLOGY

Constructivist or Naturalistic Case Study
 Qualitative study of public sector professionals’ interactions with design practice and practitioners in real design-led projects in the public sector.
 Flexible research design, where the selection of cases, data gathering and analysis, evolve in response to emerging empirical insights and concepts.

RESEARCH DESIGN

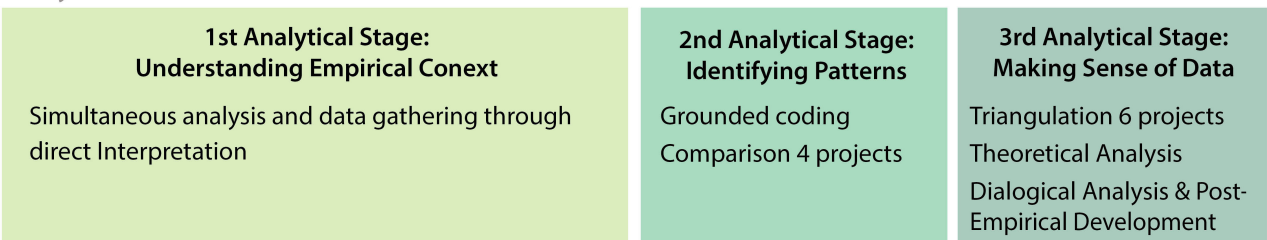
Research Phases



Case Studies and Projects



Analytical Phases



1.3 Analysis and research outputs

During the scoping and conceptualisation phases, as pages 29 and 30 show, the data was simultaneously gathered and analysed through direct interpretation (Stake, 1995, p.74), which draws on the researcher's knowledge to make sense of empirical materials. This method of analysis was best suited to harness experiential data and the researchers' design expertise. This analysis, complemented with the relevant literature, served to develop the theoretical framework (see p.93), and in doing so, (1) conceptualising evaluation as a process of meaning construction; (2) defining the layers of social interaction shaping those meanings; and (3) establishing what data was relevant for answering research questions.

To refine these conceptualisations, the second analytical stage adapted methods from constructivist grounded theory (Charmaz, 2006) to the purposes of case study analysis and used inductive coding (Charmaz, 2006, p.3, 186; Maxwell, 1996, p.79): developing codes and categories from the empirical data in order to fragment and compare the data and identify patterns across the four projects included in the main case study. This refinement phase continued through a third analytical stage concerned with refining these conceptualisations and articulating findings and contributions. Interim findings from all six projects were triangulated or cross-checked (Maxwell, 1996, p.75-76,93-94; Bryman, 2004, p.275) to assess their consistency. 'Clustering' (Charmaz, 2006, p.86-87), visually mapping categories to understand the relationships between them and construct theory, was useful in refining conceptualisations of *the learning and evaluation process* and *the public sector ecosystem*.

This analysis not only answered research questions but also highlighted the relevance of design communication. This insight led to a dialogical analysis (Berniker & McNabb, 2006, p.645), which establishes a dialogue to posit antithetical views as a method of elucidating the assumptions underpinning those views. The aim was to explore the diverging views between designers and public sector professionals regarding the suitability, role and contribution of design in public sector contexts. It is worth noting that this dialogical exploration was practice-based (see p.51), and included *the procurement ladder* and a series of illustrated videos introducing design. This dialogical analysis served to articulate key research findings,

identify gaps in design communication and offer strategies to enhance the credibility and comprehensibility of design discourse.

The title of this thesis paraphrases a research participant and depicts a key research finding regarding how design is conceptualised and evaluated in relation to other methodologies and methods already established in the public sector, with design being just *one among many* other (similar) options. The gaps and strategies identified challenge the notion of the one-size-fits-all design discourse and training, and emphasise the need for tailoring design communication and capacity building strategies to how public sector professionals' construct meaning and evaluate the suitability of design-led innovation approaches, strategies, and methods. This research contributes to the field by establishing designers' responsibility and scope of action regarding public sector professionals' uptake of design; and contributes to the development of descriptions and representations of design that build the comprehensibility and credibility of the approach and meet public sector professionals' needs and expectations when learning evaluating its suitability.

1.4 Thesis structure

This first chapter has provided an introduction to the rationale, questions, scope and methodological approach and outputs of this research. The second chapter of the thesis presents a review of the relevant literature and describes in detail the empirical context and rationale for the research. Firstly, it discusses the emergence and expansion of design-led innovation approaches within the wider field of design, and in doing so, it defines the core characteristics of design-led innovation practices. Secondly, it discusses the public sector's paradigm shift from considering citizens as passive consumers towards co-production of value and its discursive convergences with design. It also reviews how policy has evolved in the UK and specifically Scotland to encourage participatory and collaborative practices, and the methodologies the public sector is using to this end. Finally, it provides an overview of contemporary design research and practice within the UK public sector, identifying the gaps in the literature addressed in this research.

Chapter three is the methodology chapter. It begins with a literature review on the social construction of meaning, which is core to both the theoretical approach to studying evaluation and the research design; and introduces the theoretical framework, which builds on empirical insights and the relevant literature. Then, it explains the reasoning behind the selection of constructivist case study methodology, and describes the research design and its different phases. Finally, it also details research tactics for data gathering and analysis.

Chapter four presents the case studies undertaken for this research, providing an overview of the six design-led innovation projects studied, their contexts, and public sector professionals' interactions with design practice and practitioners. The scoping case study was a single practice-based study, and looked at the use of design at post-implementation stages of organisational change. The immersive case study also was a single practice-based study, and looked at alternative ways of publishing statistical data. The main case study was a multiple ethnographic case study, and looked at the four projects that participated at the Design Council's training programme for public sector organisations.

Chapter five then goes on to present the research results articulating key research findings, and Chapter six answers research questions, discusses research findings and presents research conclusions. The latter argues for the need to develop training and communication strategies and materials that are specifically targeted to public sector professionals, to enhance the comprehensibility and credibility of design-led innovation approaches, strategies and methods. The final chapter discusses the theoretical and practical contributions of the research, its limitations, and suggests trajectories for future research.

Some of the appendices are also worthy of note. Detailed descriptions of the analysis are included in the appendices because their detail distracted from the main narrative. While the analytical approach and how different analytical phases are included in the Methodology and Findings Chapters, appendices G, H and I describe the analytical strategies and procedures used and explain the decisions made in each of the analytical stages respectively. It is advised to read Appendix I after Chapter 6, as it describes the process of articulating findings and contributions.

Chapter 2

SCOPE OF CONTEXT AND LITERATURE REVIEW

DESIGN-LED INNOVATION IN THE PUBLIC SECTOR

This chapter aims to contextualise and evidence the arguments and the rationale for undertaking this doctoral research and includes a review of the relevant literature. The first section, entitled ‘Design’s expansion and approaches under study’, is concerned with situating this research within the field of design and defining the design practices under study. This section includes a discussion of the design literature and examines design’s expansion to determine the main characteristics of design-led innovation approaches.

The second section, entitled ‘A transitioning public sector and an opportunity for design’, is primarily concerned with exploring the convergences and divergences between the public sector and design-led innovation practices at discursive and practical levels. The section begins by describing the public sector’s paradigm shift towards citizen-centred and participatory approaches to service design and delivery. It also provides an overview of the methodologies and approaches that the public sector has incorporated to this end, and contrasts these with the characteristics of design-led innovation practices. Finally, this section provides an overview of how this paradigm shift has changed the policy landscape in the UK and Scotland.

The final section, entitled ‘Design in the public sector’, delves into the literature on design’s applications in public sector contexts, critically discussing its growth and impact in the UK. This section serves both to provide an overview of the practice and research landscapes and to articulate the knowledge gaps addresses in this research.

2.1 Design's expansion and approaches under study

The difficulty of defining design is a long-standing problem in design research (Armstrong et al., 2014, p.36), as it is a broad term subject to multiple interpretations. Throughout the literature, design appears framed in a variety of ways: as a cognitive skill, an object, an approach, activity or process, a profession or a discipline (Papanek, 1972, p.3; Lawson, 2006, p.4; Kimbell, 2011b, p.285; Bucolo, 2014, p.4). Attending to the shared attributes of design definitions identified by Friedman (2003, pp.507–508), this research understands the activity of *designing* as a 'goal-oriented' process aimed at 'solving problems, meeting needs, improving situations or creating something new or useful'. This research refers to *design-led innovation* as an approach to designing that cuts across different design disciplines (p.37), and acknowledges that design practice comprehends not only its physical activities but also has cognitive, social, and emotional components (Yee et al., 2015a, p.1).

Firstly, this section will argue that, with design's expansion into new areas of application, the boundaries between disciplines have blurred. This blurred boundaries explains the researcher's choice to use 'design-led innovation' as the overarching term to refer to a variety of approaches and practices. Secondly, this section defines some of the core characteristics of these design approaches by contextualising key historical events and shifts in the field that gave emergence and shaped the development of these practices. The final section situates the researcher's design practice within the wider definition of design-led innovation, speculates the contribution of design in the public sector, and describes the roles that design practice has played in the research.

Before delving into the detail of how disciplinary boundaries have blurred, it is worth elaborating on what this research means when referring to design's expansion. It could be argued that the work undertaken by the Design Council – one of the UK's key players in the research and promotion of design (see sections 2.3.1 and 2.3.2) – reflects the general trajectory followed by the field. Set up in 1944, the Design Council was very much product-oriented in its origins, focused on improving 'the UK's industrial design standards in goods manufacturing to support Britain's economic recovery' (Design Council, 2018b) after World

War II. In the 1990's the Design Council's strategy shifted to focus on customer understanding and the impact of design in business strategy. With the turn of the century, social innovation through design became one of the primary areas of focus of the Design Council (Design Council, 2014a), with design beginning to be incorporated into public sector contexts a decade ago (Design Council, 2018b).

As a profession, 'design can do many things' (Xiangyang, 2013, p.225). Constantly expanding into new areas of application, design has become a fragmented discipline (Kimbell, 2011b, p.290), or rather a conglomerate of disciplines that differ in approach and application (Hocking, 2008). Design disciplines have traditionally been defined through their outputs (Teixera in Yee et al., 2013, p.209), such as graphics, textiles, fashion, products or services. However, there are an increasing number of design fields that are not defined by their outputs, such as user-centred, collaborative or participatory design, co-creation or co-design, or design thinking among others. These can be considered *approaches to designing* that cut across disciplines, as they can be applied to products, services or the built environment (Wood, 2007; 2008; Thackara, 2005). This research is not concerned with a particular discipline, but with a particular approach to designing, and its application within public sector contexts.

As a result of design's continuous expansion, many design practitioners no longer fit neatly into traditional categories (West, 2007; Dykes et al., 2009, p.101), as their practices do not 'sit comfortably within existing disciplinary boundaries' (Kimbell, 2009a, p.3). This blurring of boundaries between fields (West, 2007; Dykes et al., 2009, p.101) is apparent in the design literature, which often disregards the distinction between products and services (Sangiorgi et al., 2015, p.58) and 'rarely specifies to which design field it refers' (Kimbell, 2009a, p.3). Both researchers and practitioners recognise the growing fuzziness between different approaches. Design thinking 'sounds just like good old participatory design' (Bjögvinsson et al., 2012), social design encompasses a broad set of approaches (Armstrong et al., 2014, p.15), and co-design and co-creation are often confused or used interchangeably (Sanders & Stappers, 2008, p.6). The company founded by the authors of *This is Service*

Design Thinking (Stickdorn & Schneider, 2011), reflects this fuzziness in their mission statement (Smayly, 2013) :

...teams working in service design (or design thinking, experience design, ux, cx, etc.) often struggle with similar issues [...] Our vision is to help [...] organisations to successfully do service design (or however you call what we're doing).

Although there is literature examining the differences between these approaches, the fact that designers use a variety of labels interchangeably suggests that there are strong overlaps between these approaches and disciplines. It could also be argued that, with the purpose of examining their expansion into public sector contexts, their similarities are more relevant than their differences, as public sector professionals are not likely to appreciate such differences.

For these reasons, this research chooses to use the umbrella term *design-led innovation* to refer to a variety of approaches that 'use similar ingredients, in different configurations' (Yee et al., 2015a). The researcher chose this term based on how it reflects the changing roles of designers (Wrigley & Bucolo, 2011) and the growth of strategic and immaterial design practices (Young, 2013, p.187), which are core characteristics of the approaches studied as discussed next. The increasing use of this term in education (Childs et al., 2012), businesses (Bucolo & Matthews, 2011; Bucolo & Wrigley, 2013) and the public sector (Bason, 2013; Yee et al., 2015a) also supports this choice.

Concerning the approaches and disciplines this term may embrace, Yee, White and Lennon (2015a) include design thinking, service design, social design and creative thinking. Although the applications of design-led innovation approaches in the public sector are discussed in detail in the third section of this chapter, for the purposes of this research, creative thinking is too broad a term, but this research would include approaches used in the public sector such as participatory design (Björgvinsson et al., 2012), co-design and co-creation (Sanders & Stappers, 2008), collaborative design (Scrivener et al., 2000) and transformation design (Burns et al., 2006; Sangiorgi, 2010).

Finally, in order to outline the core aspects shared across design-led innovation practices, this research discusses relevant shifts in design practice and contexts, and their

impact on processes and tools, knowledge and skills, values and approaches. This research emphasises two shifts in design stimulated by social and technological drivers that are core to the development of the approaches studied: firstly, the shift in focus away from the end-product and onto the importance of the context of design, and secondly, the shift in the object of design from tangible objects towards immaterial assets. The background to this lies in the 1970's when in response to an increasingly consumerist society new philosophical approaches to human intervention emerged (Armstrong et al., 2014, p.17). Authors like Papanek in the area of design (1972) or Schumacher in economics (1974) campaigned for a shift in their disciplines away from market opportunities and towards human needs and sustainability of resources. This call for the moral responsibility of designers (Papanek, 1972) appealed to 'designers from *every field* who had failed to design-out the adverse effects of their projects' (Cross, 1972, p.11). These values materialised into a variety of socially and environmentally responsible approaches to designing (Fleming, 2001, p.40; Armstrong et al., 2014, p.17) that shifted the attention from the object or end-product onto the context (Bernsen, 1986; Friedman, 2003, pp.511–512; Papanek, 1972). Examples of these are participatory design (Bjögvinsson et al., 2012; Sanders & Stappers, 2008, p.7), and more recently, codesign and cocreation (Sanders & Stappers, 2008), or social and activist design (Armstrong et al., 2014, p.17).

A decade later in the 1980's, with the development of computing technologies (Norman & Draper, 1986), design came to focus on users' interactions and experiences (Bayazit, 2004, p.18). This new area of design application resulted in the development of more intangible design disciplines such as human-computer interaction, user-centred approaches and interaction design (Sanders & Stappers, 2008, p.10). As emerging design practices drew attention towards human and environmental factors, designers were increasingly required to understand and empathise with users and stakeholders, initially through 'collaborating with social scientists and anthropologists' (Bayazit, 2004, p.22) until ethnography became a core method in design research. The incorporation of user-centred methods and strategies opened up a wide range of new applications, transcending discrete disciplines and blurring

their boundaries, as by focusing on users' experiences and purposes (Suri, 2005, pp.168–169; Sanders & Stappers, 2008, p.11) the outputs of designing could be virtually anything: systems, processes or social arrangements (Kimbell, 2009a), 'a service or a new way of doing things' or 'just a better way of integrating' existing products (Chick & Micklethwaite, 2011, p.35). The popularisation of Design Thinking through the work of organisations such as IDEO and the D-School at Stanford University symbolised the rupture between 'traditional design making' and 'innovative design thinking' (Brown & Katz, 2009, pp.3–8).

Design's increasing engagement with immateriality and its shift in focus towards users' interactions and contexts have transformed how design is conceived and performed, reconfiguring designers' priorities, focus, skills, roles and processes. Buchanan (2001, p.10), for example, suggests that there are four orders of design (Figure 3), signifying the different 'places' or topics for design discovery. The first two orders, symbols and things, are concerned with the visual and tangible aspects of design. With design's expansion into the intangible, design acquires two new orders—actions and environment—concerned with interactions and systems respectively (ibis, p.11). From this literature review, this research proposes four core characteristics shared in design-led innovation approaches: (1) a greater emphasis on the design research and increasing strategic value; (2) increasing degrees of collaboration; (3) the shifting roles of making and of designers; and (4) growing democratisation of design. As the following sections discuss, these shifts in design practice have been captured in designers' representations of design's processes and remit (Figure 3 to Figure 10).

	Symbols	Things	Action	Thought
Symbols	Graphic Design			
Things		Industrial Design		
Action			Interaction Design	
Thought				Environmental Design

Figure 3 Four orders of design (Buchanan, 2001, p.12)

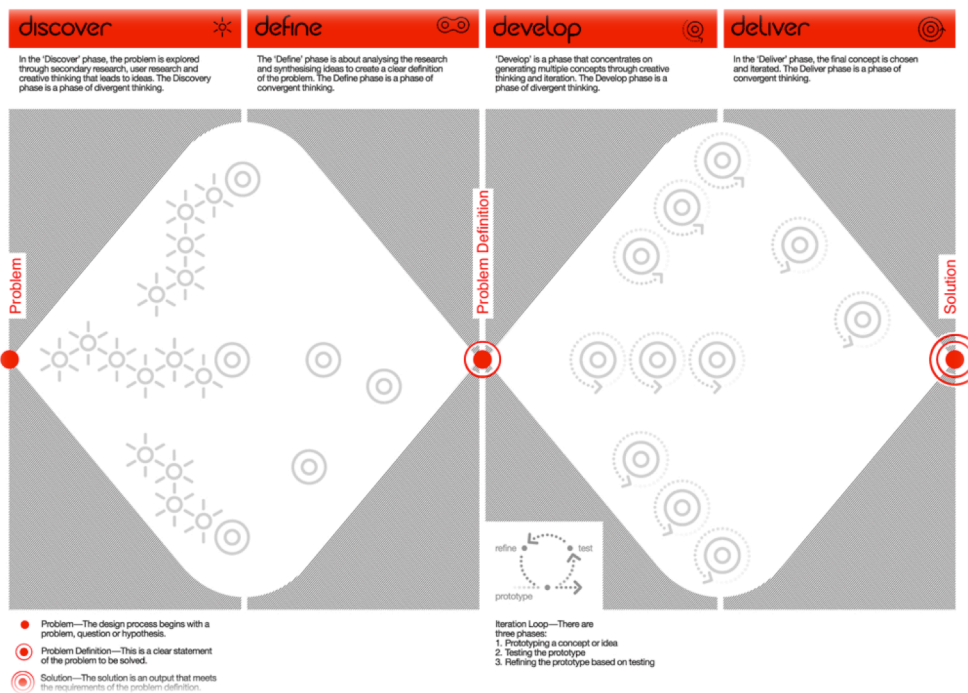


Figure 4 Double diamond (Design Council, 2007)

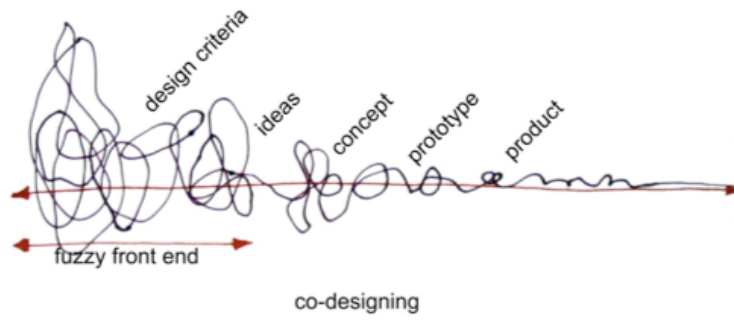


Figure 5 The fuzzy front end in co-designing approaches (Sanders and Stappers, 2008)

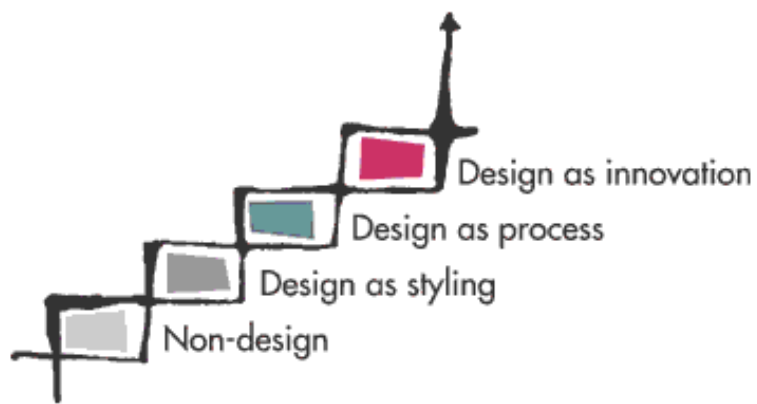


Figure 6 The Danish Design Ladder (SVID, 2011)

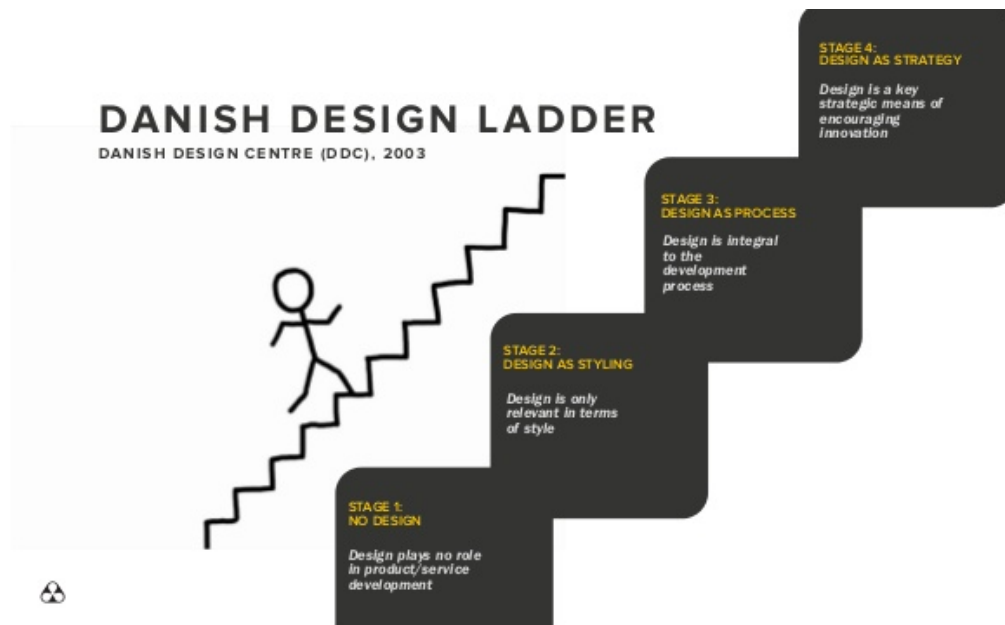


Figure 7 The Danish design ladder (DDC, 2003)

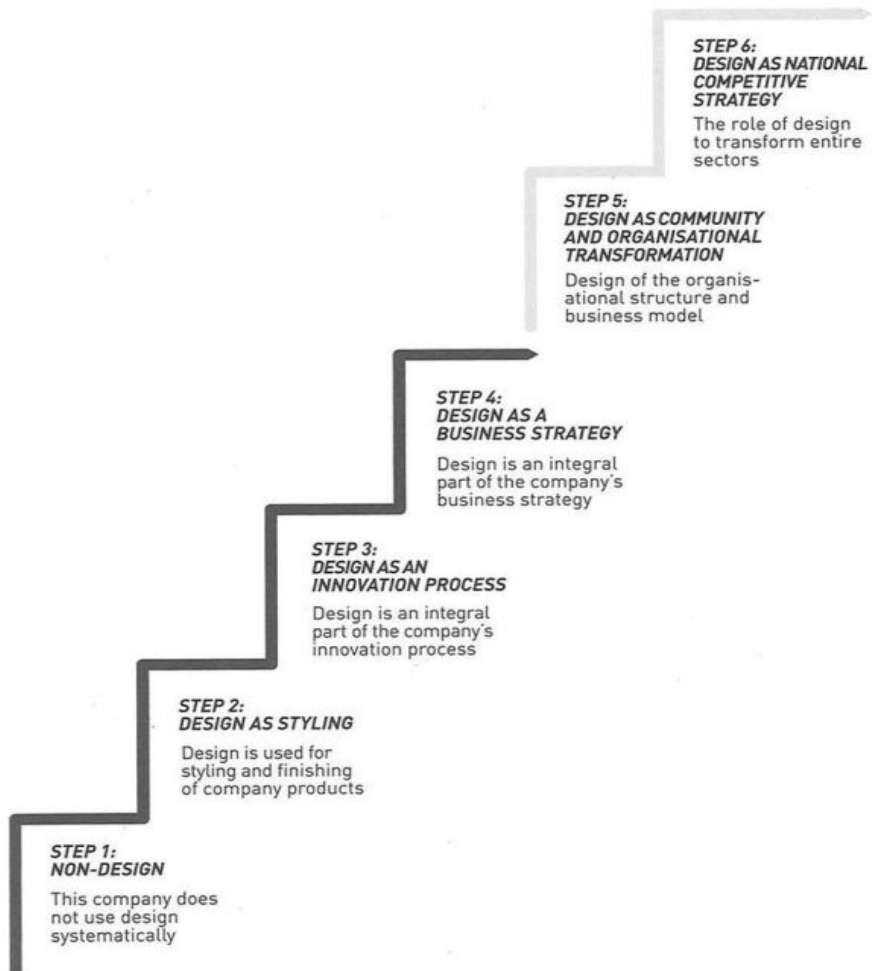


Figure 8 Bucolo's (2014, p.15) expansion of the design ladder (Source: <http://co-inpetto.org/danish-design-ladder/>)

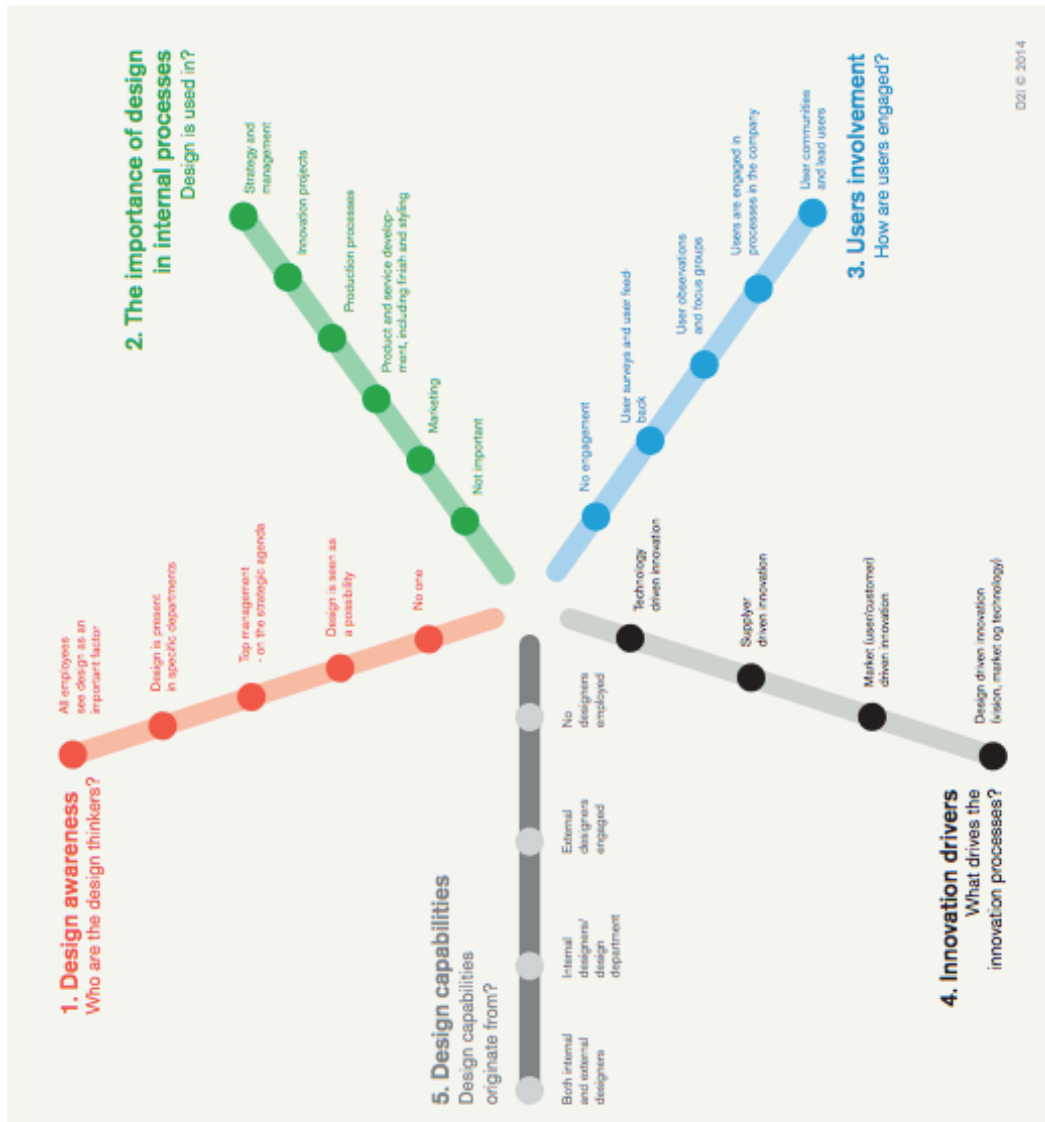


Figure 9 CESFO's design capacity model (CDCM, 2015)

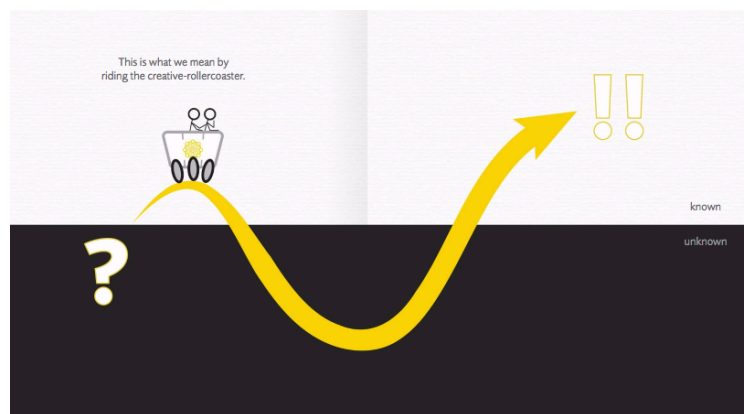


Figure 10 Roller-coaster representation of the co-design process (now-here, 2013)

2.1.1 Emphasis on design research

The design practices under study can be qualified as context-driven, as they prioritise defining the problem and understanding the specifics of the context over solution-generation (Bernsen, 1986; Friedman, 2003, pp.511–512; Papanek, 1972), which had been the primary focus in design approaches until recently. Traditionally, problem definition has not been formally acknowledged as part of the design process but considered a pre-design phase (Sanders & Stappers, 2008, p.6; Design Council, 2007, p.10; Koen et al., 2002, p.5). As Schön argued already in the early '90s (1991, p.40), the space for identifying the problem had been ignored in favour of emphasising problem-solving skills. This omission of problem definition in design processes can be connected to the ill-defined nature of design problems (Cross, 2011, p.92; Cross, 2006; Rittel & Webber, 1973), as they do not have just one optimal solution and requirements cannot be fully defined. As multiple solutions are possible, designers must project potential solutions to identify constraints and desired outcomes (Alexiou et al., 2009, p.627), which has led to the characterisation of design a solution-driven activity. Since design problems cannot be completely defined, Cross (2006, p.7) argued that 'their complexity does not allow for an exhaustive analysis', and thus design activity has generally been characterised by 'generating fairly quickly a satisfactory solution'.

From the perspective of socially and environmentally responsible design approaches, however, the ill-defined nature of design problems cannot be an excuse for solving ill-analysed problems, where design constraints are self-imposed by the problem solvers due to a lack of contextual exploration and understanding. Although design decisions will inevitably be compromised by uncertainty and time and resource limitations, designers must aim to 'develop a balanced approach, exploring all the important constraints' (Lawson, 2006, pp.108, 125) within a given context. Context-driven approaches no longer conceive of design as 'the realisation of what has already been conceived' but as an 'exploratory enquiry' into the problem (Kimbell, 2011a, p.45), where process and outputs are fuzzy and uncertain (Sanders & Stappers, 2008; Design Council, 2007; Rhea, 2003; Koen et al., 2002; Hyypiä & Parjanen, 2013). This shift has been reflected in representations of the design process, such

as the double diamond (Figure 4) and the fuzzy-front-end (Figure 5), that make explicit and emphasise design's early stages of discovery and problem definition (Design Council, 2007, p.10). Additionally, concentrating on context increases design's strategic value, as these early stages of the process offer the greatest opportunities for innovation (Koen et al., 2002, p.5).

Design's increasingly abstract and strategic purposes and the need to raise awareness of these applications are reflected in designers' efforts to capture these in visual representations. For instance, the Design Ladder (Figure 6 and Figure 7), introduced by the Danish Design Centre (2003, p.28), aimed to foster companies' awareness and progress through three increasingly strategic applications: (1) giving form; (2) as an innovation process; and (3) as a strategy. To this ladder, Bucolo (2014) adds: (4) Design as Organisational Transformation; and (5) Design as National Competitive Strategy (Figure 8). The leap from *giving form* to *developing national strategy* is significant, and undoubtedly, design does not only need to raise awareness but to demonstrate it can actually contribute in these increasingly complex contexts, as it will be discussed in page 60.

2.1.2 Increasing degrees of collaboration

As designers take accountability for the social and environmental impact of their interventions, design is argued to be too important or too useful to be left to designers alone (Brown & Katz, 2009, p.8; Chick & Micklethwaite, 2011, p.35; Siodmok, 2014, pp.28–29; Cross, 1972, p.11; Lawson, 2006, p.125). Historically, the application of participatory approaches in organisational contexts has responded to two strategies (Bjögvinsson et al., 2012, p.103): firstly, the democratisation of decision-making driven by the social values attached to participation, and secondly, the higher quality of outcomes by incorporating a wider range of skills and knowledge. Although design-led innovation approaches may vary widely in their definitions of 'who should be involved and in what role' (Sanders & Stappers, 2008, p.6), design practices have experienced increasing degrees of user and stakeholder involvement. Increasing levels of user involvement are reflected in the emergence of more specific terminology such as user-driven design (Gause & Lawrence, 1999; Tapscott, 1982) or distinguishing between design *for*, *with* or *by* users (Eason, 1992; Kaulio, 1998). While

user-centred practices ‘still emphasise the designer as the main agent within design’ (Kimbell, 2011b, p.289), participatory practices create ‘new domains of collective creativity’ (Sanders & Stappers, 2008, p.5).

Designers are now operating in increasingly complex contexts, where acquiring a holistic understanding of the landscape, identifying constraints and opportunities for intervention and developing solutions requires the knowledge and interaction of users, stakeholders and experts, including other designers who hold specialist knowledge in the area of application. Design practices are becoming increasingly inclusive and collaborative, being conceived as comprising an integrative discipline (Friedman, 2003, p.508; T. Brown, 2008; Stickdorn & Schneider, 2011; Armstrong et al., 2014, p.20).

This shift has had implications for designers’ roles, skills and processes. Co-design approaches change the *how*, *what* and *who* of design (Sanders & Stappers, 2008, pp.15–16). In co-creative spaces, facilitation becomes central to designers’ practice and skillset (Inns, 2013b, p.41), and design becomes the knowledge broker (Hargadon & Sutton, 1997) acting as the ‘glue’ (Kelley & Van Patter, 2005) between fields of expertise. Designers dedicated to co-creative approaches become ‘generalist designers’ (Seymour, 2006), experts in navigating the fuzziness of design processes (Sanders & Stappers, 2008, pp.15–16), supporting others through participatory discovery, conceptualisation, and development.

2.1.3 The shifting roles of making

Design approaches inherited from craft traditions the tendency to pay attention to the ‘end-product’ (Durling, 2002; Design Council, 2007), and the term ‘design’ is still strongly linked to the production of tangible objects (Siodmok, 2014, p.27). However, while the notion of design as an embodied activity (Kimbell, 2011b, p.289; Poulsen & Thøgersen, 2011) has persisted, design practices have evolved to deal with immaterial or intangible aspects and the role of making has shifted. The phrase ‘design-by-doing’ (Bjögvinsson et al., 2012, p.106) captures design’s philosophy that ideas and solutions take shape in their making, through iterative cycles of implementing and testing changes (Schön, 1991, p.146). However, the skills and methods involved have evolved. For example, prototyping draws on performative

techniques such as roleplaying (Bjögvinsson et al., 2012, p.106), and the use of visual methods has moved from representing potential solutions to making explicit intangible aspects (Inns, 2013b, p.41 table.1).

Attending to these shifts in the roles and purposes of making, this research proposes the distinction between *making tangible things* and *making things tangible*. Immaterial design practices often integrate making as a means rather than as an output. The abstractness of the ‘what’ (relationships, experiences, systems or procedures) is made tangible (through tools, maps, sketches, or prototypes) in order to elicit, materialise, document, and support discussions, thinking, understanding, creativity, or synthesis (Lawson & Dorst, 2013, p.94; Bjögvinsson et al., 2012, p.106). This way, it is the designers’ skill in developing tangible and visual artefacts that becomes instrumental to the process of designing, rather than the skills required for implementing the outputs (Kimbell, 2009a, p.6; Manzini, 2013, p.213).

2.1.4 Increasing democratisation of design

The digital and social domains are dynamic and fast-changing systems where solutions can quickly become obsolete (Burns et al., 2006, p.21). As design expands into these contexts, its outputs and solutions need to be highly responsive and able to adapt to changes. Particularly in social contexts, and with increasing degrees of participation, a new understanding of design as ‘infrastructuring’ (Bjögvinsson et al., 2012) emerges with the intention of enabling design-after-design (Redström, 2008). Such transformative design approaches no longer seek to build a solution but to generate the means and the capacity that will enable experts in the context to develop their solutions (Burns et al., 2006), which implies a transfer of design skills to users and stakeholders. This democratisation is such that designers see expressions of design even ‘in projects where there was ostensibly no design expertise involved’ (Burns et al., 2006, p.23; Brown & Katz, 2009, p.28; Buchanan & Margolin, 1995, p.introduction). To reflect design’s inclusivity while distinguishing design expertise, the design literature has begun to differentiate between (professionally trained) designers and non-designers (Manzini, 2013, p. 213; Kimbell, 2009, p. 6; Burns et al., 2006, p. 21), referring to the other actors involved in designing. Descriptions and representations of design’s remit and process

specifically developed for individuals new to these approaches also reflect design's inclusive and transformative intentions. Representations such as the design ladder (Figure 6 and Figure 7) or the double diamond (Figure 4) have been crucial in the dissemination and communication of design's shifting roles and remit outside disciplinary circles. Other representations seek to adjust the expectations of people unfamiliar with design's exploratory approach by emphasising the fuzziness and uncertainty of the early stages of the process (Figure 5 and Figure 10).

This democratisation or transfer of design skills has engendered debates. While some designers critique the 'excessive democratisation of expert designing' (Tonkinwise, 2013, p.219), other authors, such as Manzini (2007; 2013, pp.213–214), are profound advocates of opening up the discipline in this way. More often debates are connected with how design is portrayed outside the discipline, and the unprecedented popularisation and dissemination of Design Thinking in the past two decades (Brown, 2008; Björgvinsson et al., 2010; Kimbell, 2011a); as its apparent simplicity conveys that everyone can or should be a designer (Kimbell, 2009a, p.3). This dissemination of design thinking has led to critiques of an excessive standardisation and inflexibility of design processes and approach (Christensen, 2014; Banerjee, 2013). These debates are similar to the criticism around the first generation of design methods and the emergence of checklist-type models of the design process (Archer, 1979, p.17; Best, 2006, p.114). A formulaic approach to designing can hinder innovation (Christensen, 2014; Banerjee, 2013), lacking the responsiveness of emerging design situations and having negative effects on creativity (Best, 2006, p.114). Simplified expressions of design approaches, while useful in communicating with clients and collaborators, fail to capture the actual complexity and non-linear nature of design processes (Archer, 1979, p.17; Best, 2006, p.114). Designers may in fact understand linear representations of the design process as a broad outline structure (Stickdorn & Schneider, 2011, p.124; Swann, 2002, p.53), which can be adapted (Design Council, 2007, p.10) to meet the specific needs and characteristics of different design projects (Design Council, 2007; Best, 2006).

To support the incorporation of increasingly abstract and strategic applications of design practices in organisations, the Centre for Entrepreneurship and Small Business Studies (CESFO) at the University of Southern Denmark (Christensen & Madsen, 2014) has developed the ‘design capacity model’ (Figure 9). This more complete framework includes a number of dimensions for businesses to measure their strategic use of design, such as design awareness and capability across different levels in the company, the degree of user-involvement or the aspects driving innovation. More detailed representation such as this can offer professionals new to the discipline a better understanding of how design-led innovation approaches sit within organisational processes.

2.1.5 Situating my design practice

The previous sections defined some of the core characteristics of design-led innovation approaches. This section situates the researcher’s approach within this broader definition, provides insight into the researcher’s understanding of design, and introduces the design practice included in the research. Unlike the rest of the thesis, this section is narrated in the first person to reflect the experiential development of my approach to design.

The section begins by introducing the elements of design practice included in the research, and their role in the inquiry. Then, the section situates this practice by providing an overview of the literature and experiences that shaped my design approach. In doing so, the section discusses the ethics, approach, methods and (expected) contributions driving my practice.

The role of practice in the research

This thesis uses the term practice-based (Durling, 2002, p.82; Saikaly, 2005, p.9) to convey that the researcher has used her design practice not as the object of the research but as a means for discovery, either as an integral part of the interrogative process or being instrumental to data collection and reflection.

- **Practice-based case studies:** the researcher participated as an innovation designer in two of the projects studied. Here, the design practice mirrored commercial design innovation consultancy (Fallman, 2008, p.6), which included offering advice on the implementation of design strategies and methods, delivering workshops with stakeholders, undertaking design research, and synthesising and mapping findings. The practice developed was driven by the context (Fallman, 2008, p.5) and responded to the needs of the project, not to research interests. In terms of research, the practice was instrumental in gaining access to real public sector projects and gathering empirical and experiential data from the inside.
- **Practice-based analysis:** the final stages of analysis used visual methods to make sense of the empirical evidence and articulate findings. As a designer, I make sense of intangible things by making those things tangible. This way of making sense of the world became an integral part of the analysis and resulted in tangible outputs, such as the procurement ladder, the videos introducing design, public sector professionals' learning and evaluation journeys and the ecosystem shaping decisions. This use of these visual methods responded to analytical needs and can be seen as a 'designerly way of researching' (Saikaly, 2005, p.9), where the practice becomes a means of 'exploration initiated by the practitioner-researcher that embodies the statement or question that the researcher is attempting to critique or answer' (Fallman, 2008, p.7-8)

(Social) design philosophy and inductive approach

My design practice falls within the umbrella of design-led innovation already described, sharing their emphasis on understanding the context, gathering multiple perspectives, and making things tangible; and their focus on immaterial challenges, such as the design of services, experiences, relationships, or systems. My Masters in Design Innovation (MDI) at the Glasgow School of Art (GSA) shaped my design approach as people-centred, holistic, and inclusive. This MDI emphasised the need for collaboration across fields of expertise to solve complex problems, and the relevance of involving those closest to the problem to develop solutions that are socially and environmentally sustainable; and instilled criticism of top-down design approaches where designers do not engage in understanding the social context surrounding the object of design. My understanding and practice of design were strongly influenced by books, such as *Design for the Real World* by Papanek (1972) or *In the Bubble* by Thakara (2005); the work of practitioner-researchers, such as Sangiorgi on transformation design or Manzini on sustainability; and the work of companies, such as Think Public or IDEO.

While the philosophy of design instilled by the Glasgow School of Art still underpins the approach and ethics of my practice, the actual shape of the practice – purpose, process, tools, or degree of collaboration – are context-dependent. Koskinen and Hush (2016, p.65) recognise two new forms of social design that move away from its traditional utopic vision of society: molecular and sociological design. Molecular design (ibis, p. 67) works at the micro-level and prioritises slow transformation over initiating massive change by ‘doing the best’ within the existing situation. Sociological design (ibis, p. 68,69) takes a more critical stand towards contemporary society and targets the social structures and practices that produce and maintain inequalities. While I bring to my design practice the socio-political and environmental criticality characteristic of sociological design, I would argue that my practice has often taken a more molecular approach, where the principles of social design almost become aspirational (Koskinen & Hush, 2016, p.68) as the practice adjusts to clients’ objectives and commercial needs.

As a design consultant I have had to adapt my knowledge of design methods and processes to a wide range of purposes, contexts and sectors. It could be argued that this need for adaptability led me to develop an inductive approach to designing, where I use (social) design as a philosophy to guide the ethics of my practice, but the design methods and strategies are adapted to the specific design situation and iterated in response to my increasing understanding of the context. This inductive approach to designing means I always begin the same way: familiarising myself with the context. This approach agrees with contemporary notions of design as a framework or set of principles that can be adapted to different contexts and situations (Design Council, 2007).

Concrete design decisions, however, are shaped by the particular purpose and situation of the projects, insights from the literature and my experiences, and my knowledge, strengths and skills as a designer. In general terms, my practice uses and adapts service design tools (Stickdorn & Schneider, 2011) and often involves undertaking user research, developing tools for engagement, designing and facilitating workshops with a variety of stakeholders and purposes, mapping experiences and systems, suggesting improvements and prototyping ideas. For instance, the immersive case study used *personas* (ibis, p. 178-179), fictional characters that represent a group of users with shared needs or experiences; and a *stakeholder map* (ibis, p. 150-153), a visual representation of the relationships and motivations of the different groups and organisations involved in service use, delivery and regulation. *Sequencing tools* (ibis, p.40-41), such as *user-journeys* (ibis, p.158-161), *storyboarding* (ibis, p.186-187), and *service blueprinting* (ibis, p.204-205); are used for visualising sequences of events and are also essential in my practice. These visual methods are the bases for exploring (1) the *front-end* of a service (ibis, p.41-42,152), the users' experiences and interactions with the services; in connection with (2) the *back-end* of the service (ibis, p.41,152), that is the organisations' internal processes, operations and systems; and (3) identify the *touchpoints* (ibis, p.35), the points of contact between user and service provider to be (re)designed. This research adapted some of these visualisation techniques during the analysis to articulate research findings. For instance, the videos created

(Appendix I, p.382) were a way of storyboarding an empirically-based dialogue between public sector professionals and designers, aimed at making tangible communication gaps. The empirical reconstructions of public sector professionals' evaluation journeys (p.257) and the broader ecosystem shaping their decisions (p.262) can also be associated with the use of *user journeys* to understand processes and experiences, and of *stakeholder maps* to understand the relationships between interacting elements.

While the approach and specific tools may depend on the project, the underlying strategies often build on a series of assumptions on how design can contribute in a particular situation. Although studying the contribution of design is not the objective of this research, it is relevant to reflect on how designers' expectations of contribution shape their practice. This section concentrates on articulating how my experiences as a practitioner and the literature have shaped my understanding and expectations of design's contribution, and in doing so, shape my practice. Section 2.3.4 (p.79) will explore more broadly how designers' portray the value of design approaches in the public sector.

Design's contributing characteristics

Building on my experiences as a practitioner, I would argue that design's main contribution in almost every context I have worked in has been its holistic and inclusive approach. Design approaches encourage you not to assume anything, question what you know, and consider different experiences and perspectives. These characteristics reconcile with design's contributions to the first half of the Double Diamond (Design Council, 2007), such as reframing the problem, breaking assumptions, or integrating multiple perspectives (Scrivener et al., 2000; Better by design, 2017; Design Council, 2018b).

Design approaches support this holistic and inclusive approach by making things tangible through drawings, mapping methods, or prototyping. For instance, mapping the ecosystem has become a fundamental component of my practice, as it allows me and others to understand the context better and make informed decisions. Designers' ability to make things tangible is recognised as one of design's most relevant contributions by both designers and public sector professionals, in this research (Appendix J) and in other studies

(p.79). It is worth noting that making things tangible is not the same as making things beautiful, and the contribution of visual methods cannot be reduced to aesthetics. As Yee, Lennon and White note in their research (2015a, 2015b), it is about synthesising information and reducing complexity while taking a holistic perspective. Visual methods support clarity and consensus, new ways of understanding things, and taking a broader perspective. I would argue that making things tangible has several aims and contributions:

- to support effective communication by providing tangible means and a shared language;
- to provide an equal footing for participation beyond power dynamics;
- to support diverse teams to create a common understanding and to empathise with each other's experiences;
- to take a wider perspective of the context and systems surrounding them;
- to identify gaps, overlaps, and improvements by examining the relationships between actors, objects, and systems;
- to help teams to become more creative by moving beyond preconceived ideas and assumptions.

My application of visual and mapping methods in this research exemplifies some of these design strategies. Visualisation as a sense-making tool was core to both the design innovation practice undertaken in the case studies and the articulation of research findings.

Summary

It could be argued that my approach to designing has been shaped by, on one hand, the (social) design philosophy instilled by GSA's Masters in design innovation and, on the other hand, the need for adaptability in my work. This has led to an inductive design approach with aspirations of social and environmental sustainability. While the purpose, methods, outputs and contributions vary from context to context, this approach roots design decisions on evidence drawn from the context and the assumption that design's contribution resides in its ability to support a holistic and inclusive approach through making things tangible.

My learning and working experiences bring idiosyncrasies to my practice of design and make an imprint on the research. However, my design practice and discourse do not exist in a vacuum and are inspired by contemporary design researchers and practitioners. Despite its particularities, the overarching ethos and approach and the specific methods and strategies shaping my practice belong to a broader design-culture concerned with its social and environmental impact and that advocates for holistic, context-driven and collaborative approaches.

2.1.6 Concluding remarks

This section has provided an overview of how design practices have expanded in the last four decades, emphasising some key shifts that have transformed how design is conceived and performed, reconfiguring designers' priorities, focus, skills, roles, and processes. These shifts expose not only the constant 'state of flux' of design's landscape (Broadley, 2013, p.22), but also designers' constant need to (re)articulate design's emerging roles, remit, and processes.

This research is concerned with the application of design-led innovation practices in the public sector and focuses on approaches to designing that work in complex social contexts, dealing with immaterial challenges and relationships. As socially and environmentally responsible approaches, design-led innovation practices emphasise the relevance of understanding the context and the perspectives of different actors, requiring collaborative and participatory approaches. In public sector settings, design-led innovation approaches may or may not have transformative intentions in the sense of building public sector professionals' design capacity. However, the research is interested in understanding how public sector professionals make decisions about design's suitability and what may lead them to adopt or reject its application. Therefore, if design practices can provide valuable skills and resources for the public sector and in so doing improve the outcomes, processes, and experiences of public and social services, then this research advocates the democratisation of design.

2.2 A transitioning public sector and an opportunity for design

In order to understand how these design practices fit within the UK and Scottish public sectors, this section contextualises the public sector's transition towards citizen-centred and participatory practices and how this has created new opportunities for design. The section begins by describing the public sector's paradigm shift towards co-production of value through the incorporation of the Public Value Management framework (PVM), as well as other factors that have accelerated the incorporation of citizen-centred and participatory practices in public sector contexts. The text then moves to illustrate how this paradigm shift has materialised in the UK and specifically Scottish public sectors. Firstly, it exposes the main methodologies used in the UK and Scotland to incorporate citizen-centred and participatory practices and examines the ethical and political tensions that emerge in the practical implementation of the Public Value Management framework through these methodologies. The final subsection provides an overview of the impact of Public Value on the development of policy in the UK and Scotland.

2.2.1 Paradigm shift towards citizen-centric and participatory strategies

The public sector's shift towards user-centric and participatory approaches is an international trend found in Europe, China, Australia, Taiwan and the United States (Podger, 2012, p.85; Bourgon, 2008, p.398). This paradigm shift originated in the mid-nineties (Moore, 1995) with the development of the Public Value Management framework (PVM) and its emphasis on the co-production of public value (Shaw, 2013, pp.478, 482,487; Lowndes et al., 2006, p.552; Coats & Passmore, 2008, p.4). Here, public value is understood as 'the value created by government through services, laws, regulations and other actions' (Kelly et al., 2002, p.4). This new framework signified a rupture with the former New Public Management (NPM) of the 1980's (Lowndes et al., 2006, pp.551–552; Shaw, 2013, pp.481–482; Williams & Shearer, 2011, p.8; O'Flynn, 2007, p.353). While the former NPM saw

citizens as passive and dependent consumers with a minor evaluation role (Williams & Shearer, 2011, p.8; Lowndes et al., 2006, p.552; Shaw, 2013, pp.485–486; Stoker, 2006, p.56), the new PVM recasts the public as funders of government (Lowndes et al., 2006, p.552) and thus active agents in making decisions and determining the purpose and particulars of service provision (Shaw, 2013, pp.484–486).

In accordance with this framework, public value must be co-produced in a continuous dialogue between government and the public (Shaw, 2013, pp.478, 482,487; Lowndes et al., 2006, p.552; Coats & Passmore, 2008, p.4). Evans's diagram, below (Figure 11), shows how PVM moves decision-making from top-down to bottom-up approaches, 'creating the space in public sector organisations for participatory design' approaches (Terrey, 2012, p.337).

It is worth noting that although the conceptual debate on public value began in the mid-nineties (Moore, 1995), the practical implications of such a paradigm shift have often been overlooked (Shaw, 2013) and the actual integration of citizen participation requires institutional changes within Government (Coats & Passmore, 2008; Tapscott & Williams, 2006). Public services are still often designed 'back to front', (Bridge, 2012, pp.168–169) involving users only at the end of the process, when it is too late to incorporate their views into the design. Even though the rhetoric of public value has been adopted by the public sector (Lowndes et al., 2006, pp.551–552; Shaw, 2013, pp.481–482; Williams & Shearer, 2011, p.8; O'Flynn, 2007, p.353), this shift entails a complex transition in which traditional and new ways of working must coexist (Stoker, 2006, pp.42–43; Shaw, 2013, pp.486–487) –a transition which is still very much underway.

In addition to the introduction of the PVM framework, the public sector's need to incorporate user-centric and participatory methodologies has also been accelerated by the emergence of new technologies, increased public expectations and the 2008 financial crisis. Firstly, the growth of networked digital technologies and the need for 'designing public services for the digital age' (FutureGov, 2015) have accelerated the incorporation of citizen-centred and participatory approaches in the public sector (Podger et al., 2012, p.107; Cottam & Leadbeater, 2004; Reynoso & Sánchez, 2015). Research suggests that citizens' low uptake

of digital public services is due to a lack of user-centredness in their development and their subsequent inability to fulfil citizens’ needs or expectations (Kotamraju & van der Geest, 2012b). The link between digital technologies and a focus on customer experience (CX) in the public sector is such that a report from the Civil Service World asserts that ‘senior managers who began their careers in an analogue world, have yet to put enough emphasis on a customer-centric culture’ (TCS & Civil Service World, 2015, p.3).

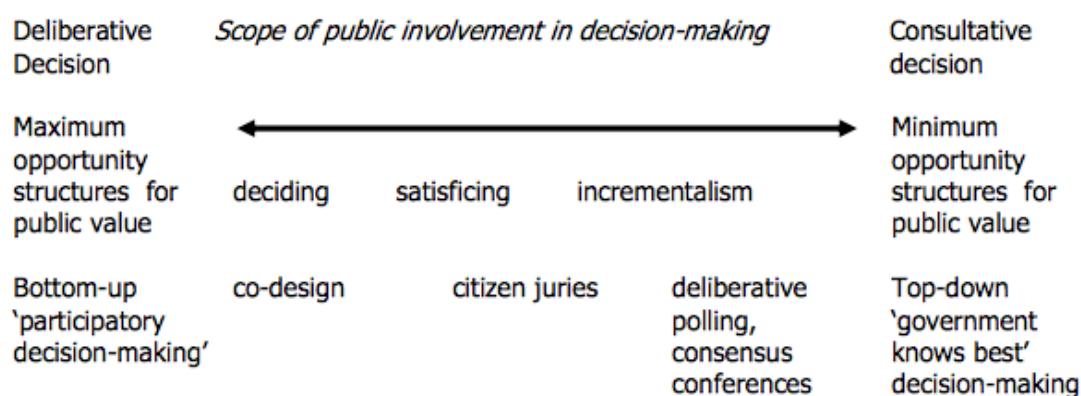


Figure 11 The scope of public involvement in public value decision-making (Evans & Reid, 2013, p.23).

Secondly, the emergence and proliferation of socially oriented approaches have historically been linked to periods of economic and social challenge (Armstrong et al., 2014, pp.17–18), such as the economic recessions experienced in the UK in the 1970’s due to the oil crises, and now following the 2008 financial crises (Baily et al., 2008; Karanikolos et al., 2013). Since the 2008 crisis, the public sector’s rhetoric has been ‘strongly tied to an austerity narrative’ (Bailey, 2016, p.23). In the current European economic and political context, austerity has become a synonym for cuts in government spending and public services (Karanikolos et al., 2013). Policy-implementing organisations across Europe are being asked to ‘do more with less’ (Thoelen et al., 2016, p.17), saving money and resources while achieving greater efficiencies and impact (Thoelen et al., 2016, p.17; Bailey, 2016, p.23).

It could be argued that austerity has both positive and negative effects on the incorporation of citizen-centred and socially-oriented practices. While on the one hand

enabling Councils to ‘opt out’ of their social care obligations if they ‘are struggling with a tight budget’ (Spurrier, 2016), austerity-driven policies can however encourage collaboration across institutions (Campbell, 2011) and public demands for greater transparency and participation in government decision-making and spending (Della Porta, 2012; Della Porta & Mattoni, 2014; Pianta, 2013). The inability of existing representative structures to fulfil these public demands on governmental responsiveness (Shaw, 2013; Bourgon, 2008; Legrain et al., 2014) has caused the proliferation of socio-political movements throughout Europe demanding a shift from representative to participatory democracy (Della Porta, 2012; Della Porta & Mattoni, 2014; Pianta, 2013).

These factors have contributed to accelerating the public sector’s paradigm shift towards the integration of citizen’s voices. The next section describes the main citizen-centred and participatory methodologies being incorporated in the UK and Scottish public sectors, namely, asset-based and co-production approaches.

2.2.2 Asset-based and co-production approaches

Both asset-based and co-production approaches are associated (Bovaird, 2007, pp.846–847) with the public sector’s shift towards Public Value, as they see individuals and communities as resources in service provision.

Citizen-participation and collaboration are central to asset-based approaches (McLean et al., 2017, p.5). Asset-based approaches focus on social and immaterial assets, recognising and mobilising the capacity, skills and strengths of individuals, communities, and their existing networks (Mathie & Cunningham, 2003, p.474; Friedli, 2013, pp.131–132; McLean et al., 2017, p.7). They build on the notion that citizens have the capability to organise and capitalise on their strengths and inner resources in order to meet their own needs and drive developments in their communities (Mathie & Cunningham, 2003, p.474; McLean et al., 2017, p.7). These approaches contrast with deficit-based or needs-based approaches (Dunston et al., 2009, p.50; Morris et al., 2007, p.3; McLean et al., 2017, p.7; Mathie & Cunningham, 2003, p.474; Friedli, 2013, p.131), which focus on the problems and

deficiencies of individuals and communities, lack reliance on user expertise, and can trigger dependency and disempowerment.

The literature portrays co-production in two ways: one that acknowledges the role of citizens in the successful implementation of public services, and another one that advocates the involvement of citizens in the development of public services. In both cases, co-production emphasises the role of citizens as co-producers of public services, contributing time and effort in their provision (Alford, 2016, p.675). In essence, co-production is the recognition that the output of public services does not depend on service design and provision alone, but also requires specific behaviours and attitudes from users in order to achieve the desired outcomes (Osborne et al., 2013, p.139). However, this definition of co-production does not necessarily entail an increase in user focus or participation or the inclusion of users' voices in the design or delivery of services.

However, other definitions regard co-production as a the *collaborative* and *egalitarian* involvement of users in planning, commissioning, designing, delivering, managing or evaluating public services (Bovaird, 2007, p.847; Fotaki, 2015, p.433; Boyle & Harris, 2009, p.11). From this perspective, seeing citizens as passive recipients is not only a waste of their skills but a constraint to systemic change (Boyle & Harris, 2009, p.11). The notion of co-production as an 'equal and reciprocal relationship' between service providers and citizens (Boyle & Harris, 2009, p.11) not only moves away from a 'provider-centric' model (Bovaird, 2007, p.847) but also moves beyond 'citizen engagement' or 'service user involvement' (Boyle & Harris, 2009, p.12). It implies a partnership and a transfer of 'power, responsibility and resources' from service providers to individuals and their communities (Boyle & Harris, 2009, p.14). This conception of co-production changes the role of public service into that of a catalyst for building social networks and mutual support systems, encouraging habits that will prevent future problems and needs, and transferring knowledge and skills to individuals and communities (Boyle & Harris, 2009, p.12).

Public deliberation, or dialogue, which is the preferred term in the political rhetoric in UK and Scotland (Escobar, 2010, p.4; Pieczka & Escobar, 2013, p.3), is an approach to co-

production. Examples of the application of dialogical approaches include participatory budgeting, mini-publics and deliberative polls. Participatory budgeting involves citizens and empowers them to discuss and decide how to spend public money and has been largely used by local authorities in Scotland and the rest of the UK (Escobar, 2010, p.7; Davidson & Elstub, 2014, p.19). Participatory budgeting in the UK has come under criticism, for example by Davidson and Elstub (2014, p.20), for not being participatory enough. Lavan (2007) has even referred to it as ‘participatory grant-making’, as it is primarily used to distribute small project-grants and only involves third sector organisations applying for funding rather than citizens in general.

Mini-publics are small public consultations to discuss public issues. The most common forms of mini-publics used in the UK are citizens’ juries, although other formats also exist, such as planning cells, consensus conferences or citizen assemblies (Davidson & Elstub, 2014, p.14). In citizen juries, a small group of citizens and experts (12-14) assemble to discuss and deliberate on a public issue and agree on a decision or recommendation (Davidson & Elstub, 2014, p.14). The jury members may request evidence and advice from experts as part of this process (Pieczka et al., 2010, p.17). However, mini-publics rarely result in binding decisions (Davidson & Elstub, 2014, p.14), primarily due to sampling issues such as representativeness, exclusion of minorities or exclusion of citizens affected by those decisions (Davidson & Elstub, 2014, pp.14–15). Critics of citizens’ juries in the UK (Delap, 2001) have argued that these mini-public have been reduced to mere focus groups designed to meet the goals of public bodies rather than empowering citizens.

Deliberative polls, on the other hand, are a way to explore what citizens would think about a public issue if they were better informed through a deliberative process (Davidson & Elstub, 2014, pp.14, 17). They differ from mini-publics in two ways: firstly, deliberative polls have a greater sample (130-500), and secondly, participants do not need to agree on a decision as their views are aggregated to reach a result (Davidson & Elstub, 2014, pp.14, 17).

Design-led innovation practices may differ in approach and methods from these methodologies. However, in principle, they share a similar user-centric and participatory

ethos, as they all draw on the knowledge, experiences and skills of those delivering and using the services (Better By Design, 2014, p.8). As such, they are likely to confront similar challenges in their application and expansion within the public sector. Although there are differences between asset-based and co-production approaches, this thesis stresses their shared emphasis on user-centric and participatory strategies and will discuss them jointly.

The next section, however, discusses how these citizen-centred and participatory methodologies do not always align with the principles instilled by the Public Value framework, also diverging from socially-oriented design practices.

2.2.3 Ethical and political tensions between Public Value and participatory practices in the public sector

Beyond concerns about participation being used as a ‘cosmetic exercise’ (OECD, 2003, p.49; Escobar, 2010, p.9), some of the citizen-centric and participatory practices currently undertaken in the public sector are in conflict with the principles instilled by the Public Value Management framework (PVM), as well as with socially-oriented design approaches, and can be criticised for their ethical and political implications.

Firstly, it is clear that public sector organisations do not see citizens as equals, as promoted by PVM. The public sector literature often profiles citizens according to their degree of compliance or ‘willingness to coproduce a service or comply with their responsibilities as citizens’, placing them in four different categories (Alford, 2016, pp.682, 686): those that comply because it is ‘the right thing to do’; (2) those that will ‘take any opportunity to avoid their obligations’; (3) ‘incompetent non-compliers’ who want to comply but are technically incompetent to do so; and (4) ‘contingent compliers’ who will comply if enforcement rules seem serious enough. By focusing on enforcement, these kinds of classifications neglect the reasons behind non-compliance and hide a paternalistic view of government as knowing what is best, denying the critical posture of citizens against the unfairness of rules such as in cases of civil disobedience (Rawls, p. 244).

Secondly, there is a difference between transferring power (Alford, 2016, p.675; Bradwell & Marr, 2008, p.45) and transferring responsibilities (Thoelen et al., 2016, p.8) from public

institutions onto citizens. Asset-based and co-production practices build on individuals' and communities' capabilities to improve their situation. However, in a financially constrained public sector seeing citizens as a resource can be conflicting. Citizen participation can be seen as a way of cutting public spending and reducing an 'unaffordable demand' by promoting a 'do-it-yourself response to the loss of services' (Friedli, 2013, p.138; McLean, 2011, p.7). When citizen involvement is not unavoidable it is discussed in terms of its costs in comparison with using 'in-house staff' to accomplish a particular outcome (Alford, 2016, p.677). Furthermore, building on the idea that welfare generates dependency and institutions should move towards wellbeing and self-determination (Scottish Government, 2011, p.7; McLean et al., 2017, p.7; Friedli, 2013, p.135), asset-based and co-production practices uphold the notion that people's use of welfare benefits and services is 'morally flawed' (Friedli, 2013, p. 137). This is at odds with PVM's vision of citizens as funders of public services (Williams & Shearer, 2011, p.8; Lowndes et al., 2006, p.552; Shaw, 2013, pp.485–486; Stoker, 2006, p.56).

Finally, the full integration of PVM would require the depolitisation of public service management (Coats & Passmore, 2008, p.5; Thoelen et al., 2016, p.17), which is not present in the current political and accountability systems. Tax redistribution, the benefits systems, and the privatisation of public services or spaces, are all political matters (Friedli, 2013, pp.136–147; McKnight, 2010, p.76) that affect the implementation of policies and delivery of public services. It would be naive to assume that austerity politics are uniquely a consequence of the financial crisis, as they also respond to on-going neo-liberalist attacks on both market regulations and social rights (Beckfiel & Krieger, 2009, p.170; Friedli, 2013, p.132). For instance, recent negotiations of commercial international treaties, such as the Transatlantic Trade and Investment Partnership (TTIP) and the Comprehensive Economic And Trade Agreement (CETA), threaten governments' sovereignty and legislation in the public's interest (Schubert & Saz-Carranza, 2016, pp.6, 11; Klaus & Rottig, 2016). Friedli (2013, p. 134-135) criticises asset-based and co-production approaches because they leave

largely unquestioned the systemic causal factors of social and economic inequality, and have at times contributed to neo-liberalists attacks on public services.

It is important to reclaim asset-based, co-production or design approaches as a means for empowering citizens and having a positive impact on deprived communities. As detailed throughout the section, applications and discussions of co-production risk reducing citizen participation to free labour. Furthermore, unless policy addresses the underlying economic and social causes generating systemic inequalities, these practices risk becoming a decorative layer to masquerade the old ways of designing and delivering services by creating the illusion of participation. The meaningful incorporation of user-centric and participatory approaches inherently entails a redistribution of power in public sector institutions (Beckfiel & Krieger, 2009, p.170; Friedli, 2013, p.132) and requires 'favourable policy environments' (Friedli, 2013, p.135). The next section contextualises the emergence and institutionalisation of participatory and user-centric approaches within the UK and Scottish political contexts, and their implications for policy regulations.

2.2.4 Policy landscape in the UK and Scotland

Over the past few decades, the UK has seen a greater uptake of participatory and deliberative approaches in the public sectors, with the three main areas of implementation being the National Healthcare System (NHS), local governance, and science and technology (Escobar, 2010, p.9; Davidson & Elstub, 2014, p.21). However, while citizen involvement has increased, it can be argued that actual citizen empowerment and institutionalisation of participation has to some extent been an 'unrealised' or 'unmet' rhetoric (Davidson & Elstub, 2014, pp.5, 9). Whereas consultation has become systematically embedded in public sector practices (Escobar 2010), the actual implementation of participatory processes have only taken place 'at the peripheries of governance' (Davidson & Elstub, 2014, p.5). Indeed, the rhetorical use of public engagement and dialogue, in the UK as in other countries, has been considered by many a mere 'cosmetic exercise' (OECD, 2003, p.49; Escobar, 2010, p.9). While policies supporting citizen participation do appear to be stronger in Scotland than in

the rest of the UK, this section looks at how their implementation also remains to be fully realised.

In the UK, interest in citizen involvement has been driven by increasing public disengagement and mistrust towards political institutions and decision-making processes manifested in a decline in voter turnout and party membership (Pieczka et al., 2010, pp.3, 4; Davidson & Elstub, 2014, p.3). Early notions of citizen involvement entered UK politics in the nineties by the hand of the Labour Party (1992) who promoted a shift from 'old politics' into 'new politics' (Davidson & Elstub, 2014, p.7). New Labour's manifesto of constitutional reforms (Labour Party, 1997) promised devolution of power towards local decision-making in Scotland and Wales, and 'a welfare reform developed in consultation and partnership with the people' (Davidson & Elstub, 2014, p.5; Labour Party, 1997). Despite the Conservatives' ideological opposition to participatory reform (Davidson & Elstub, 2014, p.9), the rhetoric of citizen empowerment returned under the leadership of David Cameron and the idea of the Big Society (BBC News, 2010). This entailed the creation of a democracy taskforce aimed at restoring the public's trust in politics (Mulholland, 2008; Davidson & Elstub, 2014, p.9).

Power devolution has had a greater reach in Scotland (Davidson & Elstub, 2014, p.12), which in principle should have a positive impact in the incorporation of citizen-centric and participatory practices. It is indeed the case in Scotland that asset-based approaches have permeated public policy and are used to inform service planning and delivery (McLean et al., 2017, p.5; Friedli, 2013, pp.135–136). However, the impact of its devolved context is unclear, as there are other factors at play, such as culture and politics. On the one hand, Escobar, Pieczka and Wood (Escobar, 2010, p.11; Pieczka et al., 2010, p.19) argue that public engagement resonates with the communitarian ethos of the Scottish culture, a country where half of the population has been involved in some form of community or voluntary organisation. On the other hand, the Scottish National Party (SNP) has put an emphasis on 'doing politics differently' (Mitchell, 2010, p.99) and providing an open, accessible and participative Scottish Parliament (Consultative Steering Group, 1998). Yet, as this section will elaborate, its strategies for public involvement are being criticised for their orthodoxy

(Harvey & Lynch, 2012, p.4) and failing to deliver (Scottish Parliament, 2013). As Bailey notes (2016, p.24), further research needs to be done comparing the Scottish and UK contexts to draw conclusions. Nonetheless, it would seem that Scotland's devolved context, culture and policy landscape invite the incorporation of public participation.

In Scotland, senior officers and elected members of Scottish Local Councils already appreciated and welcomed an increase in public participation as a way of gathering information over a decade ago (McAteer & Orr, 2006). Scotland's political commitment to community engagement and co-production became tangible in 2007 (Scottish Government, 2009a, p.5) and consolidated through the Community Empowerment Action Plan (Scottish Government, 2009a) and the Better Community Engagement Framework and Programme (Barr & Taylor, 2007). These initiatives sought to educate public sector professionals and encourage citizen participation beyond consultation (see Appendix A). In the period 2007-2009, the Scottish National Party (SNP) embarked on The National Conversation, a consultation process over constitutional change including independence (Scottish Government, 2014). This 'programme of engagement with the Scottish public' involved organisations and citizens encouraging debate through consultation and deliberative initiatives (Scotland & Scottish Government, 2009, para.1.11). The Scottish government proposes that empowering communities is 'the best way of delivering change' (Scottish Government, 2009a, p.6), critical to the regeneration of Scotland's most disadvantaged communities and growing inequalities (Scottish Government, 2009b), as well as a way of invigorating and complementing representative democracy (Scottish Government, 2009a, p.7). However, Harvey and Lynch (2012, p.4) claim that the SNP chose a relatively conservative and orthodox consultation process not really driven by popular participation.

These early initiatives in community engagement and participatory politics crystallised into a Public Service Reform, instigated by a research report (Campbell, 2011) commonly known as the Christie Commission (Sime, 2011). The Christie commission marked a turning point in Scotland's strategy, calling on the Scottish Government and local authorities to undertake a substantial reform on how services are designed, delivered and funded, with the

aim of developing a sustainable and person-centred system (Campbell, 2011, pp.22, 76; Sime, 2011).

The aims of the Service Reform reflect the principles of asset-based approaches (McLean et al., 2017, p.7 ref. 20), as well as those of socially-driven design practices. Firstly, it advocates for people-centred and participatory approaches by aiming to ‘work closely with individuals and communities to understand their needs’ and ‘embedding community participation in the design and delivery of services’ (Campbell, 2011, p.ix). Secondly, it promotes a holistic and collaborative approach by demanding that service providers work in close partnership, with the aim to integrate service provision, improving outcomes and reducing overlaps (Campbell, 2011, p.vi). Thirdly, it prioritises a preventative approach through discovery to identify and target the underlying causes of inequality (Campbell, 2011, p.ix). These improvement trajectories were ‘supported by policymakers at Scottish and local government level’ (Wallace et al., 2013, p.9), and have already had a practical impact on the development of new policies (Wallace et al., 2013, p.10).

Nonetheless, despite the Scottish Government’s continued efforts to ‘put citizens and communities at the centre’ (Danson et al., 1990, p.9), the Parliament has declared that ‘the Reform of Public Services is not delivering’ (Scottish Parliament, 2013). Kevin Steward, Minister of the Scottish Parliament and convener of the Local Government and Regeneration Committee, warns that examples of collaboration across services and with the public are ‘outweighed by those who are resistant [...] to working together to bring real change’ (Gardham, 2013). This suggests that the challenges design-led innovation practices may face in the Scottish public sector go beyond policy, since policy encourages citizen-centric, collaborative and participatory practices in public service development. By examining what shapes public sector professionals’ decisions on design suitability, this research seeks to understand where ‘resistance’ may emerge. The next chapter will examine the incorporation of design practices in the public sector and discuss current knowledge on what may hinder the application of user-centric and participatory strategies and methods in the public sector.

2.2.5 Concluding remarks

This literature review has indicated that there is a robust discursive alignment between socially oriented and participatory design approaches and the Public Value Management (PVM) paradigm. As the public sector continues to explore ways of working that are congruent with this new paradigm, it is to expect a raise in the inclusion of citizen-centred thinking and levels of public participation in the public sector (Evans, 2015; Evans & Reid, 2013, p.23), which offers a unique and fruitful opportunity for those interested in incorporating design-led approaches in the public sector. As Bourgon points out (2008, p.399), ‘citizen engagement in service delivery opens unprecedented avenues for co-design, co-production and co-creation of government services’. As discussed through the section, the digitisation of services and the effects of austerity have further accelerated this paradigm shift. Furthermore, Scotland’s devolved context, policy landscape, and culture seem to support the incorporation of citizen-centric and participatory strategies. The following section explores in detail how designers have harnessed these opportunities by offering design methodologies as a solution to the public sector’s need to involve citizens (Podger et al., 2012; Bridge, 2012).

2.3 Design in the public sector

The previous two sections have described the growing convergences between design-led innovation approaches and policy at a discursive level, as they both promote the incorporation of citizen-centric and participatory practices to the public sector. This section explores in more detail the intersection between design and the public sector, with a particular focus on the actual application of these practices in the UK and Scotland.

The first subsection (2.3.1) provides a historical overview of the incorporation of design-led innovation in the UK and Scottish public sector, introducing key players and reports in the field. Section 2.3.2 then provides a review of the research landscape, revealing the kind of studies that have been undertaken in the area and outlining the gaps identified in the literature reviewed. Sections 2.3.3 explores different ways in which design practice is incorporated in public sector organisations. Section 2.2.4 looks into the applications and contributions of design-led innovation approaches in the public sector. While Section 2.2 identified opportunities for design emerging from the public sector's transition towards citizen-centric and participatory strategies, these two sections discuss how designers have harnessed these opportunities. Section 2.3.5 then provides a review of the challenges that user-centric and participatory practices face in their application in public sector contexts and includes both design literature and public sector literature on asset-based and co-production approaches. Finally, Section 2.3.6 critically examines the growth and impact that design has had in the UK public sector.

2.3.1 Design-led public sector innovation in the UK

The growth of design innovation practices in the UK public sector is primarily associated with the work of innovation bodies and labs, although efforts in this area are also increasingly emerging from within the UK government and higher education. Leading the charge have been innovation bodies and labs such as the Design Council (designcouncil.org.uk), NESTA (nesta.org.uk), the National Health Service's Institute for Innovation, FutureGov (wearefuturegov.com), as well as 'public service-oriented' design

agencies such as LiveWork (liveworkstudio.com), Engine (enginegroup.co.uk), Participle (participle.net) or Think Public (thinkpublic.com) in the UK and Snook in Scotland (wearesnook.com), which are becoming exemplars in the field (Mulgan, 2014; Kimbell, 2011b; Yee & Bremner, 2011; Bason, 2013; Bason & Christiansen, 2013).

Design-led public sector innovation in the UK was pioneered by the Design Council by establishing the RED group in 2004 (Design Council, 2018b; Cottam & Leadbeater, 2004) and delivering the programme The Design of the Times (DOTT) in 2007 (Design Council, 2018b; Cottam & Leadbeater, 2004; Yee & Bremner, 2011). These initiatives were aimed at developing ‘new thinking and practice on social and economic problems through design-led innovation’ (Yee & Bremner, 2011), by bringing together communities and service providers to address problems such as dementia, sexual health, schools and unemployment (Design Council, 2018b). Around the same time, research and innovation hubs were launched such as Nesta’s FutureLab in 2001 (Armstrong et al., 2014, p.32) and Lancaster University’s Imagination Lancaster in 2007 (Lancaster University, 2007).

Following the Cox Review (2005), promotion of design-led innovation practices focused on design’s economic impact on businesses. Both the Design Council and Nesta became influential organisations for research and practice, as they developed relevant innovation programmes and experimental projects, such as the *Designing Demand* programme launched by the Design Council in 2006 (Design Council, 2018b), or Nesta’s *Innovation Lab* in 2009 (Armstrong et al., 2014, p.32).

In the last decade, particularly after the 2013 report *Restarting Britain 2: Design and Public Services* (Design Commission, 2013), innovation bodies turned towards social design and public sector innovation. Nesta set up the Centre for Social Action in 2013 (Armstrong et al., 2014, p.32) and published the report *Design in Public and Social Innovation* (Mulgan, 2014). The Design Council expanded the Design Leadership Programme to the public sector (Design Council, 2018b) and published the report *Design for Public Good* (2013). Since 2014, the independently organised conference ‘Service Design in Government’ (govservicedesign.net) has become a yearly meeting point for practitioners, both designers

and public sector professionals, exploring the application of design methodologies in the public sector.

Design-led innovation initiatives have also emerged from within the UK Government. The Cabinet Office set up The Behavioural Insights Team in 2010 and the Policy Lab in 2014 (Siodmok, 2014, p.25; Mager, 2016, p.73; Armstrong et al., 2014, p.32), showcasing multiple projects where design innovation approaches are used to create a more iterative approach to policymaking (Christiansen, 2016, p.56). Moreover, in the higher education sector, design innovation courses specialising in the public sector are emerging, although this is still a slow trend, demonstrating the lack of maturity of the field (Hopiavuori & Alonso, 2016, p.75). The next section provides an overview of the UK design research landscape looking at the incorporation of design innovation in the public sector, including both higher education institutions and research and innovation bodies.

2.3.2 Research landscape

An AHRC scoping study in the area of social design (Armstrong et al., 2014), which included applications in public service and policy, identified that the research literature was ‘fragmented’ and ‘mostly dominated by problem-solving projects’ (p. 44). Certainly, a significant volume of the literature reviewed for this research (Appendix A) responded to descriptive single case studies (Yin, 1994, p.47-50), which focus on describing one design project to answer the practice-driven question: *what can design do in this situation to solve this problem?* These accounts address specific local issues (Armstrong et al., 2014, p.44), and while they are useful for practitioners and researchers entering contexts or projects with similar characteristics, it complicates navigating the literature. This fragmentation implies that the evidence on the contribution and challenges of applying design-led innovation approaches in the public sector appears scattered, as the field has lacked systematic effort to compare and evaluate the processes, outcomes and impact of design in different projects and contexts (Armstrong et al., 2014, p.41).

Furthermore, many researchers argue (Armstrong et al., 2014, p.41, 49; Chamberlain et al., 2015, p.52; McDonald, 2017, p.326) that, these standalone studies fail to build on prior

research to avoid duplication and to identify future lines of inquiry. Comparing across projects and contexts and incorporating the views of other stakeholders in addition to the views of designers allows a better understanding of the challenges and contributions of incorporating design practices. To address this gap and following the example of other contemporary studies (Yee et al., 2015b; Sangiorgi et al., 2015; Swiatek, 2016), this research focuses on public sector professionals' views and experiences, and takes a multiple case study (Yin, 1994, p.47-50) approach by comparing across six design-led innovation projects in different public sector organisations. In doing so, it seeks to identify patterns in public sector professionals' decisions and considerations regarding design's suitability.

In addition to these methodological gaps, design research in the public sector presents other gaps associated with the research questions posed and aims pursued. The literature reviewed suggests that design's need to demonstrate its contribution in public sector contexts has potentially led to an excessive focus on value and impact in design research. The field's need to raise awareness and demonstrate its value is reflected in the purposes and work of innovation and research bodies such as the Design Council and Nesta, as well as in the kind of research funded and pursued inside and outside academia. For instance, as part of the programme Design for Europe at the 2015 OECD conference *Innovating in the public sector*, Nesta delivered a workshop on designing and prototyping aimed at raising awareness of the value of design and introducing some key principles and tools (Dahl, 2015).

Contemporary design research by design organisations such as the Design Council and the Service Design Network aim to 'create awareness' (Mager, 2016, p. 101), support designers in 'convincing existing and potential public sector clients of the value of these approaches' (Mager, 2016, p. 102), and 'provide evidence on the impact and value of design' (Design Council, 2018b). The AHRC's calls for research on the value of design (Flood & Lambert, 2012; Armstrong et al., 2014) have also triggered academic research such as the *Valuing Design* project, aimed at identifying and mapping design impact and value in public and third sector service innovation projects (Yee et al., 2015b, p.4) or the DeSiD project (Design for Service Innovation & Development) (Sangiorgi et al., 2015), aimed at 'creating a

theoretical framework to support a more systematic approach to understanding and evaluating service design's contribution to service innovation and development' (p. 6), or the SPIDER project (Supporting The public sector Innovation using Design in European Regions), aimed at 'demonstrating the value of service design as a process for public service innovation that can achieve cost savings for providers and better user experiences for citizens', 'to build a critical mass of awareness and experience that can lead its application [...] and drive a shift in mind-set in public authorities' (Swiatek, 2016, p.8). Among their objectives (Swiatek, 2016, p.8) were (1) to encourage 'cultural change within public authorities', directed towards the integration of 'citizen-focused working methods' and changing 'attitudes among civil servants about how to respond to user needs in public services'; and (2) to 'create demand for service design' and build design capacity in the public sector by raising awareness, ensuring understanding and demonstrating the value of these approaches (Swiatek, 2016, p.8), by focusing on 'training for public authorities enabling them to employ service design methods', for which a toolkit and a design manual were produced (Swiatek, 2016, p.9). This need for demonstrating the value of design-led innovation practices is not exclusive to the public sector, but it extends to other areas. For instance, the Scottish Knowledge Exchange Hub (KEH) Design in Action (DiA, 2015) aimed to 'demonstrate design as a key strategy for economic growth and innovation within industry, focusing on the value of design-led innovation across business, technology and policy'.

The need for demonstrating the value of design in the public sector has an impact on how research questions are framed and research reported. It could be argued that some research reports present case studies as success stories that demonstrate the contribution of design, as in *The Design for Public Good* report (Design Council, 2013) or Kimbell's (2015) research into Policy Labs among others (Better By Design, 2014; Mager, 2016). *The Design in the Public Sector evaluation report*, published by the Design Council in 2018 and directed to public sector staff and design researchers (Design Council, 2018a), provides 'a summary of what [they]'ve learnt from helping public sector staff to use design approaches' through their

training programme (Design Council, 2018a). This report portrays three key findings, or rather, declarations of value and impact (Design Council, 2018a):

- (1) The programme supports to 'reframe' challenges
- (2) Design methods enable greater participation and different conversations.
- (3) The programme helps improve awareness of design and enables skills transfer

Similarly, Kimbel's (2015) research into design-led policy-making at Policy Lab sought to understand 'what difference a design-based approach makes to policy making' (p. 3), or in other words, its contribution. As a consequence, its key findings portray how Policy Lab and its design approach support organisational learning and the development of new ways of working, builds confidence in new insights and policy ideas, and supports effective collaboration with stakeholders (p.1). It could be argued that these case studies are more similar to the kind of client testimonies a company would display in their website than research accounts.

This collection of examples does not seek to argue that all design research in the public sector area is resolved to demonstrating the value of design and the impact of programmes incorporating design practices in the public sector. This chapter includes many other empirical studies into design in the public sector with a broader scope of inquiry. For instance, Bailey's (2016) research into PolicyLabs dives into public sector professionals' perspectives on the emergent design culture in Whitehall. There are also seminal position papers based on the experiences of practitioner-researchers such as Geoff Mulgan (2014), head of Nesta, or Andrea Siodmok (2014), former Chief Design Officer at the UK Design Council and Cornwall Council Programme, which offer critical reviews of design research and practice in public services and policy and reveal gaps in research and challenges to their implementation. But the literature reviewed suggests that design's need to demonstrate its value is shaping funding opportunities and the questions and aims of much design research, which not only determines the kind of phenomena studied and the data gathered, but it also has the potential of biasing its findings.

This research would argue that funding and research bodies and researchers must be careful to ensure that the need to demonstrate design's value in the eyes of the public sector does not lead design inquiry towards promotion-driven research, biased towards scoring successes rather than understanding what is happening.

Some authors have argued that design research in the public sector has lacked criticality (Podger, 2012, p.86; Mulgan, 2014; Armstrong et al., 2014, p.49) and needs more robust evaluation to build legitimacy in the public sector (Chamberlain et al., 2015, p.52; McDonald, 2017, p.326). The AHRC scoping study (Armstrong et al., 2014, p.8) pointed out that design research in areas other than healthcare has lacked capacity and maturity. This lack of criticality has been partly attributed to the fact that design research into design-led innovation approaches has been pioneered by innovation bodies (Armstrong et al., 2014, p.32), who seek promoting and developing practice (Armstrong et al., 2014, p.49), while it has been neglected by academic inquiry (Flood & Lambert, 2012, p. 5). Innovation bodies pursue having an impact rather than generating knowledge (Armstrong et al., 2014, p.8), and produce project and impact reports that do not intend to be academically rigorous (Armstrong et al., 2014, p.33, 44). Even if this was the case, it is worth pointing out that organisations such as the Design Council and Nesta have produced a rich body of case studies and reports that have been essential for the growth and development of design practices in the UK public sector.

Nonetheless, design research focus on value, outputs and impact, has left unexplored other areas. The study of the interactions and processes that lead to public sector professionals' uptake or rejection of design approaches has been neglected. Although research questions emerged from empirical insights (see evolution of questions in Appendix C), this thesis addresses this gap by taking a fresh perspective of the uptake and incorporation of design-led innovation approaches in the public sector. This research, instead of seeking to evaluate and measure the value of design, explores public sector professionals' decision-making processes when evaluating the incorporation of design strategies and methods in their work, and does this in response to empirically developed

questions. Research into ‘what is happening’ instead of into ‘how is design contributing value’ can offer a broader understanding of design uptake and valuable insights for supporting the incorporation of design-led innovation approaches in public sector contexts.

To explore how design-led innovation approaches fit within the public sector, the next three sections examine the literature germane to how these practices can be integrated in public sector work, their contribution and the challenges that emerge in their application.

2.3.3 Incorporation of design in public sector organisations

In the report *Design for Public Good*, the Design Council (2013, pp.8, 10) introduced a ‘diagnosis tool and roadmap for progression’ for public sector organisations to assess their use of design. Building on prior representations of design’s expanding role (such as the design ladder, Figures 6-8), the Public Sector Ladder (Figure 12) depicts different degrees of integration of design-led innovation approaches in public sector organisations.

The first step of the ladder, *Design for Discrete Problems*, is characterised by one-off design interventions, as here design ‘is not embedded in the commissioning organisations’ (Design Council, 2013, p.8). These one-off projects can range from small interventions to projects with systemic implications, and are clustered into three types: design for public services, humanising technology and systemic change (Design Council, 2013, p.3). The second step of the ladder is *Design as Capability*, whereby design becomes part of the organisation’s culture. Employees hold skills in commissioning and using design (Design Council, 2013, p.8) and embed design methods and processes in their work (Design Council, 2013, p.3). The final step, *Design for Policy*, is concerned with strategic applications of design (Design Council, 2013, p.3), and is described as policy-makers using design, facilitated by designers, to overcome common structural problems such as high-risk pilots and poorly joined up processes (Design Council, 2013, p.8).

More recently, a Service Design Network (SDN) report (Mager, 2016, p. 41) developed a diagram depicting different levels of integration of design in the public sector (Figure 13): (1) as new capability, (2) for service interactions, (3) for service systems, and (4) for policy.

Both these representations offer useful tools for bringing awareness, shifting expectations and promoting the emerging approaches, roles and contributions of design.



Figure 12 The Public Sector Design Ladder (Design Council, 2013)

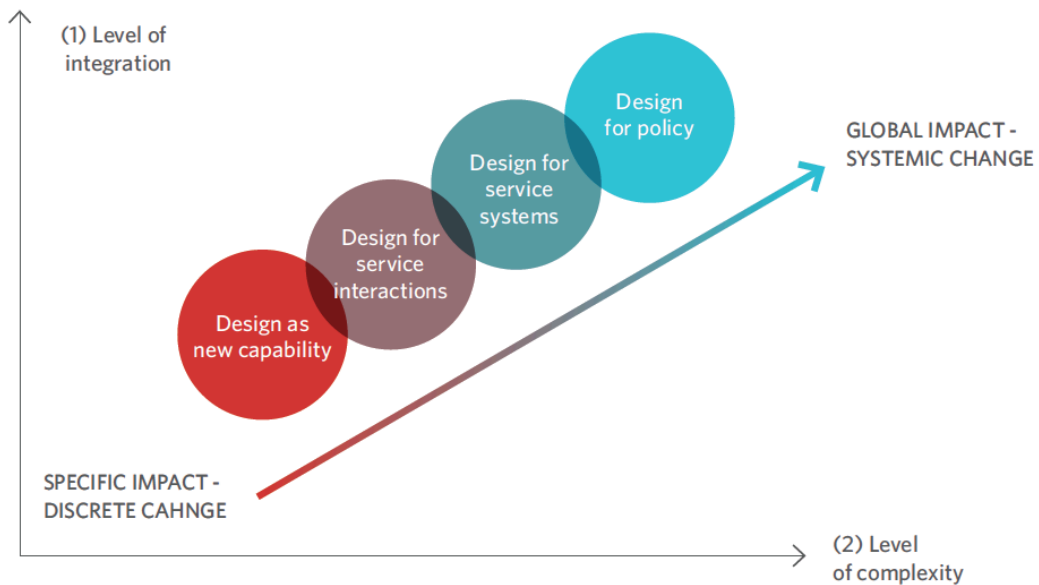


Figure 13 Integration of Design in the Public Sector (Mager, 2016, p. 41)

Emerging evidence suggests that design's impact can be greater when incorporated at a strategic level (Whicher, 2015). Accordingly, these representations of design's role and remit

in the public sector strive for policy as design's highest degree of integration in the public sector. It could be argued, however, that the highest degrees of design's democratisation can be found in the healthcare area, where design is beginning to be applied without designers. Design's work to improve patient experience has resulted in the development of a model known as experience-based co-design that healthcare professionals can use without the intervention of designers (McDonald, 2017, p.311), and which has been adopted by the healthcare community internationally.

2.3.4 Design's contribution in public sector contexts

This section discusses where and how design is currently contributing to public sector contexts, while simultaneously illustrating how design is portrayed to the public sector. To capture how design-led innovation approaches are represented in public sector contexts, this section includes not only the design research literature but also training and marketing texts from design companies and organisations targeted at public sector professionals. Aiming to convey clearly the way in which designers pitch and introduce design in this context, this section relies heavily on direct quotes from other texts.

In the area of public service innovation, design methodologies are successfully applied in a variety of public sector areas in the UK, such as education, healthcare, social welfare, or transport (Armstrong et al., 2014, p.24; Kimbell, 2009b, p.9; Bradwell & Marr, 2008, p.21), and with a wide range of purposes (Yee et al., 2015a, pp.2, 14). The development of digital services has allowed designers to 'enhance citizen choices and provide integrated services designed around citizen needs' (Bourgon, 2008, p.399; Mager, 2016, p.12). Additionally, with the increasing visibility of strategic design and design thinking (Armstrong et al., 2014, p.31), the discipline has moved towards higher strategic levels within the public sector (Design Council, 2013, p.6), such as organisational change and policy (Mager, 2016, p.9). This wide range of design applications is one of the reasons why the literature appears to be 'fragmented' (Armstrong et al., 2014, p.41), as explained in the Research Landscape section (2.3.2)

Although design-led innovation approaches can have many different applications within the public sector, independently of design's role or the area of the public sector in question design texts emphasise two contributions: (1) saving money and resources, and (2) improving users' experiences and engagement. When pitching design for public sector organisations, design has appropriated the government's austerity rhetoric by appealing to the public sector's 'shrinking budgets' (Nesta, 2017, p.3), its need to 'innovate with fewer resources', lower risk and achieve 'efficiency savings' (Reed, 2013; Whicher, 2015), or by arguing its need to replace the 'big bad expensive ways of delivering government' (FutureGov, n.d.). User-centric approaches are also proposed as a means for governments to respond to 'rising expectations, and fragile trust in political systems' (Nesta, 2017, p.3).

There are several ways in which design methodologies argue that these goals can be achieved: (1) by offering a better understanding of and involving users; (2) collaborating with stakeholders; (3) simplifying complexity; and (4) through iteration and prototyping.

Understanding users needs

Designers argue that public services, organisational processes and policies that do not meet the needs of the people they are intended to serve do not represent savings (Design Council, 2013, p.7), and that the public sector often guesses what these users might want (Thoelen et al., 2016, p.7). Instead, design ensures the 'appropriateness of solutions by better understanding user needs' (Design Council, 2013, p.6). Design user research claims to go beyond other methods used in the public sector, such as focus groups or surveys, identifying needs and behaviours that people are not aware of (Design Council, 2013, p.7; The Behavioural Design Lab, 2013, p.5). Furthermore, design looks for the real roots of the problems allowing for earlier interventions and preventing problems from growing (IDEO, n.d.; Swiatek, 2016, p.33; Better By Design, 2014, p.8), which aligns the prevention agenda fostered by the public service reform (Campbell, 2011).

The rationale for involving users ranges from improving outputs, to aspirations towards democratisation, to saving resources. Firstly, designers argue that engaging users in co-creation improves outputs and saves resources by producing 'relevant, effective and efficient

services' (Thoelen et al., 2016, p.7), as 'those closest to the problem have the expertise, insight and motivation to solve it' (Think Place Global, n.d.). Design methods allow 'look[ing] at the problem from different perspectives' (Swiatek, 2016, p.39) and 'assessing users' and providers' needs and goals in an objective and empathic manner' (Yee et al., 2015a, pp.13–14).

Design also promises higher adoption of services, as the involvement of citizens and service providers in the creation process ensures greater ownership (Design Council, 2013, p.6; Swiatek, 2016, p.4). However, this claim may not always be accomplished. Research in the health sector has shown that instead of enhancing ownership, some 'community members [can] become frustrated because [design] is too hard for them to understand' (Bradwell & Marr, 2008, p.30). Adopting the austerity rhetoric, some texts allude to the potential of saving resources by 'empowering people to solve their problems by themselves', as by 'harnesses[ing] people's natural ways of operating, [design] reduces bureaucracy, improves users' experience and increases voluntary compliance' (Swiatek, 2016, p.33). By contrast, some texts appeal to wider democratising aspirations, such as demanding a 'rebalancing of existing power structures' by 'putting control in the hands of the many, not the hands of the few' (FutureGov, n.d.), improving outputs for 'people, the organisation and society' (Think Place Global, n.d.), or demanding greater transparency in decision making (Reed, 2013).

Finally, specific to the area of e-government and digitalisation of services, design appeals to the modernisation of services. Designers argue that modern information and communication technologies have changed citizens' expectations of public sector performance (Bourgon, 2008, p.393), being now compared against commercial services and thus expected to be agile and flexible, personalised and responsive, transparent and effective (Thoelen et al., 2016, p.17; Reed, 2013). Designers offer to respond to these expectations by humanising technology (IDEO, n.d.; Thoelen et al., 2016) and improving efficiency (Mager, 2016, p.12; Siodmok, 2014, p.27).

Collaborating with stakeholders

Designers argue that a collaborative approach enables developing solutions that ‘work for everyone’ (FutureGov, n.d.), and ensures ‘better fit for purpose and better-targeted public interventions’ (Swiatek, 2016, p.33). By grounding solutions in citizen and employee needs and aspirations (IDEO, n.d.; Thoelen et al., 2016, p.7), designers ensure that ‘the service is practical and fits culturally’ (ThinkPublic, n.d.).

The need to save resources and improve outcomes for users has led to policies demanding the integration of services and greater collaboration across service providers and institutions (Campbell, 2011). Design’s collaborative approach is promoted as an antidote to the public sector’s silo structures (Design Council, 2013, p.6).

Design argues that its methods support identifying who needs to be involved in the design process (Design Council, 2013, p.6), and facilitate communication across stakeholders and multidisciplinary teamwork (Captain Motion, 2011; Design Council, 2013, p.7; Swiatek, 2016, pp.33, 39). Research is showing that design does this by creating a ‘safe space where discussion, feedback and criticism occur in a supportive, non-judgemental and non-defensive way’ (Yee et al., 2015a, pp.11–12). Research shows that designers’ use of visualisation and storytelling techniques enable understanding and sharing of ideas across stakeholders (Yee et al., 2015a, pp.10, 12; Better By Design, 2014, p.8), providing a common language (Captain Motion, 2011) and getting people on the same page quickly (IDEO, n.d.). In ways like this, design methods are expected to harness creativity (Swiatek, 2016, p.39) by removing constraints and ‘enabling more open thinking’ (Bailey, 2016, p.17; Yee et al., 2015a, p.11). Although it is worth noting that collaborative endeavours in the public sector may find resistance (Gardham, 2013), and public sector professionals argue that designers’ assume ‘that everybody is willing to participate in a collaborative creative process’ (Bailey, 2016, p.22).

Simplifying complexity and lowering risk

Design's visual methods are also promoted for the way in which they help to 'see problems differently' (Swiatek, 2016, p.33), simplify complexity and clarify thinking (Yee et al., 2015a, p.12; IDEO, n.d.; Swiatek, 2016, p.39). Research suggests they do this by 'acting as a translational tool, making abstract issues concrete and understandable, transforming complex information into shareable artefacts' (Yee et al., 2015a, p.12) and 'translating evidence and insights into ideas' (Bailey, 2016, p.18). For example, mapping methods such as blueprinting allow visualising interrelated actions while considering the entire environment of a service (Captain Motion, 2011), which enables aligning what designers call the front and back-end of a service (Thoelen, 2016, p.50; Sangiorgi et al., 2015) - that is, 'the service experience and delivery systems' (Captain Motion, 2011; Snook, n.d.). Such visualisations 'reveal patterns, connections and opportunities for change' (Yee et al., 2015a, p.12; Better By Design, 2014, p.8), thus allowing the 'removal of duplicating or low-value services' (Swiatek, 2016, p.33).

Design's iterative approach to developing solutions also simplifies the inherent complexity of public services by iteratively developing and testing different elements of the process or service in order to save resources and lower risk. Design proposes iterative prototyping and testing as an alternative to the public sector's tendency to jump straight into the development of expensive and risky pilots (IDEO, n.d.; Reed, 2013; Design Council, 2013, p.6), as iteration makes it possible 'to design out unintended consequences and risk of failure' (Design Council, 2013, p.7).

The next section discusses in more detail the challenges that these design approaches may face in public sector contexts.

2.3.5 Challenges for design

This section examines the barriers and limitations to the implementation of the design-led innovation approaches in public sector organisations. This literature review includes research into other citizen-centric and participatory methodologies used in the public sector, such as asset-based and co-production approaches, as it would be expected that design

would face similar if not greater barriers. In both the design and the public sector literature, most of these insights are primarily drawn from the areas of policy, e-government, and health, where there is the most uptake and research into citizen-centric and participatory approaches.

Although the rhetoric of public involvement has transcended many levels of public sector rhetoric, the current practices and culture in the public sector hinder the implementation and adoption of more meaningful forms of citizen participation and the implementation of PVM (Coats & Passmore, 2008; Tapscott & Williams, 2006; Podger et al., 2012, p.109; Davidson & Elstub, 2014, p.27). This section provides an overview of the barriers more commonly identified in the literature to the incorporation of design or other citizen-centred and participatory strategies.

Skills and attitudes towards users and user-centred strategies

Despite the public sector's increasing interest in user-centric and participatory approaches, contextual exploration and user research are uncommon (Kotamraju & van der Geest, 2012a, p.264). For example, Hung (2012, pp.249–250) reports that the development of digital services does not even consider web-analytics for understanding demand. Public services in general have traditionally been designed 'back to front', involving users only at the end of the process, when it is too late to incorporate their views into the design (Bridge, 2012, pp.168–169). One key issue is that public sector professionals lack the frameworks and are yet to acquire the skills for understanding and engaging with users (Hung, 2012, pp.252–253; Bason, 2013, p.17; Podger et al., 2012, p.109; Yee & Choukeir, 2016). Furthermore, when intending to incorporate users' needs and views, organisations fail to consider or underestimate how citizen-centred changes to the services delivered will require systemic and process changes (Hung, 2012, p.250), and instead try to fit the new changes into the existing processes (Kotamraju & van der Geest, 2012a, p.271; Hung, 2012).

In addition to this lack of capability, an even more profound challenge to the incorporation of citizen-centred methods is that fundamentally their relevance and validity are both still questioned. Indeed, the significance of user's experiences is not yet embedded

into the ‘DNA of public sector organisations’ (TCS & Civil Service World, 2015, p.3). Responding to user needs is not always deemed essential to service quality, as organisations ‘have their own needs and goals, which do not necessarily succumb easily to those of their users’ (Kotamraju & van der Geest, 2012a, p.262). Integration of user needs is secondary to finding cheaper, supposedly more efficient ways of addressing service provision (Bradwell & Marr, 2008, p.42).

The use of qualitative strategies for understanding user’s needs and experiences also faces barriers. Qualitative or ‘unstructured data [...] which is not easily organised in databases or spreadsheets’, is rarely used in the public sector (TCS & Civil Service World, 2015, p.4). The public sector requires figures on which to base decisions (Bradwell & Marr, 2008, p.38; McDonald, 2017, pp.312, 323), as public services must cater for all types of users (Hung, 2012, p.250), including the ‘mainstream and the exceptions’ (Kotamraju & van der Geest, 2012b, p.265). Evidence suggests (Bradwell & Marr, 2008, p.40) that the scalability of co-design processes, and demonstrating a diverse and representative sample of individuals remain a problem for design research methods

Political and accountability structures

It is as yet unclear how participatory practices, and the transfer of power to citizens they imply (Alford, 2016, p.675; Bradwell & Marr, 2008, p.45), fit within the existing ‘formal government structures and accountability processes’ (Podger, 2012, p.85; Coats & Passmore, 2008, pp.21, 24). The PVM framework advocates for ‘a pragmatic and non-ideological approach to the delivery of public services’ (Coats & Passmore, 2008, p.5), and the detachment of the management of public services from ‘political shifts and changing policy choices’ (Thoelen et al., 2016, p.17). The co-creation of public value requires accountability and governance to be decentralised, networked and distributed (Shaw, 2013, p.491; Stoker, 2006, p.56; Podger et al., 2012, p.109), allowing for ‘context-specific, localised decision-making’ (Shaw, 2013, p.489). Within current UK structures, however, public sector institutions are not yet ‘sufficiently porous’ (Shaw, 2013, p.485) to allow the incorporation of citizens’ contribution. Services improvement and local participatory endeavours are limited

to 'delivering the policies and programmes developed by central government' (Davidson & Elstub, 2014, p.22; Bogdanor, 2009, p.258; Podger et al., 2012, p.107).

A decade ago, together with other organisations, the Scottish Government commissioned a report (Coats & Passmore, 2008, p.24) to examine the implementation of the Public Value framework and inform the service reform. This report (Coats & Passmore, 2008, p. 20), argues that, while participatory practices sound 'compelling in theory, the messiness of [their] practical implementation' must be noted, as the public sector faces the highest levels of public scrutiny (Yee et al., 2015a, p.10). Since responsibility is 'in the hands of elected public servants and their officials', they discourage 'adding extra layers to already complex accountability frameworks within which public service delivery is nested' (Coats & Passmore, 2008, p.24). Participation is seen as an 'add-on that cannot constrain the power of institutional representation' (Alford, 2016, p.675) and improvement and change are still expected to be driven from the very top (TCS & Civil Service World, 2015, p.3).

The hierarchical accountability structures currently in place elicit ways of working that constrain the integration of design and other citizen-centred and participatory approaches. For instance, linear, top-down and expert-led decision-making processes do not allow the meaningful incorporation of citizen-centred and participatory approaches (Hung, 2012, pp.249–250; Siodmok, 2014, p.26; Bason, 2013, p.17; Hopiavuori & Alonso, 2016, p.75). As such it becomes a challenge to break down the barriers between providers and users or high-level policy makers and frontline (public-facing) staff (Bradwell & Marr, 2008, pp.36–37; Bailey, 2016). Current accountability frameworks and complex bureaucratic processes (Mager, 2016, p.21; Hopiavuori & Alonso, 2016, p.75) complicate navigating the system and moving ideas and strategies into implementation and delivery (Siodmok, 2014, pp.28–29), even in contexts where public sector professionals are 'ideologically and practically committed to user centricity' (Kotamraju & van der Geest, 2012b, p.265). It is of note that hierarchical accountability has turned into risk-averse organisations and public sector professionals into 'fearful' of attempting anything new or different (Hung, 2012, pp.249–250; Siodmok, 2014, p.26; Bason, 2013, p.17; Hopiavuori & Alonso, 2016, p.75).

2.3.6 Growth and impact of design in the UK public sector

Although the application of socially-oriented, user-centred and participatory design approaches in public sector contexts is far from new (Bjögvinsson et al., 2012; Emery, 1989), the field has experienced rapid growth in the last decade (McDonald, 2017, p.311; Armstrong et al., 2014, p.38; Mulgan, 2014), becoming ‘an emergent, rapidly accelerating global trend’ (Bailey, 2016, p.14; Podger, 2012, p.85). Design has gone from being an ‘add-on’ to having ‘evolved into a fully joined-up innovation methodology’ (Design Council, 2013, p.6). Design texts report a growing interest and demand from within the public sector to understand the potential of incorporating design methodologies to public service and policy design (Design Commission, 2013; Brecknell, 2013; Design Council, 2013; Armstrong et al., 2014; Design Council, 2015; Bailey, 2016).

However, despite the UK public sector’s enthusiasm for co-design a decade ago (Bradwell & Marr, 2008, p.23), and even though the public sector has become the UK’s largest client for service design (Mager, 2016, p.12), this demand has not scaled up as designers might have expected (Siodmok, 2013). The employment of designers by government remains an exception, relying on ‘expensive external consultancy’ that is unsustainable in the long term (Thoelen et al., 2016). Design innovation practices still occur ‘at the fringes’ (Bradwell & Marr, 2008, p.23), ‘lacking visibility beyond fairly narrow circles’ (Design Council, 2015). Reflecting this lack of uptake, critics have observed the constant need for demonstrating the value of design within the UK public sector (e.g. Siodmok, 2013). Following the 2013 report *Restarting Britain 2: Design and Public Services* (Design Commission, 2013), an article in the Civil Service World website read: ‘Civil servants urged to use design techniques to develop services’ (Brecknell, 2013). Baroness Denise Kingsmill, a co-chair in the inquiry, commented: ‘The UK is a world leader in design. Yet we seem reluctant to apply that expertise to that which arguably requires the most effective design: public services’ (Brecknell, 2013).

To remedy the situation, contemporary design research and programmes in the public sector focus on supporting designers in ‘convincing existing and potential public sector

clients of the value of these approaches' (Mager, 2016, p.102), striving to create demand, raise awareness and demonstrate design's value (Yee et al., 2015b, pp.4–5; Swiatek, 2016, p.8; Mager, 2016, p.13; Nesta, 2015). It is also worth examining the growth of design-led public service innovation from the perspective of the public sector. Design approaches represent a fraction of the customer-centric and participatory methodologies being explored in the public sector, methodologies which in general have had a slow take-up in the public sector across the UK, as acknowledged in the public sector literature (TCS & Civil Service World, 2015, p.5; Gardham, 2013; Scottish Parliament, 2013). In this literature, with the notable exception of the Australian Journal of Public Administration, there are no discussions specifically of design-led innovation approaches beyond the mention of some tools such as service blueprinting (Alford, 2016, p.683) and customer journey mapping (TCS & Civil Service World, 2015, p.6), which design may share with other approaches. Other methodologies such as asset-based and co-production approaches are already more established within the public sector and have developed a greater research base on how they perform in public sector contexts. Additionally, public sector accounts of the success of incorporating user-centric and participatory practices seem less optimistic than those in the design literature.

2.4 Concluding remarks

This chapter has shown that, while the growth of design in the public sector in the last decade is undeniable, design innovation practices still lack visibility, despite the public sector's increasing interest and discursive alignment with design's user-centric, collaborative, and participatory approach. This chapter's review of the current literature suggests that design's need to demonstrate its contribution in public sector contexts has potentially led to an excessive focus on value and impact in design research as well as a lack of criticality. By focusing on value and impact, design research has sought to answer why public sector professionals should adopt design methodologies while leaving unquestioned the reasons why public sector professionals may decide not to use design. The emphasis of design research on impact and outputs also leaves unexplored the interactions and processes that lead to its uptake or rejection. Studies on value and impact capture what aspects of design approaches public sector professionals may find valuable or challenging, but they seldom go on to question why those are seen as valuable or challenging, or whether those views will determine their uptake or rejection of design in the future.

In light of this gap in the field, rather than trying to demonstrate design's value, this research seeks to understand what shapes public sector professionals' views and decisions on the application of design approaches, strategies, and methods. While sharing the underlying aim of identifying opportunities for enhancing uptake of design-led innovation approaches in the public sector, this research studies uptake as a contingent output of public sector professionals' processes evaluating design's suitability. Without understanding the reasons that lead public sector professionals to deem design strategies and methods to be suitable or unsuitable in their work, design innovation will not be able to address public sector professionals' journey from awareness and interest into uptake and sustained application.

The next chapter details the theoretical and methodological approach taken to study how public sector professionals evaluate the suitability design-led innovation approaches in their work.

Chapter 3

METHODOLOGY

APPROACH TO STUDYING HOW DESIGN IS EVALUATED

As noted in the introduction (p.26), the research had a grounded or inductive character (Charmaz, 2014, p.188; Bryman, 2004, p.540; Creswell, 2007, pp.19, 21), where research questions and theory were developed from empirical data. Additionally, the early exploratory stages of the research took a practice-based approach (see p. 51) where the researcher participated as an innovation designer in the projects studied. The purposes of this practice were to ground research questions and objectives in empirical and experiential insights (Lincoln & Guba, 1985; Mareis, 2012; Charmaz, 2003; Maxwell, 1996, pp.27–29) and ensure their practical relevance by gaining an insiders' view and harnessing the researcher's design sensibility (Fallman, 2008, p.17; Glanville & van Schaik, 2003; Robson, 1993, pp.37–38, 447; Creswell, 2007, p.97). As the investigation advanced, the methodological approach was refined into constructivist or naturalistic case study (Lincoln & Guba, 1985; Robson, 1993, p.61; Lauckner et al., 2012).

This chapter explains the worldview behind this research, and its methodological approach and design. It begins by describing the research theoretical framework. This includes a literature review on the social construction of meaning, which is core to both the research epistemology and methodology, and to its focus on evaluation as a process of meaning construction. In doing so, this section also explains how this research intends to answer research questions and fulfil research aims by looking at public sector professionals' processes of meaning construction as they learn and evaluate design. This section also discusses the methodological implications of the theoretical underpinnings of the research. Section 3.2 then reveals the rationale and decisions made in the selection of a constructivist case study methodology, as well as explaining what other methodologies were considered and discarded. The following section (3.3) explains the research design, describing the

Methodology

different research phases and briefly introducing the projects studied, and provides details on the selection of cases, the people involved and the researcher's role. Then the following section (3.4) describes the kinds of data gathered, methods used and reflects on the quality of the data gathered, ethics and validity. The final section describes the analytical approach and stages, but detail on the analytical strategies and methods employed are presented in Appendices G, H and I.

3.1 Theoretical framework

The previous chapter noted how this research addresses gaps in the literature by looking at design uptake not as an output but as a process. This research understands public sector professionals' uptake or rejection of design-led innovation approaches as a contingent output of an iterative evaluation process. This research seeks to understand what leads to uptake or rejection of design approaches, strategies, and methods by studying *how public sector professionals' evaluate their application, and what shapes their decisions*.

To answer these questions, the research inductively develops a theoretical framework by combining empirically grounded theoretical concepts with the relevant literature (Suddaby, 2006, p.637). This theoretical framework includes two conceptualisations: (RQ1) a conceptualisation of evaluation as a process of meaning construction, and (RQ2) a conceptualisation of the social layers and factors that may have an impact on public sector professionals' views and decisions regarding design suitability. Early stages of these conceptualisations contributed to refining the scope of the context and guide data gathering, and thus are introduced in this section. However, these conceptualisations continued to be refined through the research (see *answering research questions* in Chapter 6).

This section begins by describing the theoretical underpinnings behind these conceptualisations and then moves to describe how these theoretical concepts apply in the empirical context. The final section discusses how this theoretical understanding impacts the selection of methodology.

3.1.1 Epistemology and ontology

As noted in the introduction (p.27,33), meaning construction is central to this research and intrinsically linked to epistemological and ontological considerations (Creswell, 2007, p.16-17) – which presume the nature of knowledge and reality respectively. For clarification, *meaning construction* refers to the mental and social processes (Crotty, 1998, p.58) through which individuals (and collectives) create meaning (Leeds-Hurwitz, 2006, p.232; Charmaz, 2014, p.184) for themselves and for others (Leeds-Hurwitz, 2006, p.229). This research

defines these *meanings* as the mental, linguistic, or visual representations of reality (Kvale, 1995), such as values, rules, mental models, beliefs or perceptions. Existing meanings or beliefs act as exemplars and rules guiding individuals' behaviour (Blumer, 1969, p.2), their use of language, and the construction of subsequent meanings (Nickols, 2000; Nonaka & Takeuchi, 1995). Therefore, these meanings are dynamic, constructed and modified through individuals' experiences and interactions with the world (Leeds-Hurwitz, 2006, p.232; Charmaz, 2014, p.184). Building on this understanding, the research seeks to study public sector professionals' processes of meaning construction as they interact with and evaluate design, as well as the existing meanings shaping their views and decisions.

This understanding of meaning construction builds on constructivism (Dewey, 1997; Khalil, 2004; Morgan, 2014; Harney et al., 2016), constructionism (Berger & Luckmann, 1966; Andrews, 2012), symbolic interactionism (Blumer, 1969, p.2), and complexity theory (Sawyer, 2005). For clarification and following Crotty's advice (1998, p.58), this research will use the term constructivism exclusively to refer to epistemological considerations of individual meaning construction, while (social) constructionism is used to refer to the collective construction and transmission of socially shared meanings.

In terms of epistemology (Creswell, 2007, p.16-17), this research rejects positivist views of knowledge (Blumer, 1969), which assume the existence of an objective reality to be discovered. Instead, this research adopts a constructivist epistemology (Dewey, 1997; Khalil, 2004; Morgan, 2014; Harney et al., 2016), which accepts the existence and dynamicity of multiple and conflicting realities. This epistemology sees knowledge (or meanings) as inherently interpretive (subjective) and transactional (developed through social interaction) (Guba & Lincoln, 1994, p.109-111; Lincoln, 1995, pp.286-287). Positivist approaches fail to acknowledge the impact of researchers' value frameworks and processes (Alvesson, 1993, p.27; Robson, 1993, p.9; Andrews, 2012; Charmaz in Gibbs, 2013) by seeking to 'develop an objective interpretation of subjective experiences' (Andrews, 2012, sec.origens). By adopting a constructivist epistemology, this research acknowledges the researcher's impact on the questions pursued, research process and paradigm chosen, and interpretation of empirical

materials (Cronbach, 1971; Robson, 1993, p.9; Kvale, 1995, p.28; Maxwell, 1996, pp.90–91; Alvesson, 1993, p.27; Alvesson & Sköldberg, 2000, p.9; Berger, 2015; Khalil, 2004, p.2).

It is worth of note here that this research acknowledges implicit and tacit dimensions of knowledge (Nickols, 2000; Nonaka & Takeuchi, 1995; Polanyi, 1967; Polanyi, 2003), *internalised* meanings and beliefs that are so ‘ingrained’ in individuals’ mental processes and behaviours that they are taken for granted (Nonaka & Takeuchi, 1995, p.8) and operate at a subconscious level. From this position, meaning construction, language use and behaviour are not necessarily conscious and purposeful processes. This research aims to identify not only explicit but also implicit meanings that may be influencing both participants’ and the researcher’s views and decisions.

While holding a constructivist epistemology and acknowledging that meaning and knowledge are constructs of the individual mind (Lincoln, 1995, pp.286–287), ontologically (Creswell, 2007, p.16-17), this research positions itself alongside social constructionists (Andrews, 2012; Berger & Luckmann, 1966; Leeds-Hurwitz, 2006) by acknowledging that social structure and normative environments do influence individual meaning-making and behaviour; even if just as individual and collective mental representations of an elusive (Gleiniger, 2008, p.55; Gandy, 2008, p.562) or ‘subtle reality’ (1992).

Therefore, this research recognises the simultaneous and mutual causal effects between individuals, their interactions and the social structures in which they are embedded (Giddens, 1984; Sawyer, 2005; C. Brown, 2008) – in this case public sector organisations. To better describe the relationships between social structure and the creation of individual and collective meanings, this research draws on ontological complexity (Ellis, 2004; C. Brown, 2008; Wimsatt, 1994) and Sawyer’s paradigm of social emergence (2005). Public sector organisations can be seen as complex social systems (Sawyer, 2005; Bouchikhi, 1998): vast and richly interconnected networks of individuals and artefacts connected through non-linear relationships, mediated through language, and hierarchically structured. Organisations and their cultures are contingent and socially constructed, perpetuated or changed through individuals’ behaviour and interactions (Charmaz in Gibbs, 2013; Sawyer,

2005, p.216; Berger & Luckmann, 1966). In turn, however, organisations also act as ‘behavioural settings’ (Argyris & Schön, 1996, p.7) that embody sets of shared meanings, which explicitly or tacitly, guide professionals’ perceptions and interactions.

It is important to emphasise here that by focusing on studying the evaluation processes of individuals, the uptake of design-led innovation approaches at an organisational level cannot be understood, explained nor predicted, as social processes do not mimic individual processes (Sawyer, 2005, p.4). This position undermines the notion that organisational behaviour is simply the sum of the behaviours of individuals (Blumer, 1969, p.20). As Argyris and Schön point out (1996, p.7), sometimes organisations seem not to be able ‘to learn what all of its members know’.

The next two sections detail how these theoretical considerations developed into the conceptualisations of (a) the evaluation process, and (b) the different layers of social interaction to be considered when studying meaning construction.

3.1.2 Conceptualising evaluation as a process

By understanding meaning construction that is dynamic and socially situated process (Leeds-Hurwitz, 2006, p.232; Charmaz, 2014, p.184), this research expects public sector professionals’ views on design’s suitability to evolve and be shaped by (1) their interactions with design practice and practitioners; and (2) existing meanings, individual or socially shared in their settings. Subsequently, this research situates the study of public sector professionals’ interactions within the boundaries of real design-led innovation projects in the public sector.

Krippendorff’s (2006, p.83) model on the stages of use of designed artefacts (Figure 14) is useful to convey the connection between public sector professionals’ evaluation processes in relation to project stages (Figure 15). Krippendorff’s model is particularly useful because it characterises ‘usage’ as learning process (2006, pp.71, 79), which allows to capture the dynamic nature of meaning construction and conceptualise evaluation as a process where public sector professionals’ degrees of awareness of design and their views on its suitability evolve as they interact with design practice and practitioners within their projects.

In the same way, public sector professionals evaluate the ‘usage’ of design-led innovation approaches, strategies and methods in their projects.

Krippendorff (2006, p.83) defines three stages of use of designed artefacts: recognition, exploration and reliance. These can be adapted to the incorporation of design in public sector projects through: awareness, exploration and uptake; with the intermediary stages of procurement and engagement, mimicking the sequential structure of their project interactions.



Figure 14 Stages of use of designed artefacts (Krippendorff , 2006, p.83)

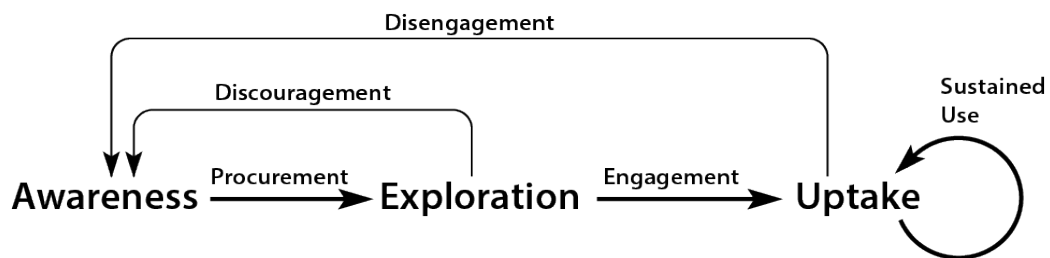


Figure 15 Stages of the incorporation of design-led innovation approaches (Author, 2018)

Unpacking this journey, public sector professionals must be *aware* of the potential applications of design-led methodologies and methods in their work in public sector contexts in order to procure their application in a project (Krippendorff, 2006, p.83). It is assumed that this procurement process can happen at varying degrees of understanding and trust in the approach. Through an *exploration* process, public sector professionals then test the application of design in their specific contexts and ‘determine what it can do for them’ (Krippendorff, 2006, p.83). As a result of these interactions with design, public sector

professionals may or not engage in further exploration or use. Sustained *uptake* of design-led innovation approaches is thus a contingent output of public sector professionals' exploration and evaluation (Krippendorff, 2006, pp.71, 79). According to Krippendorff (2006, p.124), sustained use would require public sector professionals to have acquired an understanding on when and how to use design methods (Krippendorff, 2006, p.124), as well as confidence using or at least procuring design approaches (Krippendorff, 2006, p.83). For public sector professionals to rely on design in the future, it would also have to fit in their work environment (Krippendorff, 2006, p.125), in this case, the Scottish Public Sector and their specific working contexts.

Krippendorff's visualisation helps framing this research approach to studying the incorporation of design-led innovation approaches as a process of meaning construction that takes place within the boundaries of a design project, and defines the scope of the study. But to answer research questions, this research reconstructs public sector professionals' learning and evaluation journeys from empirical data as well as the literature.

3.1.3 Conceptualising the social layers influencing evaluation

Ontological considerations (p.98) situated public sector professionals' interactions with design practice and practitioners within the complex social systems of public sector organisations, and recognised the simultaneous and mutual causal effects between individuals, their interactions and the social structures in which they are embedded (Giddens, 1984; Sawyer, 2005; C. Brown, 2008). At the early stages of the research, Sawyer's social emergence paradigm (2005, p.211) was a useful tool for envisioning what kinds of factors may be shaping public sector professionals' evaluation processes (see Table 3). Eventually, this iterative process resulted in one of the main contributions of this research, a conceptualisation of *the public sector evaluation ecosystem* and taxonomy of the factors that play a role in shaping public sector professionals decisions on design's suitability. These are presented in Chapter 6 to answer the second research question.

Sawyer (2005, p.211) defines five layers of abstraction (see Table 2): individuals, their interactions, ephemeral emergents, stable emergents, and social structure. Acknowledging

the mutual effects between individual and social structure implies studying two simultaneous processes: emergence and downward causation. Emergence refers to the emergence of meaning at different social layers of abstraction (individual, ephemeral, stable, social), and downward causation (Wimsatt, 1994; Sawyer, 2005; Campbell, 1974) refers to the effects of higher levels of abstraction. According to Sawyer (2005, p.211), all higher levels affect all lower levels. So for instance, while social structure will have an impact on the development of ephemeral emergents, these ephemeral emergents will also affect individuals' interactions. Applied to this research, the **emergent meanings** being studied are public sector professionals' perceptions of design and its suitability in their work. Depending on whether public sector professionals' perceptions of design endure in time, these can be qualified as ephemeral or stable constructions of meaning (Sawyer, 2005, p.214).

The **interactional layer** reflects public sector professionals' interactions with design practice and practitioners. This layer includes not only meanings created by public sector professionals but also meanings created by others they interact with, such as designers or their organisations. Examples of interactional factors could include project team dynamics, the physical environment, how designers communicate design or the format of incorporating design (i.e. consultation, collaboration, training). The line between the ephemeral and stable layers is fuzzy. Meanings are not set in stone, but the more they are internalised by individuals, the more they may endure. As data gathering and analysis advanced in the conceptualisation phase, this temporal distinction in downward causation became more of a spatial distinction between contextual and organisational factors (see Table 3). As such, contextual factors were defined as the specific particularities of the projects studied, whereas organisational factors were expected to be present in other projects undertaken by the same organisation or department.

Examples of **contextual aspects** could be the type of service or product or the relationships with partnering organisations and users. Contextual traits also included practices and meanings that may be shared within specific areas of public sector work.

Examples of **organisational factors** would be internalised rules of what is appropriate in their organisational procedures and standards, or how resources and work are allocated.

Finally, **social structure** was interpreted as aspects beyond the control of the organisations studied, such as wider governmental standards or strategy, policy guidelines, or the socio-political context.

Table 2 Simplification of Social Emergence Paradigm (from Sawyer, 2005, p.211)

Social Structure
Written texts (procedures, laws, regulations), material systems and infrastructure
Stable Emergents
Group subcultures, shared social practices, collective memories
Ephemeral Emergents
Topic, context, interactional frame, participation structure, roles and status
Interaction
Discourse patterns, symbolic interaction, collaboration, negotiation
Individual
Intention, agency, memory, personality, cognitive processes

Table 3 Social processes studied (Author’s adaptation of Sawyer, 2005)

Social processes studied	
Emergent Meanings	Ephemeral (and potentially stable) emergence of public sector professionals’ constructions of design on which they judge its suitability in their work
Potential Influencing Factors	Individual: public sector professionals’ prior experiences working in the public sector and their knowledge of design
	Interactional or Situational: design communication, interactional dynamics, physical environment...
	Contextual: Types of projects, relationships with stakeholders and users...
	Organisational: Organisational or departmental culture, area of public sector...
	Structural: Governmental standards, policy guidelines, wider socio-political context...

3.1.4 Methodological implications

This section describes how the theoretical understanding of meaning construction has impacted the questions, scope and selection of methodology in this research.

Firstly, by adopting a constructivist epistemology (p. 93), this research acknowledges the researcher's impact on the questions pursued, research process and paradigm chosen, and interpretation of empirical materials (Cronbach, 1971; Robson, 1993, p.9; Kvale, 1995, p.28; Maxwell, 1996, pp.90–91; Alvesson, 1993, p.27; Alvesson & Sköldbberg, 2000, p.9; Berger, 2015; Khalil, 2004, p.2). To become aware of the processes (Yee, 2007, p.7) underlying both research and practice (Mareis, 2012, p.70), this research incorporated **reflexivity** (Charmaz, 2014, p. 188): the researcher's scrutiny of her experience, decisions, views, and assumptions. This scrutiny had the purposes of generating knowledge (Berger, 2015; Alvesson & Sköldbberg, 2000, p.9) and increasing the rigour and transparency of the research (Maxwell, 1996; Berger, 2015; Alvesson, 1993; Charmaz, 2014).

Secondly, conceiving meaning construction as a dynamic and socially situated process (Leeds-Hurwitz, 2006, p.232; Charmaz, 2014, p.184) leads to the study of interactions in their natural setting. Developing an understanding of 'how people create meaning for themselves and for others' (Leeds-Hurwitz, 2006, p.229) requires: (1) the study of interactions (Sawyer, 2005, p.216) through **empirical** means (Bryman, 2004, p.539), that is through the researcher's experience and interaction with the context; and (2) a especial attention to the use of language (Sawyer, 2005, p.216; Charmaz, 2006, pp.3, 184; Krippendorff, 2006, pp.9, 147). Additionally, individuals' processes of meaning construction cannot be isolated from the setting or context in which they emerge as they are shaped by it (Sawyer, 2005, p.191). On this basis, this research takes a **naturalistic** approach (Robson, 1993, p.61; Lincoln & Guba, 1985, pp.39–40), which studies phenomena in their natural setting and without compromising the complexity of the context (Sawyer, 2005, p.216); in this case, real design projects in the public sector, and attending to the wider organisational context. The research question also reflects the relevance of the setting by focusing on how public sector professionals evaluate design approaches and methods *in their work*.

Finally, in the absence of a theory or hypothesis to test, the research had an inductive character (Charmaz, 2014, p.188; Bryman, 2004, p.540; Creswell, 2007, pp.19, 21). The researcher's understanding of research has been strongly influenced by the writings of Yvonna S. Lincoln and colleagues (Lincoln, 1995; Lincoln & Guba, 1985; Denzin & Lincoln, 2011; Guba & Lincoln, 1994); Kathy Charmaz (2011; Gibbs, 2013); and Donald Schön (1991; Argyris & Schön, 1996). These authors see the research process as an 'emergent construction' (Yardley, 2008; Denzin & Lincoln, 2011), a continuous and dynamic dialogue between the researcher and the evolving research situation. Following this **emergent or flexible research design** (Robson, 1993, p.61) allows the incorporation of 'unanticipated phenomena' (Maxwell, 1996, p.19; Charmaz, 2003, p.10), as both research design and questions are responsive and refined through interaction with the research situation (Robson, 1993, p.61; Lincoln & Guba, 1985, pp.39–40).

In summary, the understanding of meaning construction as a dynamic and socially situated process demands a **naturalistic** methodological approach that allows for the **empirical** study of public sector professionals' interactions with design practice and practitioners, and their evaluation of design-led innovation approaches in real public sector projects. Attending to its **interpretive** epistemology and given the researcher's relationship with design and the inclusion of the practice, this research incorporates **reflexivity** to scrutinise the researcher's experiences, decision, beliefs, and values in regards to both research and practice. Finally, the **inductive** character of the research requires a **flexible** and responsive research design.

3.2 Selection of methodology

As described in the previous section, the theoretical underpinnings of the research have methodological implications, which serve to rule out some methodological approaches and impose limitations on the study, narrowing down the selection of methodologies. Firstly, its focus on meaning construction automatically discards quantitative approaches (Bryman, 2004, pp.78–79; Creswell, 2013), which pursue close-ended questions to create knowledge from numbers, and distance themselves from the empirical context. The study of meaning construction requires a qualitative approach (Creswell, 2013, p.3) that pursues open-ended questions and seeks knowledge in words and observation. Secondly, its inductive and exploratory character (p.26) prevents the use of field experiments (Farquhar, 2012, p.9), for these are set to understand the relationships between pre-defined variables. Similarly, a manipulated experimental setting (Bryman, 2004, pp.38–39), such as inviting public sector professionals to participate in design projects outside their actual work environment, may alter their processes of meaning construction by freeing them from the organisational rules that otherwise would frame their evaluation of design. Other qualitative approaches that study phenomena in its natural context are phenomenology and narratives studies (Creswell, 2007, p.17, 78), which focus on experiences. While public sector professionals' experiences of learning, using and evaluating design strategies and methods are relevant in this research, the focus is not on their experiences but on the social processes and contexts shaping their views and decisions on design's suitability.

Therefore, the selection of methodology focused on constructivist and naturalistic approaches as these (1) were compatible with a constructivist epistemology; (2) allow the empirical study of public sector professionals' interactions with design practice and practitioners within the boundaries of their design-led projects; and (3) allowed a flexible research design that could respond to the research evolving understanding of the processes and contexts studied. Three leading approaches were considered: Constructivist Grounded Theory (Kincheloe, 2001; Fincher et al., 2011; O'Regan, 2015; Yardley, 2008; Rogers, 2012),

Action Research (Schön, 1991; Brydon-Miller et al., 2003; Swann, 2002), and Naturalistic or Constructivist Case Study Research (Lincoln & Guba, 1985; Lauckner et al., 2012).

3.2.1 Why case study

Case study methodology is a qualitative inquiry that studies interactions in their natural setting (Baxter & Jack, 2008; Robson, 1993, p.146) and within the boundaries of a social context (Stake, 1995, p.2). A constructivist or naturalistic approach to case study methodology (Lincoln & Guba, 1985; Lauckner et al., 2012) is more appropriate when the study cannot be rigidly designed beforehand, as it emerges in response to the inductive and iterative analysis of empirical data. This flexible approach allows

The determining factor for selecting the case study approach over other constructivist and naturalistic approaches was its suitability in cases where the phenomenon and its context cannot be separated (Merriam, 1998, p.29; Yin, 1994, p.13). The very definition of a *case* alludes to its contained nature, being an integrated and bounded system (Stake, 1995, p.2). Public sector professionals' interactions, conceptualisations and evaluations of design are intrinsically bounded to and conditioned by the nature of their specific projects, contexts and organisations, and their interactions with design practice and practitioners. The *main unit of analysis* (Baxter & Jack, 2008, p.550) represents the elements across which the research wants to compare; in this case, the design projects, not individuals. In this manner, by comparing across projects, this research seeks to examine convergences and divergences in their contexts to understand what shapes participants' views and decisions beyond individual factors (Stake, 1978, p.6) . This approach sets aside scientific generalisability to focus on understanding the particular characteristics of each case, identifying the interaction of significant factors (Merriam, 1998, p.43) and allowing 'interpretation in context' (Cronbach, 1975, p.123).

Secondly, the nature of the questions pursued and inductive character of the research also endorsed the selection of the constructivist case study approach. Case studies are better suited to answer 'how' and 'why' questions and study processes in action (Merriam, 1998, p.32; Yin, 1994, p.9; Laws & McLeod, 2004, p.7). This research seeks to study processes of

meaning construction and *how public sector professionals' views and decisions on design's suitability in their work* come into being. The case study is also the most suitable approach for expansionists pursuits (Stake, 1978, p.7), allowing to inductively develop conceptual categories and theory (Langrish, 1993, p.360) through instrumental forms of case studies, also called interpretive or analytical case studies (Merriam, 1998, p.38; Creswell, 2007, pp.62-62,74; Shaw, 1978; Laws & McLeod, 2004, p.8). This enables the research to develop a taxonomy (Langrish, 1993, p.360) in the case of this research describing the interacting factors influencing public sector professionals' evaluation of design-led innovation approaches in their work.

Additionally, a case study methodology enabled the flexible research design which was required due to the inductive and emergent character of the research (Robson, 2011, p.131; Lincoln, 1995). The flexibility of case studies is particularly useful in environments in which the researcher has limited control of events (Farquhar, 2012, p.6), as is the case in projects taking place in complex organisational settings such as the public sector. The case study approach also endorses the inclusion of practice as a means of knowledge generation (Farquhar, 2012, p.8), which was important in the scoping and conceptualisation stages of the research as practice-based approaches foster the development of 'theory and practice in close relationship' (Breslin & Buchanan, 2008, p.40). Finally, the need to gather data from multiple layers of abstraction (i.e. individuals, interactions, organisations) in this research supported the selection of the case study approach due to its ability to incorporate a wide range of data sources (Merriam, 1998, p.8; Baxter & Jack, 2008; Robson, 1993, p.146).

3.2.2 Other methodologies considered

This research primarily considered two other constructivist methodological approaches: action research (Schön, 1991; Brydon-Miller et al., 2003; Swann, 2002) and constructivist grounded theory (Kincheloe, 2001; Fincher et al., 2011; O'Regan, 2015; Yardley, 2008; Rogers, 2012). Although neither of these approaches was deemed appropriate for this research, it did incorporate aspects of constructivist grounded theory.

Action research (Schön, 1991; Brydon-Miller et al., 2003; Swann, 2002) is a methodological approach that seeks to develop practical knowledge or improve a situation through cycles of planning, acting, observing, and reflecting on the impact of the changes made on the social context studied. This approach was considered in the early stages of the research, where its initial practice-based approach shared with action research its pragmatist intention of generating knowledge and theory through and in the service of practice (Brydon-Miller et al., 2003, pp.11, 16). However, as research questions and scope took shape, the intention of the research shifted away from action research purposes of *changing* the existing situation (Susman & Evered, 1978), as the research sought to *understand* the existing situation, how public sector professionals currently evaluate design-led innovation approaches in their work. Constructivist case study research and constructivist grounded theory were better suited to studying meaning construction (Merriam, 1998, p.32; Yin, 1994, p.9; Laws & McLeod, 2004, p.7). Action research is best suited to answer ‘what if?’ questions (Schön, 1991, p.145) using an experimental and iterative approach through the development, evaluation and improvement of practical interventions. Although this research incorporates design practice, contrary to action research approaches, this research does not focus on studying or iteratively improving practical interventions or their impact. Instead, the practice had an instrumental character in enabling the researcher to study public sector professionals’ interactions with design and understand meaning construction.

The other methodology considered was **constructivist grounded theory**. This research shares many characteristics with grounded theory as formulated by Charmaz (2006, p.3,184) – namely, being naturalistic and empirical, with a focus on language and meaning construction, and being interpretive and reflexive, inductive and flexible. However, the researcher chose a case study approach due to its capacity to study meaning construction within the bounded conditions of each project. By contrast, the main unit of analysis in grounded theory is a process, action or interaction (Creswell, 2007, p.78). Although it is worth noting that there are other approaches to grounded theory, such as Clarke’s (2005), which suggest that the unit of analysis should be the social situation (Creswell, 2007, p.63).

Although the overarching methodology selected was the constructivist case study approach, this research draws strongly on Charmaz's approach to constructivist grounded theory (2006). As this research, constructivist grounded theory (2006, p.184) has a fluid and open-ended character and an 'emphasis on language, meaning, and action', and scrutinises the 'antecedents' of participants' and researchers' constructions (Charmaz, 2006, p.184); and Charmaz offers very detailed descriptions of how to analyse meaning construction and inductively develop categories based on empirical and experiential data, as well as how to handle reflexive materials and pursue hunches while still maintaining a systematic and rigorous approach to data analysis (Charmaz, 2006, p. 3).

The combination of case study with grounded theory is not rare. There are many examples of successful studies of this type, especially in the areas of information systems and organisational learning (Halaweh, 2012; Halaweh et al., 2008; Laws & McLeod, 2004; Liusvaara, 2009; Diaz Andrade, 2009). According to Laws and McLeod (2004, p.17), combining these approaches in organisational studies allows for great 'flexibility within the research site', producing 'a rich harvest of fine-grained research data'. Charmaz (2006, p.9) sees constructivist grounded theory and its methods 'not as prescriptions or packages', but as 'a set of principles and practices ... that can complement other approaches to qualitative data analysis'. This research adapted constructivist grounded theory's analytical strategies and procedures to the needs and purposes of the case study research design. For instance, the nature of data gathering has not always allowed for simultaneous data collection and analysis as it is characteristic in grounded theory (Glaser & Strauss, 2009; Suddaby, 2006, p.634; Charmaz & Bryant, 2011, p.292). Similarly, constant comparison (Glaser & Strauss, 2009; Suddaby, 2006, p.634; Charmaz & Bryant, 2011, p.292), the continuous inductive process of comparing data, categories and concepts (Charmaz, 2006, p.187), was adapted to the research emphasis on contextual factors and need to compare across projects and not individuals' responses. These and other decisions concerning data analysis will be explained in detail in the analysis section (3.6).

3.3 Research design

3.3.1 Outline of research phases and case studies

Attending to its constructivist design, the three case studies comprising the research can be considered instrumental (Stake, 1995, p.3), as their purpose was not to understand each case but were instrumental to conceptualising the processes and factors shaping public sector professionals' perceptions of design's suitability in their work. Attending to this purpose, each case can be associated with one of three research phases (Figure 16): orientation, conceptualisation and refinement of how this research understands public sector professionals' evaluation of design-led innovation approaches. Attending to their role in conceptualising evaluation, the cases will be referred to as the scoping case study, the immersive and main case study. The scoping case study can also be considered an exploratory case study (Yin, 2003), as the focus of the study was not yet defined. It is worth noting that these phases were not as sharply defined in the actual research process, as the cases partially overlapped in time and to some extent informed each other.

Firstly, the **scoping study** (Maxwell, 1996, p.44) explored the potential role of design in the post-implementation stages of organisational change in the context of a public sector organisation in Scotland. In this project, the researcher worked with two other designers as external consultants, delivering the interventions previously defined and agreed with the project gatekeepers.

Secondly, the **immersive case study** is characterised as immersive because the researcher worked closely with a team of public sector professionals advising them on how to apply a user-centred design approach to redesigning statistical outputs.

Thirdly, the **main case study** studied a five-month project-based design training for Scottish public sector organisations. This case made it possible to study how public sector professionals' perceptions of design suitability evolved as their knowledge of design strategies and methods advanced.

It is important to note that due to the different nature of public sector professionals' interactions with design practice and practitioners in the three cases, this research distinguishes between the *case*, the bounded phenomena studied (Baxter & Jack, 2008, p.545,550; Merriam, 1998; Stake, 1995, p.2), and the main *unit of analysis*, the elements across which the research wants to compare (Baxter & Jack, 2008, p.550). This research defines the *case* in relation to the interactions studied, bounded by time and space (Baxter & Jack, 2008, p.546-547). Each of the cases documented a different approach to the incorporation of design. Firstly, in the scoping study, the designers, including the researcher, acted as consultants or external agents, as they delivered the design activities negotiated and agreed upon with gatekeepers. Secondly, the immersive case study took a collaborative approach, where the researcher worked closely with public sector professionals advising them on how a design approach could be applied to their specific context and proposing, negotiating and delivering activities with them. The main case study had a training format, where designers acted as mentors and public sector professionals applied to their projects the design strategies and methods learnt. Although there was comparison across cases during triangulation (Appendix I), the main unit of analysis across which this research seeks to compare are the specific contexts of the design-led projects. As described in p. 104, the evaluation processes studied are bounded to public sector professionals' interactions with design, on the one hand, and the specific nature of their contexts and projects on the other. This research defines the design project as the main unit of analysis, as it bounds together for analysis the elements expected to have an impact on evaluation, individuals and their teams, interactions, context of application and organisation.

Attending to these definitions of the case and the main unit of analysis, the scoping and immersive cases are single case studies (Baxter & Jack, 2008, p.550), as these cases contain one unit of analysis or project, and public sector professionals' interactions with design practice and practitioners are bounded to the project. In the main case study, however, public sector professionals' interactions with design practice and practitioners were bounded

in space and time through the training programme. Thus this case had four embedded units (Baxter & Jack, 2008, p.550), the four participating projects from different organisations.

The different characteristics of the cases determined the researcher's role and membership, which are further discussed in sections 3.3.3 and 3.4. It is worth noting that the design practice developed in the scoping and immersive cases was not the focus of the study. Instead, it had an instrumental role in enabling both empirical and experiential layers of enquiry, allowing the study of both public sector professionals' interactions with design practice as well as the researcher's experience of practising and communicating design within public sector contexts.

Table 4 outlines and provides detail on this research approach and focus at different research phases, and how these overlap with different analytical stages.

Firstly, given the exploratory and inductive character of the research (Robson, 1993, p.61; Lincoln & Guba, 1985, pp.39–40), the **Orientation Phase** aimed to develop research questions and trajectories (Maxwell, 1996, pp.44–45), and gain situated experiential knowledge (Maxwell, 1996, pp.27–29) of the empirical context and intuition to guide the study (Lincoln & Guba, 1985; Mareis, 2012; Charmaz, 2003). Aiming to harness the researcher's design sensibility and ensure the practical relevance of the research (Fallman, 2008, p.17; Glanville & van Schaik, 2003; Robson, 1993, pp.37–38, 447; Creswell, 2007, p.97), a practice-based approach was chosen. It was anticipated that by participating as an innovation designer in real projects within the Scottish public sector, it would be possible to identify issues that emerge in the actual incorporation of design approaches and methods in public sector contexts. In the absence of a theory or hypothesis to test, at this early stage, both research and practice activities were driven by the empirical context.

ORIENTATION PHASE - Scoping Case Study

Definition of research questions, scope, and trajectories



ORGANISATIONAL
CHANGE

DATA GATHERING

- Single study: practice-based and ethnographic methods

ANALYSIS (Stage 1 - Understanding Empirical Context)

- Simultaneous data gathering and analysis
- Direct Interpretation of empirical and experiential materials

OUTPUTS

- Development of Research Questions and Objectives
- Interim Findings

CONCEPTUALISATION PHASE - Immersive Case Study

Conceptualisation of evaluation process and influencing factors



REDESIGNING
STATISTICAL OUTPUTS

DATA GATHERING

- Single study: practice-based and ethnographic methods

ANALYSIS (Stage 1 - Understanding Empirical Context)

- Simultaneous data gathering and analysis
- Direct Interpretation of empirical and experiential materials

OUTPUTS

- Development of Theoretical Framework
- Interim Findings

REFINEMENT PHASE - Main Case Study

Refinement of evaluation process and influencing factors



DESIGN
TRAINING

DATA GATHERING

- Four embedded units (projects), ethnographic methods

ANALYSIS (Stage 2 - Identifying Patterns)

- Inductive Coding: Comparison Across Main Unit of Analysis (Four Projects)

OUTPUTS

- Interim Findings from Main Case Study
- Refinement Theoretical Framework (Factors influencing Uptake)

ANALYSIS (Stage 3 - Articulating Findings and Contributions)

- Triangulation interim findings from three cases
- Dialogical Analysis: Comparison Across Secondary Unit of Analysis (Designers-Public Sector Professionals)

OUTPUTS

- Research Findings and Contributions
- Videos Introducing Design to Public Sector Professionals

Figure 16 Outline of Research Phases, Case Studies and Stages of Analysis

Table 4 Research design summary

	ORIENTATION PHASE	CONCEPTUALISATION PHASE	REFINEMENT PHASE
PURPOSE	Defining empirical context & forming situated research questions Understanding concepts and theories held by participants and researcher in relation to both design innovation & the public sector context	Conceptualising what factors may shape PS professionals' decisions on the suitability of design methods and strategies.	Refining what factors may influence PS professionals' evaluation and uptake of design. Understanding the process of becoming aware, comprehending, using and evaluating design approaches in their work.
QUESTIONS			
PRACTICAL	How can design support public sector professionals in this specific situation?		How can we support PS professionals' understanding & evaluation of DLI approaches?
EMPIRICAL	What are PS professionals' expectations of design? How do they perceive design's role and value? How do they experience using design?	What shapes PS professionals' decisions on design's suitability? How do public sector professionals evaluate design?	How are DLI approaches communicated to PS professionals?
REFLEXIVE	What are the assumptions and values driving the researcher's expectations, conceptions and practice of design? And what are their impact on the research?		
APPROACH			
INQUIRY	Exploratory practice-based & ethnographic methods	Ethnographic methods	
ANALYSIS	Stage 1: Direct interpretation	Stage 2: Comparison Across Units: Inductive Coding	Stage 3: Articulation of findings & contributions Triangulation of interim findings Practice-based Dialogical Analysis
OUTPUTS			
PRACTICAL	Workshops with two teams navigating the organisational change	Profiling of intended users Library of inspirational resources	Short illustrated films introducing design-led innovation approaches to public sector professionals
EMPIRICAL	Research trajectories and questions Interim findings	Firstst iteration of theoretical framework Interim findings	Refined theoretical framework Conceptualisation of learning and evaluation process Research findings and propositions
REFLEXIVE	Identification of socio-political assumptions and values driving the researcher's design practice Examination of the researchers' understanding and conceptualisations of design strategies and methods		

This orientation phase opened up a variety of research trajectories, such as the role of the designer, the potential application of design in organisational change, or the need for improvisation in design practice. Most relevant for the course of the research, early insights foregrounded the relevance of public sector professionals' preconceptions of design, and when and why public sector professionals sought design support. These observations led to broad questions such as: *How do public sector professionals perceive design's potential role and contribution? Why do they hold such perceptions? How do these perceptions influence their procurement of design and uptake of its strategies? What is shaping their views and decisions?* These early questions eventually developed into the research question examining *how public sector professionals' evaluate the suitability of design approaches and methods in their work, and what shapes those decisions.* A more detailed description on the evolution of research questions can be found in Appendix C.

Secondly, the **Conceptualisation Phase** combined empirical insights with the relevant literature (p.93) to conceptualise how public sector professionals construct meaning as they become aware and explore design methods and strategies, and developed an early version of the theoretical framework. Participating in public sector professionals' negotiations, decision-making and evaluation processes regarding the application of design strategies and methods in their work allowed the researcher to explore public sector professionals' reasoning behind their decisions and gain an understanding of how their worldviews and social contexts (Maxwell, 1996, p.45) influenced uptake of design innovation practices.

In terms of analysis, both the orientation and the conceptualising phases aimed to inductively develop both the research and data collection questions (Maxwell, 1996, pp.44–45) and the theoretical framework. Due to the generative and immersive purposes of these phases, the researcher wanted to capitalise on her sensibility as a designer and on the experiential dimension of these practice-based studies. To do so, analysis of the scoping and immersive case studies incorporated empirical and reflexive materials, and simultaneously collected and analysed data (Merriam, 1998, p.153) through direct interpretation (Stake,

1995, p.74), which capitalises on ‘ordinary ways of making sense’ and the ‘intuitive processing to the search of meaning’ (Stake, 1995, pp.72, 74).

Finally, through the **Refinement Phase** the theoretical framework crystallised into a taxonomy of factors influencing uptake, and conceptualisations of public sector professionals’ learning and evaluation processes and the ecosystem shaping decisions. In terms of analysis, the refinement phase included two analytical stages, firstly, the analysis of the main case study, and secondly, the articulation of research findings and contributions. The analysis of the main case study aimed to identify patterns by comparing across projects (main unit of analysis) and comparing designers and public sector professionals’ perceptions of the role and contribution of design (secondary unit of analysis). To do so, the analysis adopted an inductive coding strategy (Maxwell, p. 77-78).

After triangulating (Maxwell, 1996, p.75-76,93-94; Bryman, 2004, p.275) or cross-checking the consistency of results across the three cases, analysis sought to articulate research findings and contributions. Firstly, primarily through ‘clustering’ (Charmaz, 2006, p.86-87) - visually mapping categories to understand the relationships between them and construct theory – the theoretical framework was refined resulting in conceptualisations of *the learning and evaluation process* and *the public sector ecosystem*, which constitute one of the main contributions of this research. Secondly, a practice-based dialogical analysis was undertaken (Berniker & McNabb, 2006, p.645). This dialogical analysis (Berniker & McNabb, 2006, p.645) – which established a dialogue posing diverging views between designers and public sector professionals building on empirical insights and the literature – sought to articulate gaps and opportunities for enhancing design uptake by exploring the interplay between how design is communicated and how public sector professionals interpret design rhetoric and artefacts. This analysis took the shape of a design exploration (Fallman, 2008, pp.7–8), where the practice developed – short illustrated films introducing design to public sector professionals and the procurement ladder – are instrumental in exploring possible or desirable alternatives, in this case, an alternative design discourse

(Appendix I). These dialogical explorations served to identify gaps in design communication and strategies to enhance its credibility and comprehensibility in public sector contexts.

3.3.2 Selection of case studies

In response to the general questions about sampling or selection of cases (Maxwell, 1996, p.69; Robson, 1993, pp.154–155) – where, when, who, and what – this research aims to study how public sector professionals (i.e. **who**) construct their views and decisions on design's suitability (i.e. **what**) through real design projects (i.e. **when**) in the Scottish Public Sector (i.e. **where**). Therefore, the primary criteria for selecting the cases was that the study enabled access to public sector professionals interested in exploring and applying a design-led innovation approach to their projects within the Scottish public sector.

The selection of design-led projects in the public sector required navigating availability and accessibility constraints. The process involved snowball sampling strategies (Bryman, 2004, p.334; Robson, 1993, p.154), gaining access to cases through social connections and research participants, and theoretical sampling (Charmaz, 2006, p.96), purposefully selecting projects relevant to elaborating and refining theoretical concepts.

It is important to note that in the practice-based studies (scoping and immersive case studies), the researcher recruited the projects; whereas in the training-based or main case study, the organisation providing the training had its own selection process in which the researcher was not involved.

Scoping case study: organisational change

This project was part of a broader initiative and long-term relationship between the Institute of Design Innovation at Glasgow School of Art and the creative department in a public sector organisation. The researcher joined the design team while the project was being scoped. The gatekeeper recruited teams or departments participating in the project. This case allowed the researcher to gain first-hand experience of the incorporation of design innovation practices into real public sector scenarios, helping to focus the study and develop research questions.

Immersive case study: redesigning statistical outputs

Access to this case study was made possible through a participant from the scoping study who introduced the researcher to colleagues seeking design support for a project, followed by a scoping meeting with two members of the team. This case was selected as it offered the researcher the opportunity to immerse herself in a design-led innovation project in the Scottish public sector, acting as an integral member of the team rather than externally as in the first case study. A particularly interesting observation was that public sector professionals were questioning whether their current ways of doing were fit for purpose, and that they had planned to engage with users as part of their process.

This project provided the researcher with the opportunity to work in close collaboration with public sector professionals on the re-design of a public-facing service/product. This immersion would enable the researcher to explore how the incorporation of the approach would be negotiated from scratch, while also witnessing and experiencing both the contribution and complexities of utilising design methods within a public sector context.

Main case study: design training

The researcher gained access to the training through existing connections at the Institute of Design Innovation and a negotiation process to establish the scope of the study and the research activities undertaken. The organisation providing the training was interested in gaining insight into the impact of the programme. As this was beyond the scope of the doctoral research, it implied additional data collection and analysis. This case was selected for a variety of reasons.

Firstly, this case allowed the simultaneous study of four different design projects in the Scottish public sector, which could not have been achieved through a practice-based approach. This offered a wider range of perspectives, as it included public sector professionals from four different organisations working in different areas of the public sector and designers from different organisations. Additionally, this case study offered insight into yet another way of incorporating design into public sector organisations.

Secondly, this case detached public sector professionals' processes of meaning construction from the researchers' conceptualisation and communication of design. The training programme provided a unique opportunity to study how public sector professionals operating in different public sector contexts conceptualised and evaluated design strategies and methods. The organisation delivering the training programme is one of the biggest players in advocating for the incorporation of design innovation in the UK public sector, and has had a significant impact on how design-led innovation practices are framed and articulated.

3.3.3 People involved and researcher's role

The research design aimed to gather different perspectives on design's suitability from a diverse range of individuals in different settings (Maxwell, 1996, p.75; Creswell, 2007, p.75). Through the three case studies the researcher had the opportunity to gain insight into six different projects, which varied significantly in their purposes and contexts, and to different degrees of engagement interacted with over sixty public sector professionals and ten designers.

It is worth noting that the researcher recruited the cases, but had no actual control over which public sector professionals were involved in the projects. Additionally, while the researcher recruited the projects in the practice-based studies, the training programme had its own selection process in which the researcher was not involved. Therefore, at the point of recruitment and apart from the gatekeepers, the researcher had no prior knowledge regarding research participants' awareness, interest and understanding of design. It was expected that at least the project managers procuring the design would have some awareness or understanding of the approach, whereas the rest of team members and research participants could be considered a randomised sample (Bryman, 2004, p.543). With very few exceptions, the public sector professionals involved in this research generally had very limited awareness of the potential applications of design innovation practices in the public sector, or none at all.

This section only provides an overview of research participants. A complete list of research participants and their roles can be found in Appendix D. To enhance understanding of research findings, Chapter 5 offers more detailed information on key informants (Bryman, 2004, p.300,540): participants who offered perceptive information about the social setting, events, and other people involved.

Scoping case study: organisational change

In this practice-based study, the role of the researcher together with the other designers was to design and facilitate a series of mapping activities involving different teams within the organisation. The consultation model adopted in the scoping case study implied that the researcher had brief interactions with different groups of public sector professionals, coming in as an external agent to deliver a set of activities agreed with the gatekeeper. Through this project the researcher facilitated three workshop sessions, interacting – to different degrees – with a total of 25 public sector professionals.

The researcher began working on the project with Caroline, a designer and research fellow at InDI with a background in illustration and service design. After the second design workshop, due to other work commitments, Caroline was replaced by Jack, a product and service designer from InDI.

Helen, who was in charge of supporting staff through the changes, became the main gatekeeper and key informant (Bryman, 2004, p.300,540) in the study. Due to her experience and interest in the application of design in the public sector, her insights were helpful to guiding the research and shaping research questions. During the development of the activities for the workshops, she worked with the designers. In these meetings, designers raised questions to understand the context and offered alternative design activities and interventions. Once the interventions had been agreed and particularly during the workshops, the designers took a more directive role proposing and directing either planned or improvised activities. The researcher and the gatekeeper continued to meet regularly, in

informal settings, to share reflections about the project and more broadly about the role of design in the public sector.

Immersive study: redesigning statistical outputs

The immersive case study had collaborative nature, as the researcher worked closely with a team of four public sector professionals, which will be referred to as the core team. The members of the team worked in different areas of the statistics department. Anthony was the manager and the only team member directly involved in the development of the publication being redesigned. Gary had promoted the use of this project as a broader exploration of the modernisation of the government's statistical outputs. Susanne and Daniel had more of an advising role rather than being actively involved in delivering the project. Anthony was considered a key informant (Bryman, 2004, p.300,540) because his perceptions of design's suitability and subsequent decisions determined the degree of uptake of design. The researcher delivered a workshop with the lead-analysts group, which had 21 participants including the core team.

The researcher's role involved advising the team on how to implement a user-centred design process in their project, as well as designing and facilitating workshops involving users and stakeholders, and synthesising and communicating results. Also, due to the team's lack of previous experiences using design, it was necessary to pitch the approach and introduce the rationale for using specific tools or ways of working.

In contrast with the scoping study, in this project the researcher engaged as a member of the core team for over five months. This continued collaboration provided a completely different sense of membership, with the researcher considering herself a member and fully invested in the project. The degree of guidance provided by the researcher was variable and negotiated on the go, but the interventions leaned towards an advisory, rather non-directive approach (Robson, 1993, p.457).

Main case study: design training programme

Two designers, Marlene and Nathan, led the training sessions. Marlene was co-designer and project manager of the training programme and had been working within the public sector for twenty years. Nathan was an independent design consultant who had an associate role in the organisation providing the training. Their role was to explain design innovation approaches, strategies and methods, providing examples and activities, and supporting participating public sector professionals in thinking about their projects from a design perspective. Four other designers also came into the training as guest speakers.

The Edinburgh cohort included teams from four public sector organisations and was facilitated and attended by a number of designers. The public sector teams consistently had between two and four members, although the people making up the teams and attending the sessions varied. Additionally, the researcher interviewed the senior managers of two of the teams who did not themselves attend the training.

Along with the researcher, there were two observers from the UK wide consultancy agency sponsoring the training. Jack and Mary, both designers, attended the training to assess the potential of replicating the model in the future.

3.4 Selection of methods and data gathering

Building on the theoretical framework (Table 5) discussed in Section 3.1, in order to understand how public sector professionals evaluate design-led innovation approaches in their work this research needed to gather data on: public sector professionals' emerging perceptions of design and its suitability for their projects; their interactions with design practice and practitioners; the particularities of their projects and contexts, and the organisational setting.

Table 5 Social processes studied (author building on empirical evidence and Sawyer’s (2006) model of social emergence

Social processes studied	
Emergent Meanings	Ephemeral (and potentially stable) emergence of public sector professionals’ constructions of design on which they judge its suitability in their work
Potential Influencing Factors	Individual: public sector professionals’ prior experiences working in the public sector and knowledge of design
	Interactional or Situational: design communication, interactional dynamics, physical environment...
	Contextual: Types of projects, relationships with stakeholders and users...
	Organisational: Organisational or departmental culture, area of public sector...
	Structural: Governmental standards, policy guidelines, wider socio-political context...

At the **contextual, organisational and structural levels**, the researcher aimed to gather as much information as possible about public sector professionals’ projects and work environments. It should be noted that with regard to the situational factors, this research disregarded the effect of the physical environment on interactions as the events observed took place in similar settings, either in a meeting or workshop format.

At the **individual level**, this research aimed to gather public sector professionals’ reported views, experiences and actions regarding their understanding, evaluation and application of design in their projects. A longitudinal study would be necessary to establish whether public sector professionals’ emergent constructions of design and its suitability endured over time (Sawyer, 2005, p.214).

At the **interactional level**, the researcher needed to gather data on public sector professionals’ interactions with design practice and practitioners. Given the relevance of communication in shaping meaning (Sawyer, 2005, p.216; Charmaz, 2006, pp.3, 184; Krippendorff, 2006, pp.9, 147), as established in the discussion of the theoretical underpinnings of this research (3.1), data collection on interactional factors had an emphasis not only on how public sector professionals create meaning, but also on how

designers constructed meaning for public sector professionals through language and artefacts.

In addition to these, it was relevant to collect reflexive data (Charmaz, 2014, p. 188) – the researcher’s scrutiny of her experience, decisions, positions and assumptions – in regards to both research and practice (Mareis, 2012, p.70) in order to become aware of the underlying processes (Yee, 2007, p.7). In addition to epistemological concerns already discussed (p.93,101), reflexivity was of particular relevance due to: (1) the researchers’ relationship with the field of design under study; (2) the incorporation of the researchers’ design practice; and (3) the political nature of the public sector context. Early empirical insights confronted the researcher with expectations of design in conflict with her understanding of her practice. To make explicit and counter-balance the researcher’s bias regarding the application of design-led innovation practices in the public sector (Maxwell, 1996; Berger, 2015; Alvesson, 1993; Charmaz, 2014), the use of reflexivity focused on scrutinising the researcher’s understanding of design-led innovation, and her design practice and culture. The researcher also examined her own experiences of participating in design-led projects in the public sector.

Congruent with case study methodology (Baxter & Jack, 2008; Creswell, 2007; Merriam, 1998, p.28), the research included a variety of sources and methods, which reduces method-specific biases and limitations and supports data triangulation (Maxwell, 1996, p.75). Combining observation and participants’ self-reports is a way of triangulating data, as discrepancies often emerge between what people report they will do or have done and what they actually do (Robson, 2011, p.191). Participants’ reports also provide a way of triangulating the researcher’s interpretations of field observations. Table 6 provides an overview of the main sources and methods used in relation to the kinds of data or layers of social construction described above. Table 7 provides an overview the data gathered and methods used within each of the cases. The following sections expand on these tables discussing the rationale for selecting methods and data gathering. However, a more detailed

account of the research activities undertaken in each case study as well as the data collection questions can be found in Appendix E.

Table 6 Data gathered and methods in relation to the social layers identified in the theoretical framework

	PUBLIC SECTOR PERSPECTIVE	METHODS	DESIGN PERSPECTIVE	METHODS
INDIVIDUAL	Public sector professionals' perspectives and experiences of working with design	Semi-structured Interviews & Conversations Self-completion Questionnaires With Open Questions	The researcher's and other designers' experiences of using and communicating design in the public sector	Semi-structured Interviews & Conversations Reflexive Inquiry
INTERACTIONAL	Public sector professionals' interactions with design discourse and practice	Participant Observation	Designers' articulations of design	Reflexive Inquiry Participant Observation
STABLE EMERGENTS	The public sector views of design	Public sector professionals and designers interactions through discourse and artefacts Literature, News & Websites	Companies' And Organisations' Articulations Of Design	Participant Observation Literature, News & Websites
SOCIAL STRUCTURE	The public sector organisational culture	Extant Texts Semi-structured Interviews & Conversations Participant Observation	Design Culture	Extant Texts

Table 7 Detail on the data gathered through different methods within each case study.

	ORIENTATION PHASE	CONCEPTUALISATION PHASE	REFINEMENT PHASE
SELF-COMPLETION QUESTIONNAIRES WITH OPEN QUESTIONS	After interactions with design practice: Q1: workshops with first team Q2: workshop with second team	After interactions with design practice: Q1: scoping session with the core team Q2: workshop with stakeholders	
SEMI-STRUCTURED INTERVIEWS	1 Interview: Gatekeeper	1 Interview: Project Leader	4 Interview: Teams (6 participants) 2 Interviews: Senior management 3 Interviews: Designers
PARTICIPANT OBSERVATION	Practice-based Participant as Observant	Practice-based Participant as Observant	Ethnography-based Observant as Participant
EXTANT TEXTS	Project Documents: Reports on Staff Views of the Restructuration, Documentation on Organisational Change	Project Documents: Project Initiation Document, Web-analytics, Official User-profiles	Documentation on Projects: Participants' applications to the training, blogs, project descriptions & presentations Training Materials: Presentation Slides and Design Tools, Marketing Brochure, Evaluation of Impact

3.4.1 Participant observation

Observational data was indispensable to studying public sector professionals' interactions with design practice and practitioners. The method selected was participatory observation (Bryman, 2004, pp.301–304; Atkinson & Hammersley, 1994, pp.248–249) as it allowed the researcher to get closer to research participants (Atkinson & Hammersley, 1994, p.294) by actively entering and participating in their social interactions (Robson, 2011, pp.194–195; Bryman, 2004, p.303). Being involved as a participant would allow the researcher to hold informal conversations with participants (Bryman, 2004, pp.320–321), getting to know them and their projects and organisations better, and to increase rapport (Maxwell, 1996, p.76). In hindsight, participants may have been reluctant to share and discuss in an interview some of the tensions that emerged if the researcher had not participated in the design process.

Although the researcher wanted to be as actively involved in participants' activities as possible, the characteristics and affordances of each case determined the researcher's role and degree of participation, which was significantly different between the practice-based studies (CS1 and CS2) and the training-base study (CS3).

Practice-based studies: scoping and immersive case studies

As a consultant and collaborator in the practice-based studies, the researcher sought to interact with participants in the research context as a member of the group fulfilling a specific role (Robson, 1993, pp.194–195), and thus acting as a 'participant as observer' (Atkinson & Hammersley, 1994, p.294) by being integrated in the social setting as a member of the group. In these practice-based studies, observational data was recorded through handwritten notes during workshops and meetings or audio-recorded at the end, depending on which medium was most convenient at that particular moment.

Training-based study: main case study

In this case study, the researcher acted as an 'observer as participant' (Atkinson & Hammersley, 1994, p.294), without a specific role in the setting but getting involved in the participant's training activities. In this setting, participants sat within their project teams. On

the first day of training, the researcher was asked to join a table at the back with other visiting designers and joined teams only to observe the design activities facilitators provided. As participants became more familiar with the researcher, she joined the different teams, discussing participants' projects with them and contributing to the design activities. Informal settings, such as training breaks or the networking dinner, were useful for building rapport and holding informal conversations with participants and facilitators about their views of design.

During the training programme, three types of interactions took place:

- Presentations by design facilitators, with occasional interventions by participants.
- Team activities: maximum of four participants
- Wider group discussions, mediated by the design facilitators

The structured nature of the interactions allowed the researcher to collect very rich and descriptive data of what was happening. During presentations, the researcher often collected data directly on a computer, whereas during her interactions with participants, the researcher took hand-written notes.

3.4.2 Self-completion questionnaires and interviews

Asking participants directly about their perceptions and experiences working with design and in the public sector was necessary in order to explore issues that did not emerge through participant observation. It was expected to provide the researcher with access to information that it would not have been possible to gain through observation (Maxwell, 1996, p.76), such information about as past experiences or interactions with stakeholders, users and colleagues to which the researcher had no access.

The general purpose of the interviews was to 'learn as much as possible about [participants'] concerns, perceptions, reactions, observations and thoughts' (Isabella, 1990, p.12) regarding both design's suitability and their projects and contexts. Attending to the purposes of data gathering at different stages, interviews adopted different formats:

- **Unstructured interviews** (Bryman, 2014, p.320-321) are similar to a conversation, explore a range of topics rather than specific questions, and allow the interviewee to respond freely.
- **Semi-structured interviews** (Bryman, 2014, p.321) use an interview guide or list of concrete questions, but still allow input from interviewees to explore topics relevant to them that were not included in the guide.
- Self-completion questionnaires with open-ended questions (Robson, 2011, pp.236-237,243, 247; Charmaz, 2006, p.36) functioned as email-based **structured interviews** (Robson, 2011, pp.236–237), with participants responding only to concrete questions but lacking the person-to-person interactions of an interview.

All the interviews were audio-recorded and transcribed for analysis. Self-completion questionnaires functioned as structured interviews (Robson, 2011, pp.236-237,243, 247; Charmaz, 2006, p.36), and were used in the practice-based studies in order to reach a broader scope of participants.

Practice-based studies: scoping and immersive case studies

In the practice-based studies, interviews were only undertaken with the key informants (Bryman, 2004, p.300) at the end of the projects: Helen, the gatekeeper in the scoping study, and Anthony, the project manager in the immersive case study (see section 3.3.3). As these studies comprised the orientation and conceptualisation phases of the research, an almost unstructured format was chosen (Bryman, 2004, p.320), allowing both interviewee and researcher to explore relevant areas and include unexpected concerns or observations as they arose. To give some structure to the conversation and ensure the researcher's interests were covered, a loose interview guide (see Appendix E) served as an 'aide memoire' or prompt (Bryman, 2004, p.320).

It is worth noting that Anthony's interview became more unstructured than expected. The researcher had been working closely with this interviewee for months, and this was the first face-to-face meeting after the projects' closure. The project leader was eager to share impressions with the researcher. The researcher started the recording after the interviewee

began talking, and Anthony began making questions to the researcher rather than the other way around. The researcher adjusted the interview format to these circumstances, setting aside the interview guide and opting for a more conversational format. Most of the questions made by the researcher, which can be found in Appendix E, were follow-up questions, seeking clarification or exploring emerging topics.

Although no more face-to-face interviews were undertaken, , the research used self-completion questionnaires with open ended questions (Robson, 2011, pp.236-237,243, 247; Charmaz, 2006, p.36) to reach a broader scope of participants with a sensible time investment (Robson, 1993, p.243). Although most of participants' interactions with design practice as part of these projects were limited to the design workshops delivered, their views of both design and their contexts were of relevance to guide both the research and the projects. These questionnaires functioned as email-based structured interviews (Robson, 2011, pp.236–237), aimed at gathering **qualitative** insight rather than statistical significance. Participants' responses were collected through the online software Survey Monkey, safeguarding anonymity to foster honest and critical reflections, which was explicitly encouraged by the researcher. After the workshops, gatekeepers forwarded the questionnaires to participants. The purpose of the questionnaires was to explore 'sensitising concepts' (Blumer, 1969; Charmaz, 2006, p.16), that is, participants' expectations, experiences and perceptions regarding the role and contribution of design innovation practices. Appendix E includes questionnaire questions.

Training-based study: main case study

For the training-based study, the researcher opted for semi-structured interviews (Bryman, 2004, pp.320–321; Robson, 1993, p.231), due to their flexibility which made it possible to alter the order of questions to fit the conversational context (Robson, 1993, p.231) and to identify and explore what interviewees found to be of relevance (Bryman, 2004, pp.320–321; Isabella, 1990, p.11). Interview guides were negotiated and agreed with key people from the gatekeeper organisations to ensure the questions covered everyone's interests; however,

questions were added as insights emerged. Also, at the end of each interview, the researcher asked for any observations that interviewees felt relevant to add (Isabella, 1990, p.12).

Three interview guides were developed, paying attention to the different roles played in the incorporation of design to the public sector: designers, public sector professionals participating in the training, and their senior managers.

Eight interviews were conducted, with a total of ten interviewees, and began three months after the training started so training participants had reached an understanding of design (see details in Appendix E):

- Four interviews with one or more participants corresponding with the four teams,
- The senior managers from two of the teams,
- Three designers from different organisations, one of them the leading design facilitator at the training.

It is worth noting that two of the interviews with designers were telephone-based rather than face-to-face interviews. This was due to practical reasons rather than choice. Telephone interviews can provide challenges in interpreting data (Robson, 2011, p.241), but the researcher was familiar with the interviewees from her involvement in the training programme, which made interpretation of language and tone easier. Also, interviews with the designers had a more unstructured character, in order to adapt to the different experiences and knowledge of each designer regarding the training and their work in the public sector.

To follow up on the projects and assess whether participants' constructions of design and its suitability endured over time, the researcher decided to undertake a second round of interviews with leading participants in each team. Unfortunately only one interview was made. Two other participants agreed to be interviewed, but it was not possible to arrange dates. Another participant had moved on to a new job in a different organisation and it was not possible to contact him.

3.4.3 Extant documents

In studying the effects of contextual, cultural and structural factors, Sawyer recommends (2005, p.211) going beyond the individual and interactional levels and including written texts that describe cultural rules and shared meanings or practices. As participants' realities may not mirror organisational discourse (Charmaz, 2006, pp.37–38), discrepancies between empirical data and organisational documents may lead to new analytical insights. Thus, organisational and project documents would provide a better understanding of participants' projects, context and organisations.

In consequence, the researcher also included extant texts and artefacts (Charmaz, 2006, p.37), documents which were not elicited by the researcher's intervention but provided by gatekeepers, such as project documents, regulations and standards, or training materials. A full list of the extant documents included in each of the projects can be found in Appendix E. The literature review also contributed to the researchers' understanding of the public sector culture, as well as wider governmental perspectives towards the incorporation of design, and the dominant rhetoric of design-led innovation approaches.

3.4.4 Reflexive methods

Decisions and actions on both design practice and research respond to practical and social rules (Mareis, 2012, p.70) that are so 'ingrained' that are naturalised (Nonaka & Takeuchi, 1995, p.8). These forms of intuitive knowledge can be made explicit through *metacognition* (Flavell, 1979), our ability to be aware and make sense of our own experiences (Alvesson & Sköldbberg, 2000, p.9; Berger, 2015); and *reflexivity* (Charmaz, 2014, p. 188), the systematic scrutiny of experience, decisions, positions, and assumptions to become aware of the underlying processes and beliefs guiding both research and practice (Yeen, 2007, p.7; Mareis, 2012, p.70).

Reflexivity was used systematically as a data gathering method primarily during the practice-based studies in order to harness the researcher's experiential insights and design sensitivity, aiming to capture the researcher's evolving understanding of the design situation and perceptions of design's suitability and potential contribution. Inherent to her role as a

designer, the researcher was also evaluating the suitability of design strategies and methods in particular design situations. The use of reflexivity focused on identifying and questioning the researcher's perceptions of the projects studied, and the assumptions, mental models, beliefs and socio-political values ingrained in her design practice (Nonaka & Takeuchi, 1995, p.8), as well as the literature and experiences shaping her understanding of design.

To do so, the researcher used auto-interviewing (Boufooy-Bastick, 2004), using an interview guide to structure and prompt reflection, ensuring the collection of relevant data while allowing the exploration of emerging issues (see Appendix E, Figure 51).

Corresponding to Greewoods' reflection-before-action (1993) and Schön's reflection-on-action (1991), the researcher engaged in these auto-interviews before and after interactions with public sector professionals through workshops and meetings. The researcher undertook four auto-interviews in the scoping study and seven in the immersive study.

The researcher also used more organic forms of reflection such as reflexive memos (Groenewald, 2008, pp.505–506; Charmaz, 2006, p.72), which use free writing to explore insights and ideas. These memos were useful for documenting the researcher's impressions regarding research situations, interactions and events, and developing analytical insights as they emerged in the research process. These reflexive memos were written or audio-recorded depending on which media resulted most convenient at that particular moment.

3.5 Data gathering

3.5.1 Data quality

This section discusses the quality of the data gathered for answering research questions by examining the impact of: (1) the nature of the cases; (2) the methods used; and (3) the researchers' role and membership (Given, 2008, pp.772–774), understanding this membership as the researcher's relationship with the context, activities, and people studied.

Impact of the researcher's membership

The role of the researcher is usually expressed within the dichotomy of insider-outsider, describing whether or not the researcher belongs to the group studied (Unluer, 2012, p.1). In the context of this research, the researcher had a dual insider-outsider membership. This membership can be examined in terms of experience and setting: (a) whether the researcher shares with the participants the experience under study (Berger, 2015); and (b) whether the researcher is familiar with the context or setting (Unluer, 2012, p.2). Regarding the setting, the researcher had an outsider perspective of both the organisations and the public sector in general. As such, she did not enjoy 'an established intimacy' with research participants, nor did she have a previous understanding of the organisational politics or culture (Unluer, 2012, p.2). Prior experience working in the public sector might have given the researcher a different sensitivity towards the context and its history, or a faster understanding of public sector professionals' unstated meanings. But being an outsider was beneficial for identifying cultural and operational differences and tensions between design and the public sector cultures (Unluer, 2012, p.2). Nonetheless, the researcher had an insider role regarding the design practices studied, providing her with greater sensitivity regarding participants' degree of comprehension and engagement with design (Berger, 2015, p.5). This insider position, however, entailed the risk of the researcher inadvertently imposing particular views of design, which led to the reflexive enquiry into the researcher's understanding of design.

The combination of having an insider role as a designer but being an outsider to the organisation had its advantages for data gathering: participants did not assume the researcher would know what they knew (Unluer, 2012, p.6), while her role as a designer elicited questions about the empirical context. The researcher's questions for understanding the design situation did not alter the natural 'flow of social interaction' (Unluer, 2012, p.2) because they were intrinsic to both the research and the development of practice. The convergence between the design practice and the doctoral research regarding their purpose of understanding the projects and their contexts diminished the conflicts inherent to the dual role of practitioner-researcher (Unluer, 2012, p.6).

Data provided by the different methods

The self-completion questionnaires provided useful as well as unexpected contextual information about projects, teams and organisations, such as insights into how participants felt within their teams or, in the organisational change project, learning that a participating team had never met before the design-led workshop to discuss their new situation. Regarding participants' perceptions and evaluations of design, however, it is worth differentiating between the scoping and immersive case studies. They both yielded insightful reflections on what participants found valuable and challenging. However, the design interventions in the scoping study relied heavily on facilitation, as did participants' responses. By contrast, in the immersive study design interventions employed a variety of design methods, and thus reflected participants' views not only on particular tools but also on the perceived value, challenges and suitability of using design-led strategies in the project.

Participant observation, entailed working alongside public sector professionals, and provided insights into events that would not have emerged in an interview setting, such as capturing participant's unfiltered reactions to particular design methods or strategies, their trains of thought when making concrete decisions, or how they spoke among themselves about organisational constraints. The interviews, both unstructured and semi-structured, provided great insight into participants' perceptions of design and its suitability, as well as their experiences and the environmental conditions shaping those constructions.

Mode of incorporating design and continuity in the data

The mode of incorporating design or designers' role (consultation, collaboration, and training) determined the kinds of data available. In the scoping study, the researcher acted as an external consultant, gaining only glimpses of different stages of learning through interactions with different participants. As discrete interactions, observations could not capture public sector professionals' learning and evaluation as a process. By contrast, the immersive and main case studies (collaboration and training) allowed the researcher to follow public sector professionals' journeys through different learning stages, providing a better understanding of meaning construction as a dynamic process.

evolving character of the research, it was not always possible to fully and accurately articulate the purpose of the study to research participants.

Two other ethical concerns arose in this research from the incorporation of design practice as a method for empirical inquiry. These were regarding, firstly, relationships of commitment, and balancing research-driven and practice-driven activities. It should be noted that when referring to the researcher's practice this includes all the activities the researcher undertook to support the project teams in the development of their projects, from the scoping meetings, to documentation to understand the context, to the design and delivery of design-led activities and facilitation of workshops. Secondly, there were ethical concerns around the handling of sensitive information as a researcher-practitioner. The rest of this subsection will unpack these ethical considerations.

Relationships of commitment

In the practice-based studies, complex relationships of commitment came into play, involving both researcher and key informants, which were openly discussed in our interviews. The researcher felt and was responsible for developing a design practice that supported the teams in achieving their objectives, and there was a continuous tension of balancing the personal and professional commitment towards the projects while ensuring the research relevance of the design practice. Similarly, gatekeepers reported feeling responsible for providing the researcher with rich data and making sure she gained access to activities that were useful for her doctoral research while ensuring that the design interventions had a positive impact on their projects. While these tensions are not uncommon in practice-based research, it is relevant to note their effects on researchers, gatekeepers, research process, and data quality.

For instance, Helen (scoping study) acknowledged she had thought that the design activities planned were not appropriate for a team that had self-volunteered. The researcher only became aware of these concerns in a reflexive conversation months after the workshop session. This had consequences for the practice, as designers had to improvise and adapt workshop activities to suit the unforeseen needs of the team. This, however, did not have a

significant impact on the research, as it happened at the early stages of the exploratory phase. Anthony (immersive study), on the other hand, struggled with the unpaid role of the researcher. He felt guilty because of the workload undertaken by the researcher while the team did not have enough time to put into the project. This tension contributed to the re-scoping of the project to suit the time and capacity the team actually had.

On the other hand, the researcher's responsibility towards the projects also presented challenges. In the scoping study, the researcher lacked a detailed research agenda, allowing activities to be context-driven. But as research questions began to take shape, the researcher's interest began to diverge from the kind of work undertaken in the scoping project. The researcher's sense of responsibility towards the projects meant that her involvement was not only a means to engage in research, but also a professional commitment towards the participating teams. The researcher resolved this tension by making herself available for the people she had already been working with, providing them with a design perspective and advice on how further action could be undertaken, but ensuring that new design activities were aligned with the emerging and crystallising purposes of the research.

Development of practice and sensitivity of information

The handling of sensitive information also posed ethical concerns for undertaking and reporting the findings from the practice-based studies. Firstly, as part of the development of the projects, the researcher had access to confidential information, which, while being relevant to understanding the projects and contexts, has not been included due to ethical considerations. Secondly, a similar issue emerged in the facilitation of team discussions as part of the design practice. On more than one occasion, the researcher and other colleague designers had the feeling of being unintended witnesses of intimate arguments. During interventions, rather than giving teams privacy to discuss, designers chose to mediate discussions or redirect conversations, as these conflicts can carry relevant information about the context. In the reporting, however, this research has omitted any information that was not essential for understanding the evaluation and uptake of design in public sector contexts.

3.5.3 Discussion on validity

Given the constructivist epistemology that frames this research (see Section 3.1.1), this research acknowledges the elusive nature of reality and objectivity; however, as a number of social scientists have argued, useful reductions and interpretations (Gleiniger, 2008, p.55; Gandy, 2008, p.562; Crotty, 1998, pp.47–48) can nonetheless be produced to help us make sense of the world. Furthermore, although we must acknowledge that in our effort to understand the world we are drawing in aspects from ourselves, sensorial and interpretive limitations do not imply that either empirical data or research results are to be taken as subjective opinions (Harney et al., 2016, p.319). Cronbach (1971), for example, argued that value-free validity is a contradiction, as research does not occur ‘in a vacuum’ (Morgan, 2014, p.1051). Pragmatists reject altogether the correspondence criterion of truth (Kvale, 1995, pp.23, 25), proposing instead a discursive concept of validity associated with public discussion (Cronbach, 1971; Kvale, 1995, pp.21–22). Truth becomes ‘whatever assists us to take actions that produce the desired results’ (Kvale, 1995, p.35) and is based on ‘its usefulness in that particular context’ (Harney et al., 2016, p.319).

Therefore, discussions and conclusions in this research are to be taken neither as facts nor opinions but as reasoned judgement (Paul, 1993, p.313), as the researcher’s construction in interaction with the research situation and within a particular cultural, social and political context (Harney et al., 2016, p.319). The propositions developed in this research are not ‘the truth’, but a combination of design’s truth (as found in the literature), research participants’ truths (as people working with design within the public sector) and the researcher’s truth (as a design practitioner and through interaction with the research situations). Reasoned judgement can be argued against, but ‘what is apparently empirically true is also arguable’ (Paul, 1993, p.313).

3.6 Analysis

As it is characteristic in naturalistic enquiry (Robson, 1993, p.61), this research adopted a grounded or inductive analytical approach (Charmaz, 2014, p.188; Bryman, 2004, p.540; Creswell, 2007, pp.19, 21), which builds codes, categories, concepts, and theory from empirical data. The analysis sought to make ‘analytical sense of participants’ meanings and actions’ (Charmaz, 2006, p.11) regarding the evaluation of design suitability in their work, while making a particular emphasis on how their contexts shaped their views and decisions. To this purpose, the analytical approach drew strongly on the strategies and methods proposed by Charmaz (2006) for constructivist grounded theory but adapts these to the evolving needs of the constructivist cases study approach employed in the research.

The analytical process (see Figure 18) underwent three distinctive stages: (1) understanding and conceptualising the empirical context; (2) identifying patterns across projects’ contexts and decision-making processes; and (3) articulating findings and contributions. The analytical approach taken at each stage was determined by the purposes of the analysis; the type and amount of data; and the researcher’s needs to make sense of the data (Stake, 1995, p.77). This section outlines the three analytical stages. Appendices *G*, *H*, and *I* offer further detail on the materials included, procedure, and strategies used.



Figure 18 Analytical stages in relation to data gathering and research phases (Author, 2018)

The first stage of analysis included the first and second case studies and aimed to inductively develop research and data collection questions (Maxwell, 1996, pp.44–45) and conceptualise public sector professionals’ evaluation of design as a social process of meaning

construction. Due to the generative and immersive purposes of these early phases, the researcher wanted to capitalise on her design sensibility and relationship with the field of design under study, and on the experiential dimension of these practice-based studies. To do so, the analysis included empirical and reflexive materials. The analytical strategy adopted was ‘direct interpretation’ (Stake, 1995, p.74), which capitalises on ‘ordinary ways of making sense’ and the ‘intuitive processing to the search of meaning’ (Stake, 1995, pp.72, 74), through the simultaneous and ‘iterative collection, analysis and reporting of data’ (Merriam, 1998, p.153).

The second analytical stage included the main case study and aimed to find emergent patterns in the data regarding how public sector professionals evaluate design and what social factors influence their decisions and actions. This analysis aimed to identify similarities and differences across the four embedded units, that is, the four design projects from different organisations participating in the training, and to contrast public sector professionals’ and designers’ perceptions of the suitability, contribution and role of design.

Given this overarching purpose and the high quantity of data, this analysis required a categorising or coding strategy (Maxwell, p. 77-78), which allowed fracturing the data (Strauss, 1987, p. 29) and simplifying comparison across units (Maxwell, p. 78). The software NVivo was used to this end. *Appendix H* details how this analysis drew on and adapted to case study methodology the analytical strategies and methods proposed by Charmaz (2006) for constructivist grounded theory.

The third analytical stage took place after all the data had been collected and analysed and focused on articulating research findings and contributions. The first step was to triangulate the findings from the main case study with the interim findings from the first and second case studies, and in doing so, refine the research conceptualisations of the evaluation process and ecosystem. The second step in articulating findings responded to the research aim of identifying opportunities for enhancing public sector professionals’ uptake of design-led innovation approaches. Research findings pointed towards the relevance of design communication in public sector professionals’ understanding and evaluation of design

strategies and methods. This analytical stage focused on exploring the practical implications of empirical insights, aiming to (1) articulate gaps in design communication; and (2) develop actionable strategies and alternative descriptions and representations of design that could enhance design's credibility and comprehensibility in public sector contexts.

To do this, this analysis took a practice-based (Fallman, 2008, pp.7–8) dialogical approach (Berniker & McNabb, 2006, p.645) to exploring the conflicts between design communication and public sector professionals' interpretation and evaluation processes, and included both empirical insights and the literature. The researcher chose a practice-based approach by actually developing descriptions and representations of design in response to empirical insights as a means to uncovering and articulating gaps and alternative communication strategies (Fallman, 2008, pp.7–8). The practice developed included illustrated videos introducing design innovation practices to public sector professionals, and visual representations of the design process and the roles that design and designers could take in public sector contexts. This design exploration (Fallman, 2008, pp.7–8) acted as a dialogical enquiry (Berniker & McNabb, 2006, p.645), where alternative descriptions and representations of design are both constructed and emergent from the dynamic interaction between the multiple perspectives of design present in the data. The results from this analysis constitute the main contribution of this research, as it supported the researcher in defining communication gaps more explicitly and allowed the development of propositions to overcome communicational barriers.

3.7 Concluding Remarks

This chapter has offered detail on the methodological approach of this research, from its theoretical underpinnings to the selection of methodology, to the research design, including research phases, selection of cases, data gathering and analytical approach. This research has followed a constructivist or naturalistic case study approach to studying the incorporation of design-led innovation approaches in the public sector. This constructivist research underwent three phases (scoping, conceptualisation, and refinement phases), which can be associated with three case studies (scoping, immersive, and main case studies).

Beginning with a scoping phase through a practice-based exploratory study that sought to empirically ground research scope and questions, and focused the research on understanding how public sector professionals decide whether or not to apply design approaches, strategies and methods in their work. To do so, subsequent case studies sought to conceptualise and refine this research understanding of evaluation. Seeking to conceptualise the processes and factors that play a role in evaluation through, an immersive practice-based case study looking at redesigning the organisation's statistical publications allowed the research closely worked with a team of public sector professionals advising and exploring how to take a user-centred approach in their project. Together with the relevant literature on meaning construction, this case study served to conceptualise (a) design uptake as a contingent of public sector professionals' evaluation of design, and (b) evaluation as a process of meaning construction, shaped by the nature of the projects and their contexts and public sector professionals' interactions with design practice and practitioners. Seeking to refine these conceptualisations, the main case study looked at a design-training programme, which included four projects to compare across. Primarily through participant observation, interviews and documents from projects and organisations, the researcher sought to gather data on public sector professionals' interactions with design practice, their views and decisions regarding design's suitability, and the factors shaping those decisions.

The next chapter presents the case studies and offers detail on the projects, contexts and organisations, and interactions observed.

Chapter 4

CASE STUDIES

SIX DESIGN PROJECTS IN THE SCOTTISH PUBLIC SECTOR

The methodology chapter described how the research was undertaken, providing details of the research activities undertaken in each case study. This chapter presents the case studies (see summary in next page). The chapter describes the projects and their contexts, and public sector professionals' interactions with design practice and practitioners. Each of the three case studies starts with a summary and is structured in three main sections: firstly, the description of context framing public sector professionals' interactions with design practice and practitioners; secondly, a project overview or roadmap of the case study summarising key events and activities studied; and thirdly, a review of the interactions studied.

In the practice-based studies, the Project Context Section describes the design situation and the role of designers as scoped and agreed by the public sector professionals and the designers involved, including the researcher. The Project Overview Section outlines the interactions between designers and public sector professionals and the design-led project activities, in connection with the research activities undertaken and their role in formulating and answering research questions. Finally, the Project Activities Section describes the most relevant interactions between public sector professionals and designers and their impact on the evolution of the projects.

Following a similar structure, the training-based case study begins by describing the interactional context, which is the training programme; and includes its objectives, format, and setting. Then the text moves to describe the four participating teams, their projects and organisations. To present public sector professionals' interactions with design practice and practitioners, in this case study the final section describes the Training Activities, including the design methods and strategies introduced and how these were communicated.

Table 8 Summary of case studies and projects studied

	<p>SCOPING CASE STUDY</p>	<p>Research Purpose Defining the research scope and questions</p>	<p>PROJECT Organisational Change</p>	<p>Research Context The creative department in a public sector organisation undergoing a significant organisational change wanted to explore how design could support this transition</p>	<p>Researcher Involvement Worked with other designers scoping opportunities for using design in the project and delivering workshops Also engaged in multiple discussions with public sector professionals exploring their views of design's roles and contributions in public sector contexts</p>	<p>Impact on the Research Focus on public sector professionals' perceptions, initially, of design's potential role and contribution in the public sector Formed questions around what shaped people's perceptions of design, leading to literature review on meaning construction</p>
	<p>IMMERSIVE CASE STUDY</p>	<p>Research Purpose Working closely with public sector professionals and participating in their discussions as they assessed how to use design methods and strategies in their project. Exploring what shaped public sector professionals' perceptions of design</p>	<p>PROJECT Redesigning Statistical Outputs</p>	<p>Research Context A team of four public sector professionals from different departments sought design support to envision how their statistical publications could harness digital technologies A particular publication was used as a path-finder. The project manager suspected this publication was not reaching its intended audiences, and was concerned with how these resources were being utilised.</p>	<p>Researcher Involvement Engaged, as a solo designer, in advising the team on how to take a user-centred approach in their project and delivering design activities and workshops</p>	<p>Impact on the Research Expanded focus from resulting perceptions to decision-making processes Defined evaluation as a socially situated and dynamic process of meaning construction</p>
	<p>MAIN CASE STUDY</p>	<p>Research Purpose Identifying patterns in public sector professionals' evaluation of design's suitability across different projects and contexts</p>	<p>Research Context Design training for public sector professionals with four participating organisations. Teams explored design methods and strategies through formal training sessions and through their projects.</p>	<p>Researcher Involvement Attended the training as an observant and joined different teams as they explored how to apply design methods and strategies in their projects</p>	<p>PROJECTS 1. Vulnerable Users 2. Service Integration Both projects sought to integrate services across different intuitions in response to financial cuts and policy guidelines. Both catered services for vulnerable users.</p>	<p>3. Internal Services Sought to improve a digitally-based internal service to the organisation driven by staff feedback</p> <p>4. Improvement Project A Scottish-wide improvement agency sought to improve the improvement protocols and tools they offered other organisations for self-evaluation</p> <p>Impact on the Research Led to further dialogical analysis contrasting how design is portrayed by designers, and in turn, how public sector professionals construct meaning.</p>

4.1 Scoping study: organisational change

The collage features several key elements:

- Top Left:** A hand-drawn diagram titled 'JOURNEY = FUTURE' with sub-sections: 'What inspires you?', 'Things you can start thinking about', 'How has the change affected the team?', and 'What are we?'. It includes a small illustration of a person at a computer.
- Top Right:** A hand-drawn diagram titled 'Exploring the PRESENT + JOURNEY = FUTURE of the team' with a central figure and surrounding text.
- Middle Left:** A hand-drawn diagram titled 'What inspires you?' with a central figure and surrounding text.
- Middle Center:** A hand-drawn diagram titled 'How has the change affected the team?' with a central figure and surrounding text.
- Middle Right:** A hand-drawn diagram titled 'What are we?' with a central figure and surrounding text.
- Bottom Left:** A hand-drawn diagram titled 'Exploring the PRESENT + JOURNEY = FUTURE of the team' with a central figure and surrounding text.
- Bottom Center:** A hand-drawn diagram titled 'What inspires you?' with a central figure and surrounding text.
- Bottom Right:** A hand-drawn diagram titled 'How has the change affected the team?' with a central figure and surrounding text.

Scoping the project and defining designers' intervention:
 Designers were asked to make posters in order to engage employees in the ongoing changes, but designers felt this did not match their practices. Employees' disengagement with the new changes led designers to believe that design's interventions for engaging staff could have had a greater impact at earlier stages of organisational change. After negotiations, it was decided that the designers would deliver a series of workshops aimed at visualising the roles and remit of each department, as with the ongoing structural changes, employees complained they no longer knew who was doing what.

Delivery of workshops and reframing of designer's intervention:
 Due to the recent changes, teams were still at early formation stages, dealing with complex dynamics and unsure of their new remit. This made impossible outlining the roles and remits of different departments, and the purpose of designers' workshops shifted to support teams navigate the new changes.

Figure 19 Case Study Summary: Organisational Change

4.1.1 Project context

This exploratory practice-based study took place in a Scottish public sector organisation that was undergoing structural changes. The organisation, which provided services for other public sector organisations, had a total of fourteen teams (or departments) and 300 employees; structured within two divisions: one in charge of service provision and one in charge of administration. The majority of employees worked in the same building.

The organisational changes – referred to as *the restructuring* – aimed to improve the organisation's functioning and service provision. The head of the directorate and the heads of the two divisions had decided upon the structural changes in consultation with some of the team managers. Although lower level staff had not been consulted in the decision-making processes, involvement was being sought at this stage, through various activities:

- Common Ground sessions: feedback sessions that used writing and drawing activities to explore the past and the future of the organisation and gather employees' views of the changes and aspirations. Four sessions had been undertaken before the designers' involvement. Although these were open to all employees, this format did not work for engaging lower organisational levels and attendees were primarily senior management.
- The Change Team: 14 people across the directorate had expressed an interest in being more actively involved in the change process, and were volunteering their time engaging in focus group sessions.

These activities were generally aimed at safeguarding good practice and fostering ownership over the changes being undertaken. These feedback devices gave 'all staff the opportunity to comment on the directorate changes and ways of working' (extant document) and aimed to 'mak[e] the story of change [the rationale behind the restructuring] available to those who had not been involved in the decision processes' (main gatekeeper). However these initiatives had not had the expected reach. By involving designers, gatekeepers wanted 'to explore how people in the [organisation] work together' drawing out 'previous successes, existing talents, and future aspirations to envisage organisational change' (designer, email).

4.1.2 Project overview

This case study was exploratory and corresponded to the orientation phase. At this early stage, the research had a broad interest in studying how design-led innovation practices fit within the public sector, and this case was aimed at inductively developing the research purpose and questions. The question driving both research and practice was – *how could design-led innovation approaches support public sector professionals in this specific situation?* Engagement with the setting lasted approximately ten months, from May 2014 to March 2015, although there were periods of low activity due to summer and Christmas annual leaves. Figure 20 shows an overview of the case study, which outlines both the project activities (in blue, above the line) and the research activities (in grey, below the line). Regarding the setting, designers, as visitors, were not allowed to enter or walk around the premises unescorted.

The project began with a scoping and research phase aimed at exploring opportunities for designers to support public sector professionals in the organisation as well as ‘getting a deeper understanding of the organisational context’ (gatekeeper). These aims mirrored the research aims at this stage. This project phase included a number of meetings with gatekeepers from the public sector, an exploratory workshop with the Change Team, and a review of extant documents that included information on the changes and the results from the Common Ground Sessions.

As the next section describes in more detail, this scoping and research phase revealed, among other things, teams’ lack of clarity regarding their new roles and remits. Supervised by the gatekeeper, the designers developed mapping activities to be undertaken in workshops with the different departments or teams within the directorate. These activities were aimed at understanding and making tangible the changes that were happening and how the directorate and its teams worked, by visualising the teams’ old and new remits and their connections and overlaps with other teams in the directorate. The purposes of these activities were:

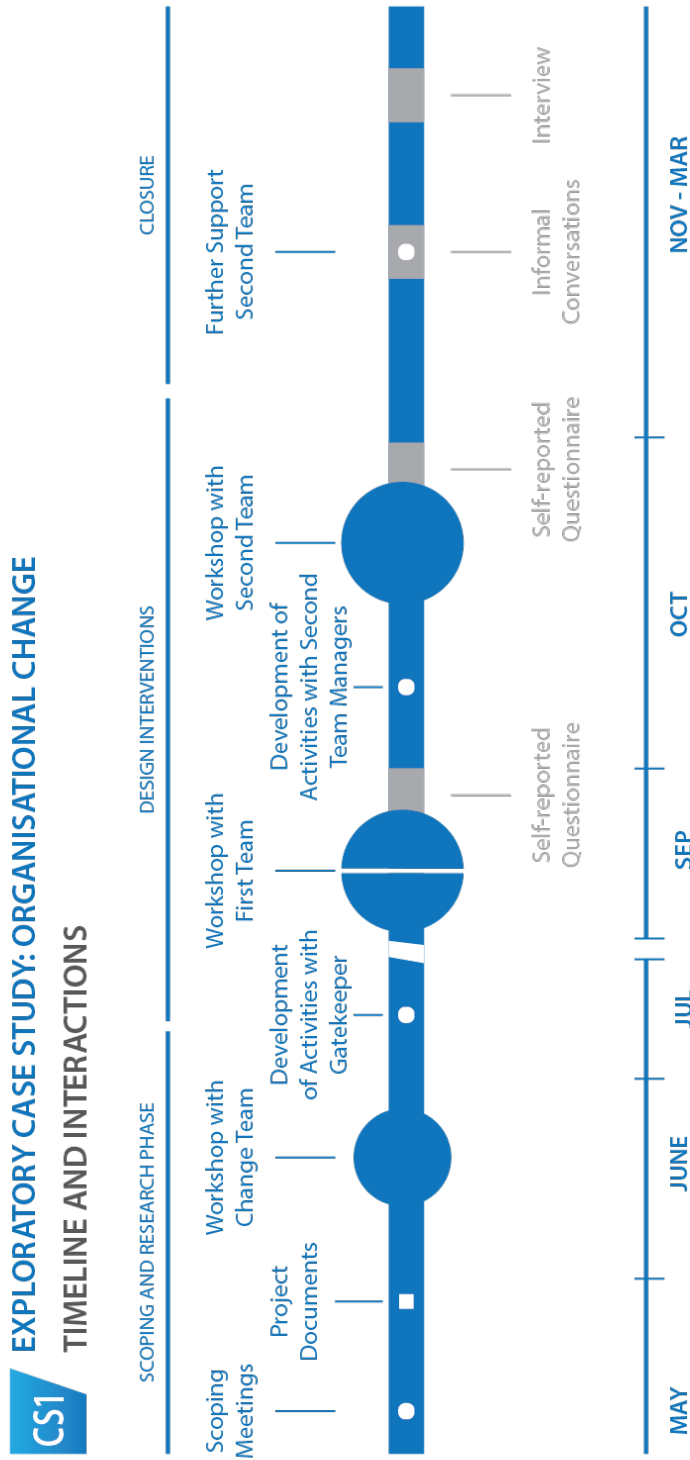


Figure 20 Design and research activities for the scoping case study (Author, 2018)

- To share information across teams of their new remits and activities after the changes,
- To safeguard good practice and identify potential improvements and gaps and overlaps between teams,
- To inform new managerial staff about how their new department worked and how it related to the rest of departments.

The workshops were held with two teams, both of which were the result of merging two departments. As the designers engaged in this practice, the aims of the project and design interventions shifted from mapping the changes, to defining the teams' remits and supporting participants in navigating the restructuring of their teams.

The next section details the interactions between designers and public sector professionals as well as the impact of these interactions on shaping both the research and the project.

4.1.3 Project activities

Scoping meetings

The scoping phase of this project had a significant impact on the development of research questions. The interactions between public sector professionals and designers for scoping the intervention of design in the context of the on-going organisational restructuring revealed diverging perceptions regarding the potential role and contribution that design could have.

Significantly, in one of the early meetings, gatekeepers suggested that the designers could make posters that would help staff to understand and engage with the changes undertaken. The designers had the impression of being asked to 'brand' the changes and related initiatives to trigger engagement and ownership on behalf of the staff. Both designers felt that this kind of design work did not match their design innovation practice.

Similarly, one of the initial questions presented to the designers was 'how to gain the trust from all organisational levels, so they truly believe that the process is open for them to participate?' However, the purpose of involving staff at the implementation stages of change

was not clear to the designers either. The designers' reflections revealed a feeling of design being called in 'too late'. Looking at the design situation from the perspective of participatory design approaches (Bjögvinsson et al., 2012), designers could see the *potential* for introducing design methods earlier in the change process. This would have meant involving staff with the purpose of informing the changes and making sure that the new roles and structure built on the knowledge and needs of the people implementing those changes. But as the changes were already in the implementation stages, participatory activities seemed unlikely to have an impact.

These conflicting perceptions on the *potential* role and contribution of design and their impact on its *actual* role and contribution highlighted the relevance of public sector professionals' preconceptions of design in its procurement. In response to these insights, the research began to question how public sector professionals evaluated the suitability of design-led innovation approaches and how they decided when, why and how to apply design methods and strategies in their work.

Workshop with the change team

This exploratory workshop had the double purpose of supporting the designers in understanding the context and informing the development of the mapping activities. It helped the researcher to gain a clearer idea of the directorate's structure and familiarise themselves with the context by gathering perspectives from different levels of the organisation, as pointed out by the gatekeeper. As preparation for the mapping activities, this session aimed to define the kinds of information that needed to be mapped and how it could be mapped, and explore potential ways [in which the mapping activities] could be communicated to teams.

Although the expected average turnout at Change Team sessions was of 10 attendees, this session only had five participants including Helen, who would normally run the meeting. All participants were female. Sarah was in her 50's. She had joined the directorate over a year and a half earlier but had been working in the public sector for almost 20 years. She had joined the Change Team because she wanted their voices to be heard. Susan and

Emily were in their 20s and had recently started working in the organisation, and their motivation for joining the group was making connections with other teams and learning about the changes. Nicola, who would after this session recruit her team for the next workshop, was in her 30s and joined the session later when the group were beginning to visualise their teams' activities.

After a presentation on design methods and mapping techniques, participants were asked to visualise their teams/departments, what they did, its structure and their different roles. For this exercise, participants were given blank A3 sheets of paper to explore their intuitive ways of visualising their teams. The five participants, including Helen, worked on their visualisations in an informal and relaxed atmosphere.

Afterwards, participants and designers held an open discussion on both the visualisation activities and the on-going changes. It is worth noting that at first Helen seemed the most driven to answer the designers' questions. However, as discussions advanced, this did not prevent the rest of participants from intervening. Especially Sarah and Nicola, who had been working in the public sector for longer, were very vocal and eager to participate.

These discussions explored the challenges and value found in this visual exploration of their teams, as well as how the activity could be further developed and used. But conversations on the mapping activity led to more personal accounts of the negative emotional impact that the restructuration was having on them and their colleagues. Staff members reported experiencing anxiety and uncertainty attributed to a lack of clarity about shifting roles and responsibilities and frustration due to tasks and queries being bounced between teams. They experienced anger due to a lack of acknowledgement of their voices and knowledge on how the functioning of the Directorate could be improved; and demanded greater involvement in decision-making and a 'flatter structure'. The restructuration also meant that old teams were being split and merged into new ones, provoking both sadness for having their managers and colleagues moved to other teams and clashes within the new teams due to their different ways of working. The changes were felt to be destabilising, and had provoked resistance and increased levels of distrust towards

management due to ‘things happening without any thought for the staff who will be affected’. Similar insights were present in the report of findings from the Common Ground open feedback sessions where the changes were discussed with the staff. Staff responses to the restructuration reinforced the designers’ hunch that design could have contributed greater value at earlier stages of the change process. Quite possibly, involving staff in the decision-making processes could have diminished the emotional effects of uncertainty and increased ownership over the changes (Bjögvinsson et al., 2012).

Workshop with the first team

This session lasted for two and a half hours, starting at 10 am. This team resulted from the merger of the creative and the administrative sides of a service area. Nine out of thirteen team members attended the session. Leon, the manager, was new to most of the team. This ‘was the first time the team had got together’ to discuss their new situation openly and ‘there was plenty of early group formation going’ (self-reported questionnaire).

The workshop did not go as planned. The team did not reach mapping, as arguments started as soon as participants began discussing the team’s work and remit. There was a noticeable lack of clarity in the team’s objectives and aims. The designers adapted and improvised their intervention to suit the needs of the situation, aiming to support the team develop a collective understanding and strategy of the team’s work and vision. The designers proposed to collectively establish a mission statement articulating the team’s overall purpose. Participants engaged eagerly in this activity. Everyone began contributing with statements of purpose, sticking post-it notes on a big piece of paper, until the manager wrote a fully articulated mission statement for his team. The rest of the participants stopped contributing to the activity, but discussion continued.

The power relationships in the room were hindering collective thinking. The main output of the session, and the main contribution of design, was a mind-map generated by the designers, merging and synthesising the different views expressed by participants, and articulating their overarching aim or mission statement, objectives and some key activities. This artefact had a democratising intention, characteristic of design-led innovation

approaches (P. 46). The artefact became an element of convergence in the team's discussion. From that point onwards even the manager began referring to the map's definition of their mission statement. Overall, however, the contribution of design in this context was not as initially intended. Due to the unforeseen needs of the team, the objective of the workshop shifted from mapping the teams' remit to supporting the team in establishing a shared vision of it.

Workshop with the second team

Designers worked on the definition of the activities directly with the team managers, to make sure they met the team's needs. This team was the result of merging two complementary aspects of statistical analysis: 'crunching numbers' and interpretive data analysis. The merged team also became part of a different Directorate. The two factions of the team had different perspectives on where and how they contributed value to the organisation. Hilary – the new manager – was working closely with Cleo – the old manager of one of the teams merged – to put in place a shared vision and strategy. They expected designers to support their team in creating 'a joint vision statement for the team' in a 'different and fun way', using visual methods. This workshop aimed to help the team 'understand each other's skillsets and projects better, identify connections between [their] work, and think about how [they could] make a difference by working together'. Participants were asked in advance to think about the present and future of the team, identifying concerns and opportunities that emerged from the restructuration, identifying their team's aims and beliefs underlying their work, and exploring their vision of the future.

The session, run by the designers, lasted 3 hours, starting at 9.30. There were 9 participants including the managers Hilary and Cleo. The designers facilitated discussions and visualised insights on a 1.5 m by 2 m template stack on the wall, which focused on envisioning the future based on the existing skills and strengths of the team.

This session was much smoother to facilitate. The atmosphere was relaxed and joyful, and all participants were eager to speak up about their views, listen to each other's opinions and discuss any differences. Overall, participants praised the environment, the facilitation

and the visual outputs generated (self-reported questionnaires). After the session participants reported having ‘already used some of the images’ produced in the session. But more in-depth discussions were needed. Hilary and Cleo were keen on exploring further opportunities to engage with the designers and continue working on their team’s strategy through visual methods.

Project closure

No other sessions were undertaken with the directorate’s teams, primarily due to divergences between project and research purposes and a lack of capacity on behalf of other designers. By this point, it was clear that the purpose of the design interventions had been reshaped in response to the actual needs of the teams undergoing restructuring. The initial project aim was to map out departments’ remit to identify gaps, overlaps and issues emergent from the recent restructuring. However, the workshops undertaken suggested that teams were still at an early formation stage due to the recent changes, which limited the role of design to supporting the teams’ navigation of the changes and defining their remit. Design’s contribution in this context strongly relied on the designers’ facilitation skills and the use of visual methods to foster collective thinking, as observations and questionnaire responses collected after the workshops consistently reported. This shift in the purpose of the project notably narrowed the scope of the research to the facilitation of team dynamics, which, while being an inherent part of collaborative design practices, as established in the scope of context, diverged from the emerging research questions. Additionally, there were no other designers from the Institute of Design Innovation available to continue the project with the researcher.

Due to ethical responsibility, however, the researcher held two other one-to-one consultation sessions and several phone calls with the managers of the second team, to advise them on how they could keep on developing their team’s strategy through a design lens. The researcher took these meetings as an opportunity to reflect with them on their perceptions of design’s value and role in the public sector.

4.2 Immersive case study: redesigning statistical outputs

Scoping the project and defining designers' intervention:
 Aiming to explore new ways of publishing statistical data, design was expected to contribute in the implementation of prototypes. After negotiations, it was agreed that the designer/researcher would participate in the development of the project and advise the team on how to take a user-centred approach. In hindsight, the aspirations of the project as a path-finder for exploring new ways of publishing statistical data did not match the needs of the publication manager, concerned with saving time and resources. This duality ultimately led to a rescoping of the project to deal with efficiency savings.

Negotiating a design approach:
 These negotiations highlighted the relevance of public sector professionals' existing knowledge of design and interactions of designers, as team participants would judge the suitability of design methods and strategies in relation to their conceptualisations. Despite the project's initial intention of involving users, there were a number of concerns around the suitability and reliability of design methods combined with organisational pressures.

Delivery of activities:
 After design-led workshop sessions, either within the team or with stakeholders, research participants were positively surprised by design's outputs.

Figure 21 Case study summary: redesigning statistical outputs

4.2.1 Project context

This practice-based case study looked at the redesign of statistical publications. It is worth noting that, before the researcher joined the project, the team driving the project had already established its scope and aims and had decided to take a user-centred design approach based on the Design Council's Double Diamond approach, advised by the creative department. The team sought the researcher's support because they lacked experience applying a design-led innovation approach.

The initial brief established as the aim of the project to 'modernise the way in which statistical *first releases* are designed, published and used' (PID). First releases are surveys that incorporate a wide range of subjects and precede more detailed topic-specific reports. While the team driving the project was confident that topic-specific reports were largely used, they were unsure of the usefulness of the first release. Their remit, as part of the statistics group, was to provide a valuable and trustworthy source of information, accessible to the whole population of Scotland, from decision-makers to the public. However, the team acknowledged that even though the report provided insights relevant to a wide range of people, the format in which data was provided did not suit most of these users, limiting its impact. Statistical outputs were also accessible outside the report as raw data, in table format with no interpretation. Team members suspected that many people who considered themselves users did not 'even look at the annual report' (meeting).

This project focused on the redesign of a particular first release or statistical report that would be used as a 'pathfinder' or 'proof of concept' to 'explore and test user requirements and alternative designs'. The project aimed to 'capitalise on new and emerging technologies to better meet the needs of current and potential users' (scoping meeting). The people driving the project were hoping to use the learning from this project to spark a movement across their sector to improve the way statistics are released.

The project aimed to use a 'user-centred design approach' based around the 'double diamonds' (2.1.2), and intended to hold 'several user events' and 'experiment with different

prototypes before agreeing on a solution'. Team members had produced a project timescale, using the Double Diamond representing the following stages:

- Seeking views and information gathering
- Finalising proposed approach (By December)
- Prototyping and testing ideas
- Finalising Prototype (By March)

Despite the clarity of the initial brief, ambiguities emerged concerning the project's scope and aims. Different aspirations within the team shifted the focus between improving the report in its current format and exploring alternative ways of publishing data. Anthony, the manager of the first release or report being redesigned, believed the resources used on its production could be better used elsewhere and aimed to improve the cost-effectiveness of his department. But his project had been absorbed by a wider exploratory project that looked at the modernisation and digitisation of the government's statistical outputs. Gary, who sought for design support, led this exploratory initiative. The four of them participated in the project meetings, workshops and email discussions. Anthony was the decision-maker and the only team member directly working on the publication redesigned. The coexisting aspirations within the team together with delays in reaching milestones and doubts about the reliability and value of design research strategies contributed to the project being re-scoped to focus on addressing the specifics of the report being used as a pathfinder

4.2.2 Project overview

In contrast with the first case study, this project required the researcher to articulate and explain design-led innovation approaches to public sector professionals. Although the team had decided to take a user-centred design approach before contacting her, team members were not familiar with these approaches. Therefore, the researcher's advisory role included explaining both the approach and the rationale for using particular tools or strategies. As the researcher sought to conceptualise what factors shaped public sector professionals' decisions on the application of design methods and strategies, the researcher began to observe how she communicated design as well as how public sector professionals spoke about design and

used design language. This section describes primarily two design activities or interactions: the scoping meeting, and the scoping workshop with the whole core team.

This project lasted about six months, taking place between October 2014 and March 2014. However, there were discontinuities in the project due to a family bereavement within the team and the Christmas break, and activities were often delayed due to a lack of capacity on behalf of the team. Figure 22 shows an overview of the case study, which outlines research activities (in grey, below the line) and the main project activities (in blue, above the line), although it does not include regular meetings with the core team or the many project discussions held over email.

The project began with a negotiation to define the role of the designer/researcher and a scoping phase exploring the context and project specifications. This phase included a briefing meeting, a design-led scoping session with the core team, and a review of the projects' documentation.

The next stage of the project was undertaking user research. This included documentation, through the review of official documents defining the intended users, web-analytics on access to the publication, a questionnaire sent to registered users (although its results were not analysed due to lack of capacity on behalf of the team), and a workshop with the lead-analysts' network – a group of producers and consumers internal and external to the organisation. Building on the results from this workshop, the researcher produced a website envisioned as a hub for involving stakeholders in the evolution of the project. A workshop with users was planned and the team had begun to discuss the format of a series of co-design workshops with consumers, producers and designers to explore ideas. However, these were postponed and ultimately cancelled with the re-scoping of the project.

The following section provides an overview of public sector professionals' interactions with design, including negotiations and discussions regarding the application of design methods and strategies, and the design activities delivered by the researcher.

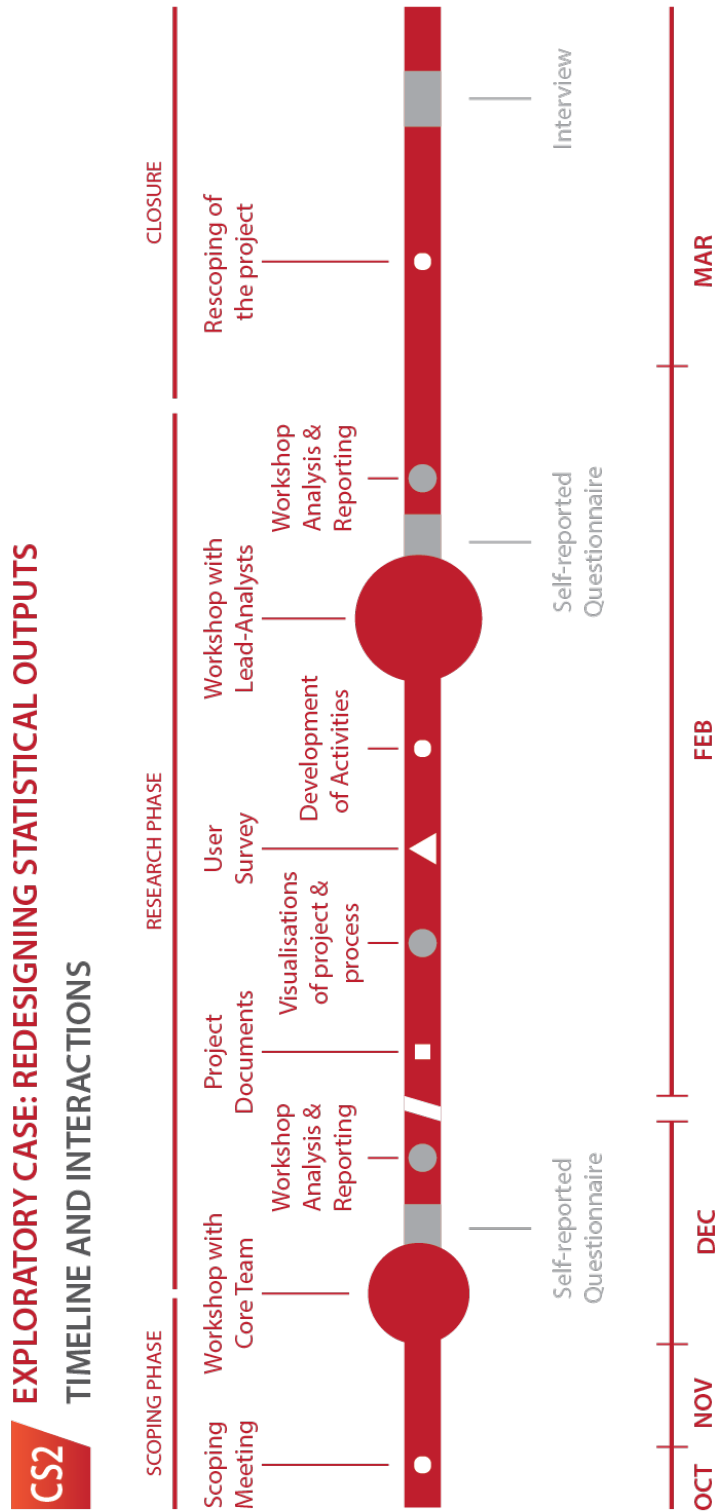


Figure 22 Project overview: design and research activities for the immersive case study

4.2.3 Project activities

Scoping phase – communicating design

Although the team had decided to take a user-centred design approach based on the Double Diamond (Figure 4), they did not know exactly what that implied. As it happened in the scoping case study, diverging perceptions regarding the role and remit of design emerged in the early negotiation or procurement stages. For instance, the project summary sent to the researcher stated that, although ‘the project would benefit from design expertise at all stages’, it would be particularly relevant at the point of ‘prototyping designs’. While the researcher was confident she could guide the team through a user-centred design process, designing and facilitating workshops with users and stakeholders, developing ideas and building and testing early prototypes; her design expertise would not suit the development of complex digital prototypes. Thus to determine the role of design in the scoping meeting, it was necessary for the researcher to provide an understanding of design’s process beyond (or before) development. It is worth noting that only two team members were present at this meeting.

As participants were aware of the Design Council’s Double Diamond framework, the researcher used this as a starting point (Figure 22). She explained that the design approach would first focus on understanding the problem. And thus there would be an initial exploratory phase involving users and stakeholders and aimed at understanding their needs and wishes, while the core team would work on defining what could be produced regarding financial and technical resources. She also explained that mapping the stakeholders, everyone that had a relationship with the project, could help the team in identifying and deciding who should be involved at different stages in the project. In this discussion, several questions about users emerged: who uses the data? What for? How would they like to access the data?

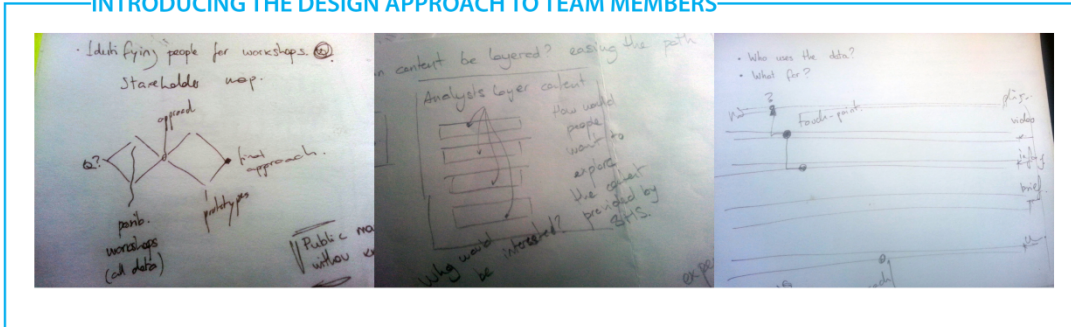
The researcher explained that in the following phase, the insights collected would be pulled together and used in the conceptualisation of the product or service. For this the researcher made use of her previous experience working with media companies and

described how understanding the users' needs, aspirations and experiences of accessing their content could guide the design of an interactive system. She explained strategies for reaching different audiences depending on their particular needs and preferences. Two examples she offered were providing content using multiple media (such as infographics, videos, or raw data), and creating layers of depth within the content that would allow users to explore data incrementally, from headlines to raw data, and in a flexible way.

The researcher also explained how designers create personas as profiles of different users and visualise users' journeys to identify and design the touch-points, or users' points of contact with the services. The researcher emphasised that design decisions regarding how to publish their content should build on research insights. Gary and Daniel were very interested in exploring how the content they provided to users could be layered to allow different depths of insight according to users' needs. The researcher also described how users and other stakeholders could be involved in the process through research and co-design workshops. She pointed out how engaging people in the process not only informed the definition of outputs but could also foster ownership. The researcher also explained that they could develop prototypes in a variety of fidelities, from cardboard to digital mock-ups, but that the team would need other kinds of designers for further digital development.

The design-led session with the core team facilitated by the researcher aimed to lay the foundations for the project and ensure that everyone was on the same page. The activities in this session focused on establishing the project's aims, stakeholders, scope and strategy. After this session, the researcher produced a comic (see Figure 24) and a brief report defining the project's scope and aims. The researcher created a second comic (Figure 25) to communicate some of what she considered key characteristics of her design approach. The development of this comic began to shape questions regarding the impact that different descriptions and representations of design approaches would have on public sector professionals' evaluation processes.

INTRODUCING THE DESIGN APPROACH TO TEAM MEMBERS



FIRST MEETING WITH TEAM

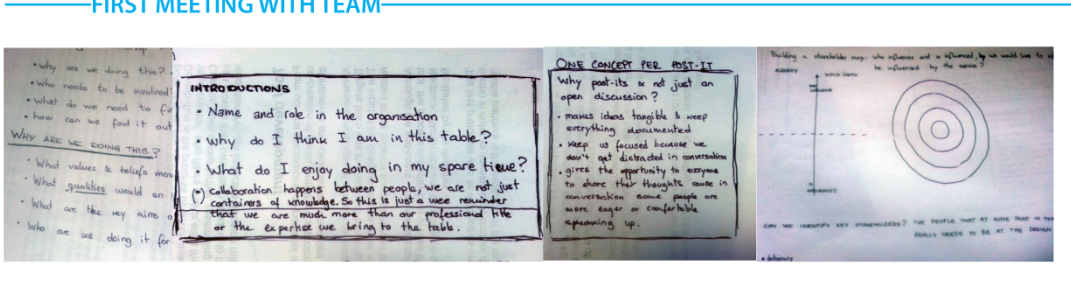


Figure 23 Above, discussions and negotiations defining the role of design. Below, design-led scoping session with the core team. (Author, 2018)



Figure 24 Comic describing the project context and purpose (Author, 2018)

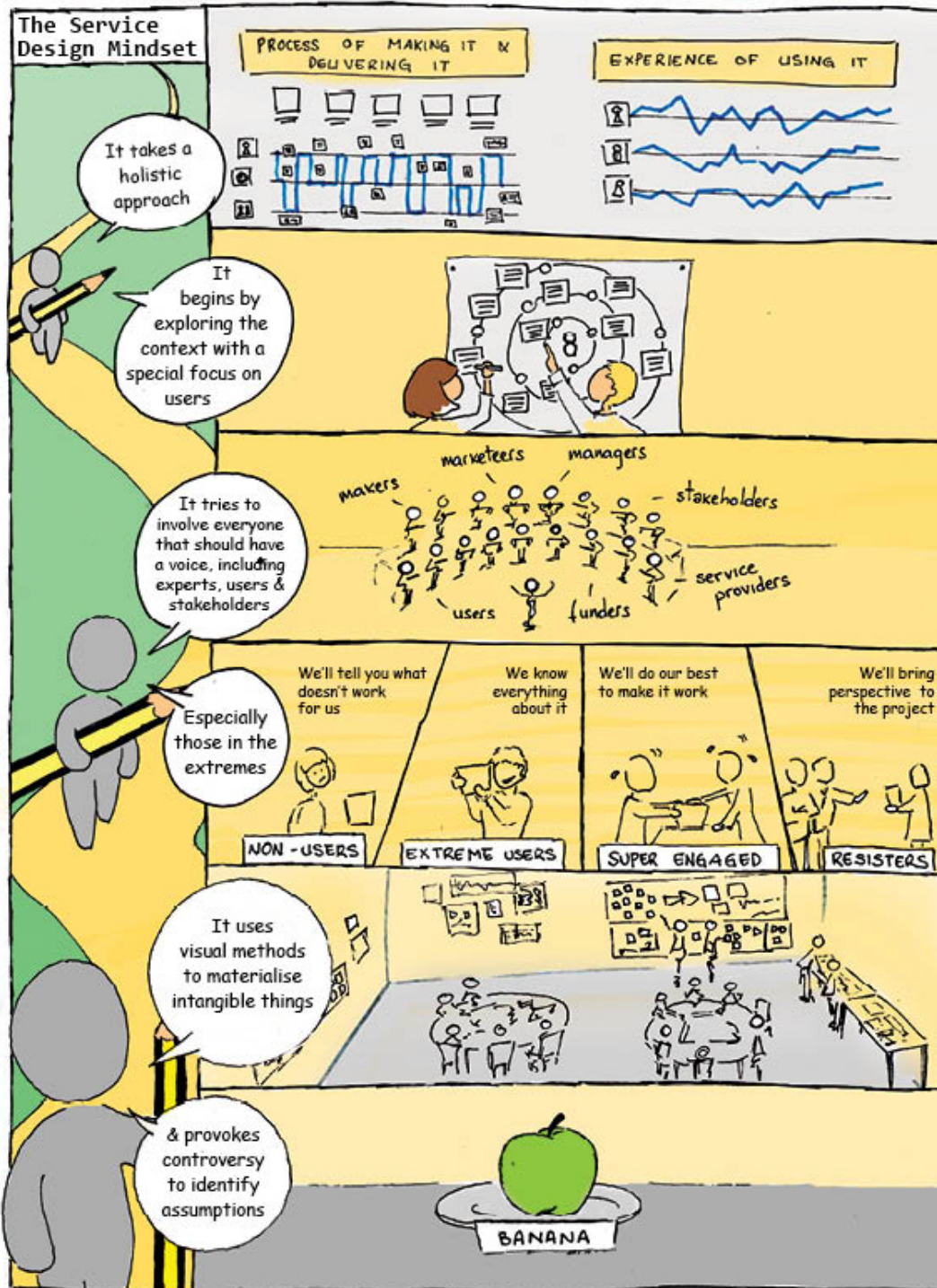


Figure 25 Comic communicating the researcher's approach to designing (Author, 2018)

Workshop with lead-analysts

This workshop had twenty participants, including the core team. The session had to be fast-paced, as the time was limited to an hour. The workshop had four activities (Figure 26):

- Creating Personas: Exploring users, both existing and intended
- Library: Examples of good practice from inside and outside the organisation, including tools for development and sources of inspiration.
- Challenges and opportunities in changing the ways in which statistical results are delivered
- Key content from the report and exploring alternative ways of communicating it

Some participants were surprised by the format of the session being ‘a lot more interactive’ than they had expected and actually ‘requiring them to think’ about the issues explored rather than being informative. The design activities used pushed them ‘out of [their] comfort zone’ and liberated them ‘from the inhibitions around needing to ‘do it right’ [their emphasis]. A participant reported ‘feeling surprised about the breadth of [his/her] outputs, as [he/she] was drawing and writing freely, and not being limited by criticism’ (workshop participants, self-reported questionnaires).

Building on workshop results, the researcher produced a digital resource for the team in the form of a website (Figure 27 to Figure 29). The website had a public and a password-protected area. Firstly the researcher created a publicly accessible library with the ‘inspirational and useful’ resources provided by workshop participants. The project area was password-protected and aimed to serve as a digital hub for stakeholders to keep up to date and contribute to the project. It included the rationale for the project, methodological approach, and results from research and design activities, such as the lead-analysts workshop.

The detail and breadth of the user-personas produced in the workshop (see Figure 28) surprised the team. In comparison with the official user profiling documents consulted for the project, these personas provided a much wider and clearer definition of the spectrum of the existing and intended users from both inside and outside the organisation.

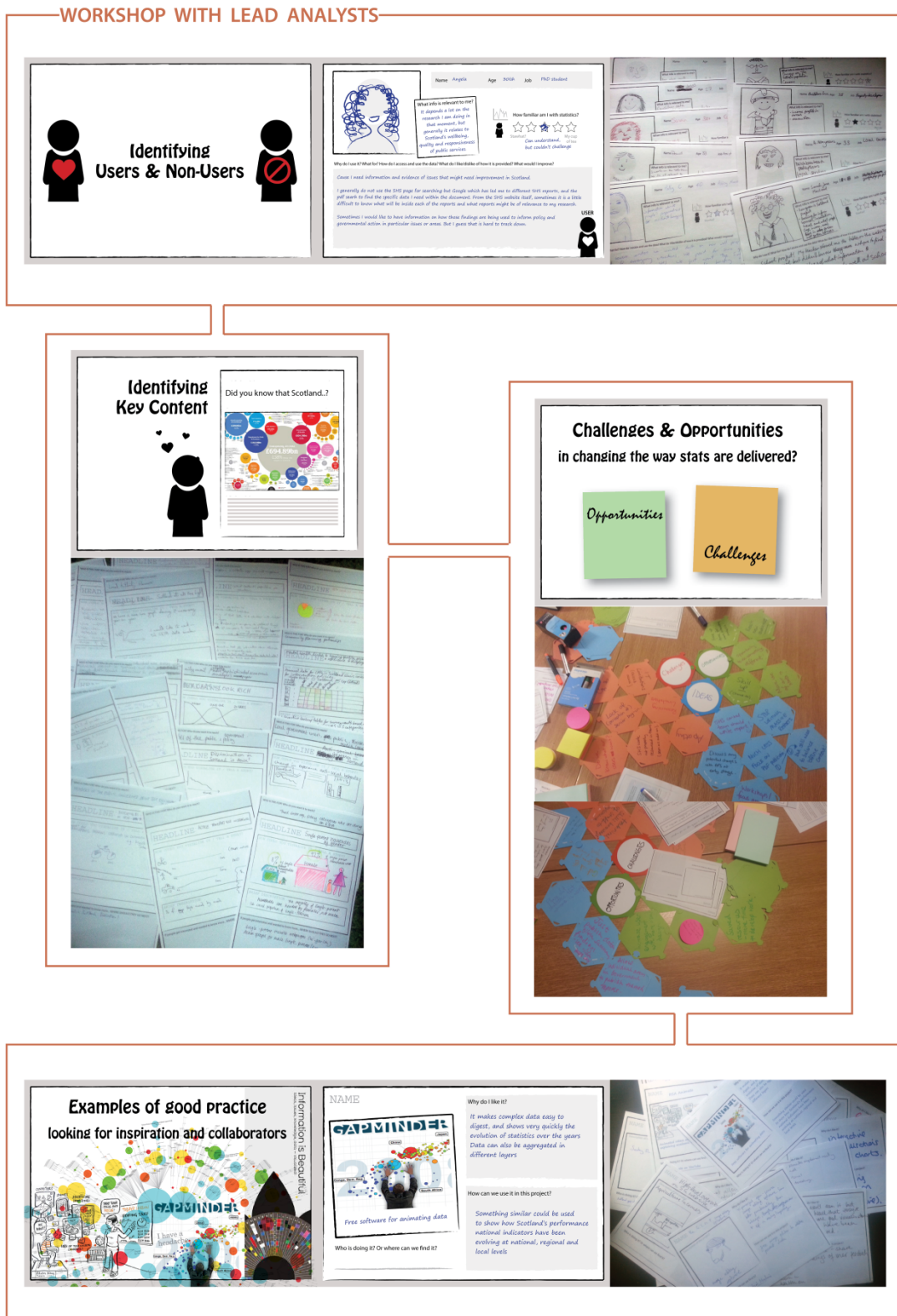


Figure 26 Workshop with lead-analysts (Author, 2018)

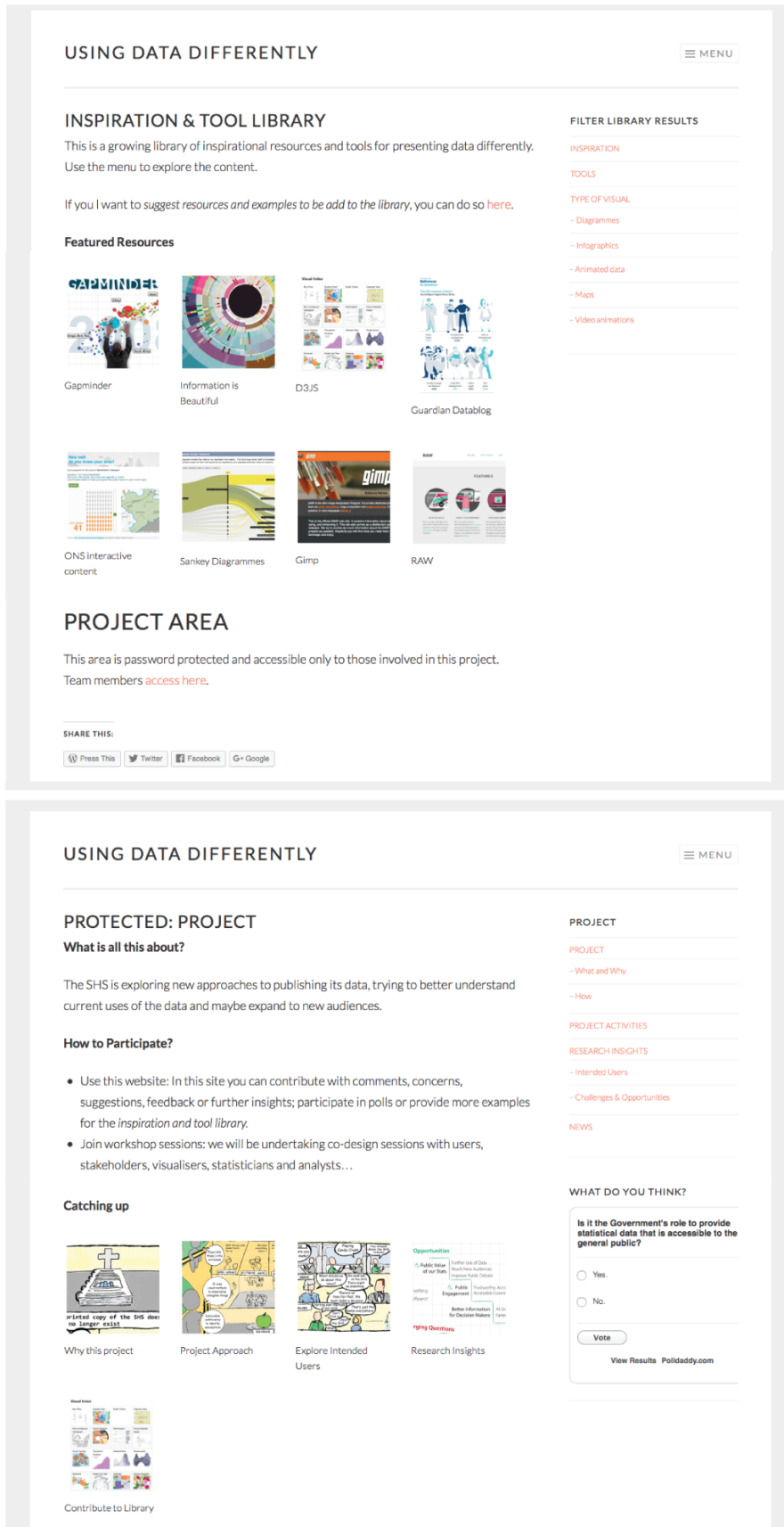


Figure 27 Website screenshots: (top) homepage, (bottom) protected area for project participants (Author, 2018)

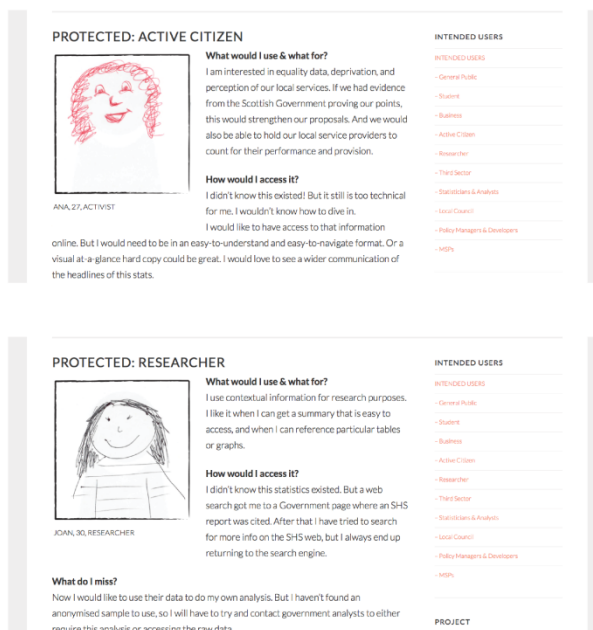
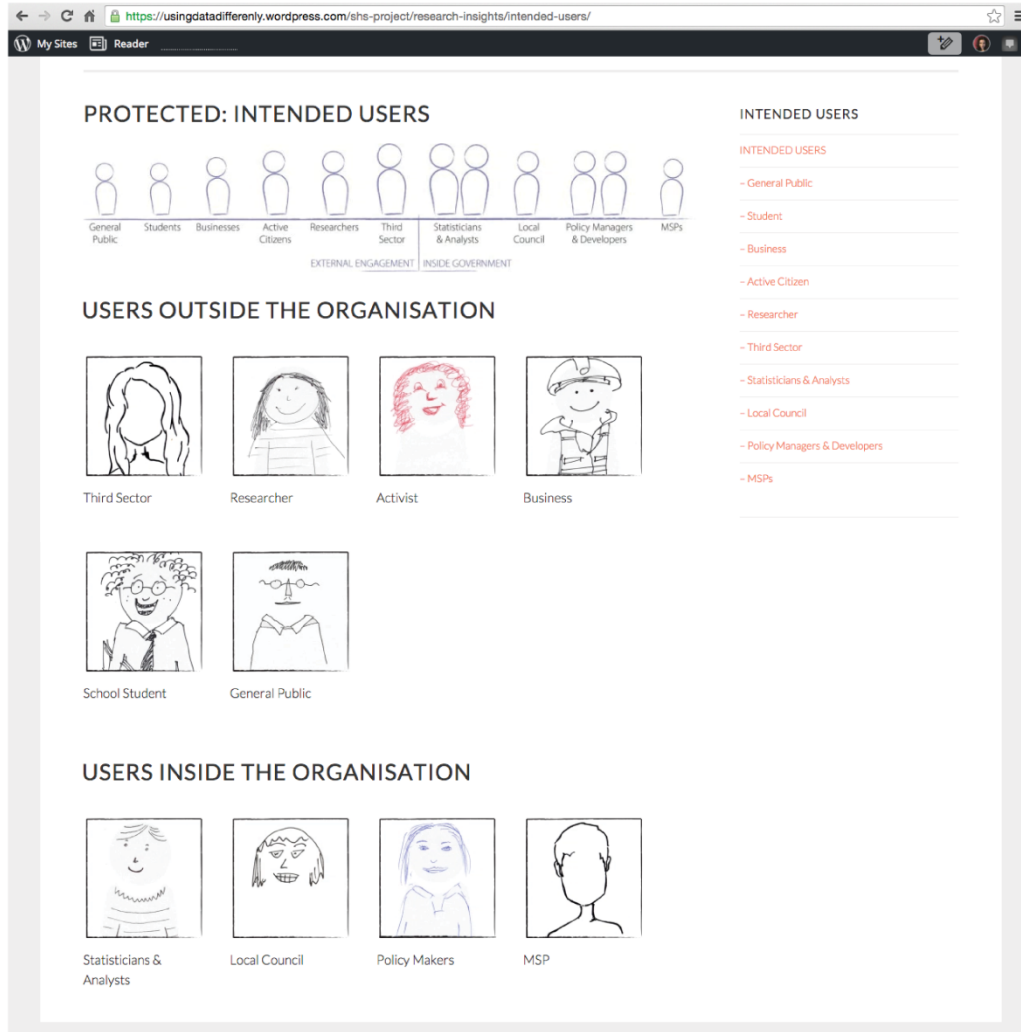


Figure 28 Website Screenshots: personas developed from workshop materials (Author, 2018)

USING DATA DIFFERENTLY

≡ MENU

PROTECTED: CHALLENGES AND OPPORTUNITIES

This is a summary of the insights gathered on the workshop held on the 9th of February.

If you find that issues discussed at your table or other **relevant insights are missing**, please use the **comment** boxes to add them. Insights from both, the workshop and this site will keep on informing the course of project.

PROJECT

PROJECT

- What and Why

- How

PROJECT ACTIVITIES

RESEARCH INSIGHTS

- Intended Users

- Challenges & Opportunities

NEWS

WHAT DO YOU THINK?

Is it the Government's role to provide statistical data that is accessible to the general public?

Yes.

No.

Vote

View Results Poldaddy.com

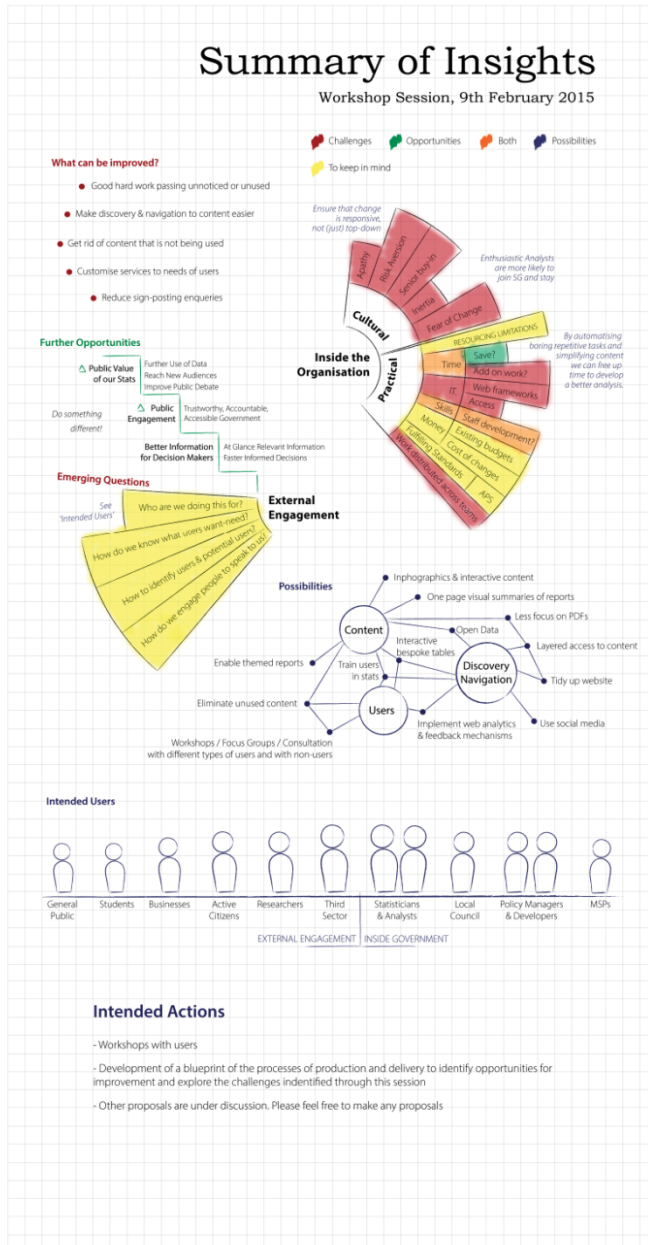


Figure 29 Website Screenshot: Summary of insights on 'challenges and opportunities' (Author, 2018)

Tensions around user research and involvement and project re-scoping

The question ‘*who are we doing this for?*’ was problematic throughout the project. In the activities aimed at exploring the product’s intended audiences (both with the core team and with the lead analysts) a great variety of users emerged, from policymakers to private companies, to the general public. Core team members and lead-analysts alike reported finding it difficult to distinguish between intended and actual users and emphasised the challenge of ‘accessing/identifying users’ (meetings and self-report questionnaires).

Using design research methods and involving users generated diverging views and feelings within the core team. Some lead-analysts also reported that they believed taking a more participatory approach, including both ‘people who consume as well as produce’ would have resulted in more ‘enlightening’ insights (self-report questionnaire). Views against a design approach were primarily concerned with time investment and the quality and reliability of outputs, particularly when compared to statistical data. It was agreed that the manager would recruit a group of users and the researcher would design activities to explore how data was being used (i.e. via the report, the raw data or through direct queries to the statistics department), what issues users encountered, and what would make their navigation through the content easier. It is worth noting that while the researcher referred to this encounter with users as a workshop, other team members referred to it as a focus group. This session with users got postponed until the project eventually got re-scoped. The main reasons for this were Anthony’s concerns regarding who to recruit, how design activities would play out and the usefulness of outputs. Instead of engaging with users face-to-face, the team sent a questionnaire to their database of users. Unfortunately, the team was unable to analyse the data gathered due to lack of time and capacity.

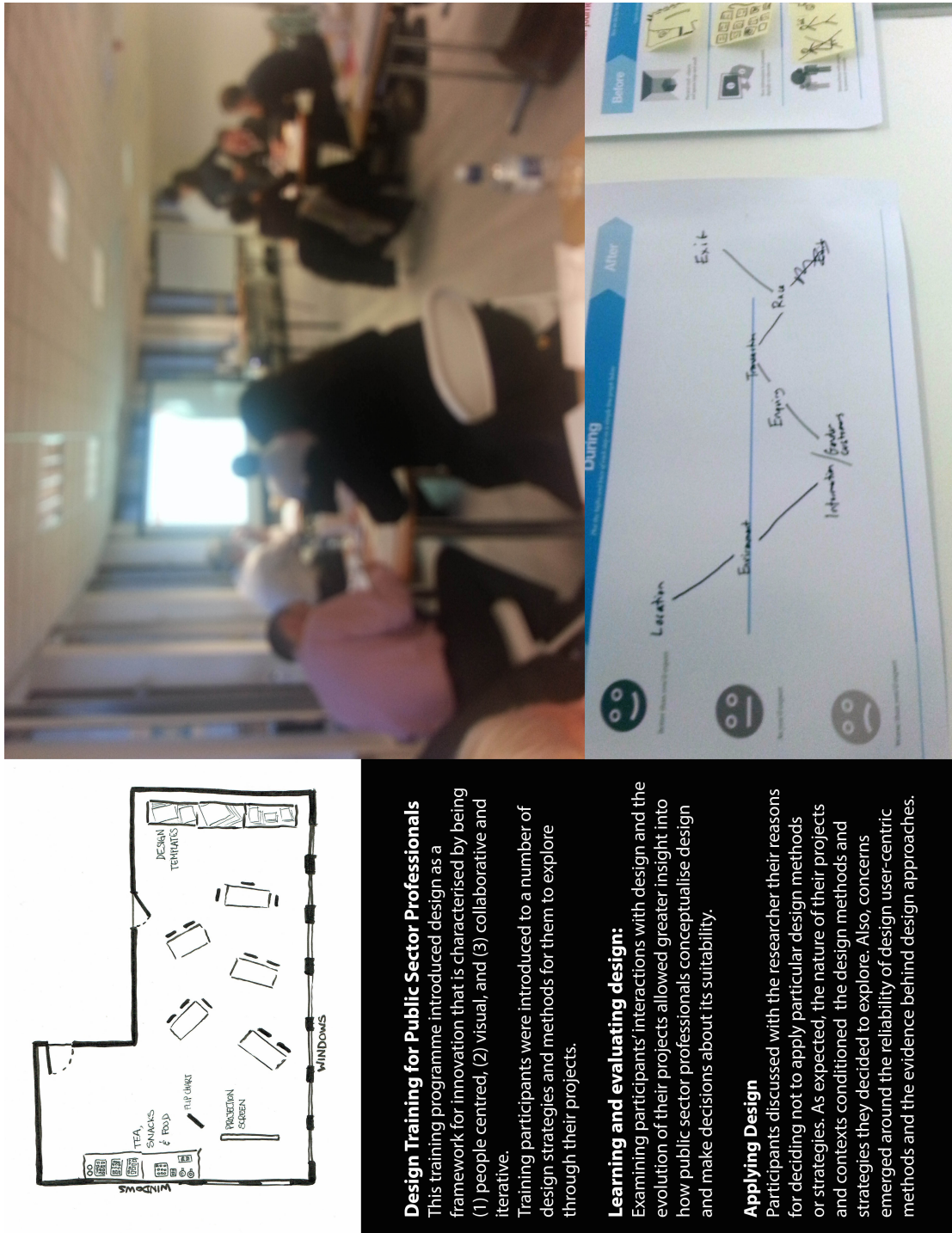
These events had a significant impact on the project, leading to its re-scoping, but also made an impression on the research. These insights helped the designer to conceptualise what kind of factors played a role in public sector professionals’ evaluation of the suitability of design methods and approaches in their work, supporting the development of the

theoretical framework. Despite the initial intention of taking a user-centred approach, this rejection of applying design user-centred methods could be due to a variety of reasons:

- Firstly, organisational pressures such as time and lack of capacity carried substantial weight in the team's decisions.
- Secondly, these debates regarding the usefulness of involving users embodied a perceptual and cultural clash between the designer/researcher and the project manager regarding the validity and contribution of both consulting users and using qualitative methods.
- Thirdly, due to the broadcasting nature of these services, public sector professionals struggled to identify who of the many intended users they were actually reaching.
- Fourthly, the rejection of design methods could also be a consequence of how the researcher communicated them, which might not have been effective in building their trust to explore the approach further.
- Finally, as noted in the project context section, there were conflicting project aims within the team from the start. Eventually, the project manager narrowed the scope of the changes to more immediate modifications to the existing publication's format based on his experience and expertise.

As discussed in the methodology chapter, these insights were combined with the relevant literature to develop the theoretical framework (3.1.2).

4.3 Main case study: design training programme



Design Training for Public Sector Professionals

This training programme introduced design as a framework for innovation that is characterised by being (1) people centred, (2) visual, and (3) collaborative and iterative.

Training participants were introduced to a number of design strategies and methods for them to explore through their projects.

Learning and evaluating design:

Examining participants' interactions with design and the evolution of their projects allowed greater insight into how public sector professionals conceptualise design and make decisions about its suitability.

Applying Design

Participants discussed with the researcher their reasons for deciding not to apply particular design methods or strategies. As expected, the nature of their projects and contexts conditioned the design methods and strategies they decided to explore. Also, concerns emerged around the reliability of design user-centric methods and the evidence behind design approaches.

Figure 30 Case study summary: design training for public sector professionals

4.3.1 Description of context and setting

The organisation providing the design training noted that, although design-led innovation approaches are ‘increasingly accepted as a means to innovate’ and ‘attracting wider interest’, their application in the public sector is still ‘happening in pockets’ (training presentation). The aim of the training programme was ‘to help deliver more effective and efficient services that are people-centred – through embedding best practice design thinking, skills and techniques’ (training slides, Day 1).

This training programme is one of the many initiatives promoted by this organisation to build design awareness, demand and capacity in the public sector. The training programme consists of a cohort of public sector organisations working in the same region who are provided with five training sessions within 90 days. Design facilitators provide ‘practical guidance and support to build capability’ among participants, supporting them in ‘adopting and applying design thinking’ in their projects. The programme follows a project-based model where participants have the opportunity to use the design techniques learnt during the training course on their respective projects.

The Edinburgh cohort of this design training programme was the fourth of this kind delivered in the UK and the first in Scotland. This specific cohort was sponsored by one of the largest consultancy and outsourcing firms for the UK public sector, which was interested in assessing the success of the programme and possibly replicating its format. Training sessions took place in Edinburgh, but three of the teams travelled from other counties. The L-shaped room was spacious, luminous and well equipped, providing plenty of wall and windowed space for hanging things up. It had a projection screen and projector, five tables with chairs set up, and a long table at the back of the room with printed templates of design tools and brochures of the programme (Figure 31).

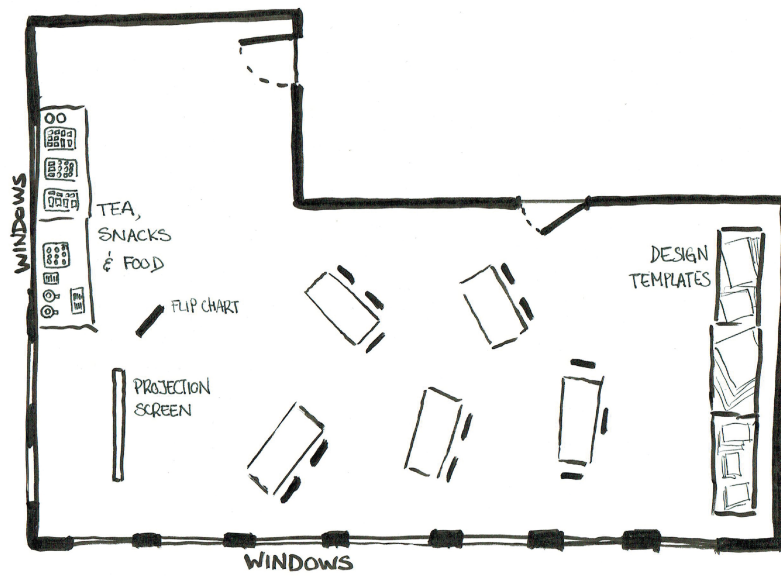


Figure 31 Training space

4.3.2 Participating projects

The Edinburgh cohort was comprised of four public sector organisations: three local Councils and a Scotland-wide improvement agency.

- **Internal Services:** This project aimed at redesigning an internal system managing internal resources shared across the Council. The project arose from a Council-wide improvement scheme aimed at involving employees in the development of organisational processes and internal services. Issues with the existing system had been pointed out by a member of staff, as a user of the internal service.
- **Improvement Project:** As a Scotland-wide improvement agency, their role was to ensure the quality of the services provided by all Scottish actors in their sector, with 'sector' referring to a significant policy area such as healthcare, transport, education, energy or employment. The project, triggered by changes in policy, assessed their 'evaluation and improvement framework', which consisted of procedures for inspection and evaluation, recommendations and methods for self-improvement.
- **Vulnerable Users:** This project was concerned with a service the Council provided to vulnerable users, the sustainability of which was threatened due to decreasing resources. The service was delivered through six locations run by different organisations from both the public and third sector, including the Council. In need of reducing costs, the Council was considering how to deliver some of the elements they outsourced to private companies in-house. This team included one person from inside the Council and two stakeholders from partnering organisations.
- **Service Integration:** This project was concerned with the integration of three service areas that had traditionally operated independently. These organisations provided services to users with complex needs. Changes in policy had triggered the project, aimed at identifying gaps between services and achieving efficiency savings by running operations more efficiently and at a lower cost. But the most pressing reason was that, due to decreasing resources, two of the services were being relocated into the same building.

4.3.3 The training

This design programme is delivered over a 90-day period. It starts with a 2-day workshop and a networking dinner with design practitioners and continues with three other sessions on days 30, 60 and 90. The primary objective of this programme is to grow design awareness and start building design capacity within the public sector, with the aim to increase demand for design approaches in the public sector. Participating organisations would benefit from increasing:

- Ability to reframe challenges
- Partnership and collaboration across Councils/organisations
- Knowledge and awareness of networks and support programmes
- Measurement and evaluation

The training programme combined teaching with the development of participants' projects. Teaching involved presentations of design concepts and methods, examples of their applications from case studies, group activities and discussions, and facilitators advising participants on how to apply design to their contexts and move their projects forward. The first training session was the one that involved more teaching from designers while following days were more focused on developing participants' projects.

Participants had access to a digital forum space on KnowledgeHub. This digital space aimed to promote communication and exchange within the cohort and with other cohorts. This digital hub included a library of training materials such as presentation slides and training schedule for participants to download. Design facilitators also encouraged and expected participants to blog about their project's progress and experiences in between training sessions. However, it is worth noting that all teams complained about its interface and struggled with navigation. Eventually, only two blog entries were compiled.

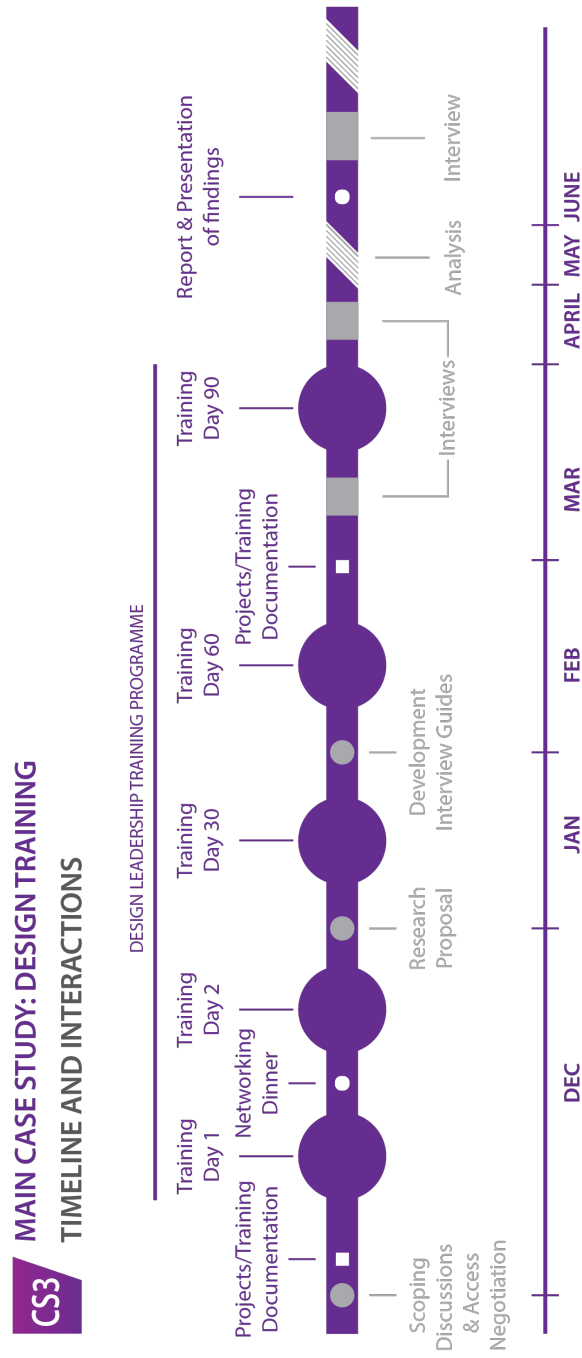


Figure 32 Main case study overview: training timeline and research activities

Design basics and its value in public sector

Design's value for the public sector was pitched as contributing to the development of the Government's priorities: driving growth, reducing the deficit and improving service delivery, now at a lower cost due to financial cuts. Facilitators argued that 'design is well written, well developed and well evidenced, and free because it is a methodology' (observations, Day 1). But it was also introduced as part of a wider toolkit for public sector innovation. The training course highlighted two reports on design in the public sector as suggested reading: *Design for Public Good* (Design Council, 2013) and *Restarting Britain 2* (Design Commission, 2013).

Facilitators used participants' diverse and vague notions of design to introduce diverging perceptions of design, beginning with its most tangible applications progressing towards the conception of design as a framework for innovation. Facilitators emphasised that 'design can be done by non-designers', and that the 'design-led approach is out of traditional design processes'. Design as a framework for innovation was introduced through the Design Council's double diamond (Figure 33), emphasising 'the need for spending more time on the first half of the double diamond', and design's guiding principles:

- Being people centred
- Being visual
- Being collaborative and iterative

The training was framed as design thinking, although design facilitators often used this term interchangeably with service design and co-design. Based on participants' stories of their 'good and bad' service experiences, facilitators introduced the concept of service design as: 'A service is made up of a number of components that can all be influenced by design'. The training emphasised the holistic nature of the approach by introducing a version of IDEO's human-centred design model (Brownt, 2009, p.19) – which has desirability (human), feasibility (technology), viability (business) as the main innovation factors – that read: what people need, what is financially sustainable, what is technically possible (Figure 33b,c).

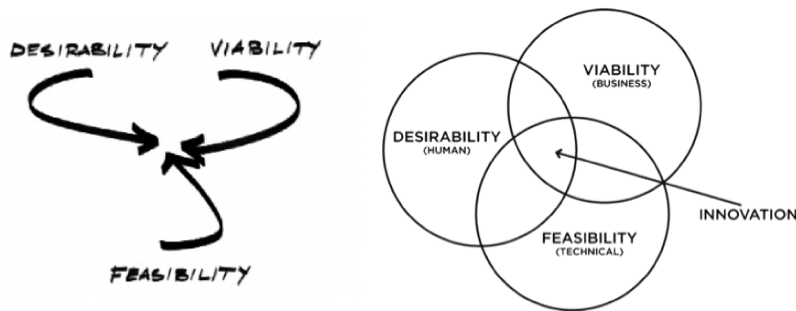
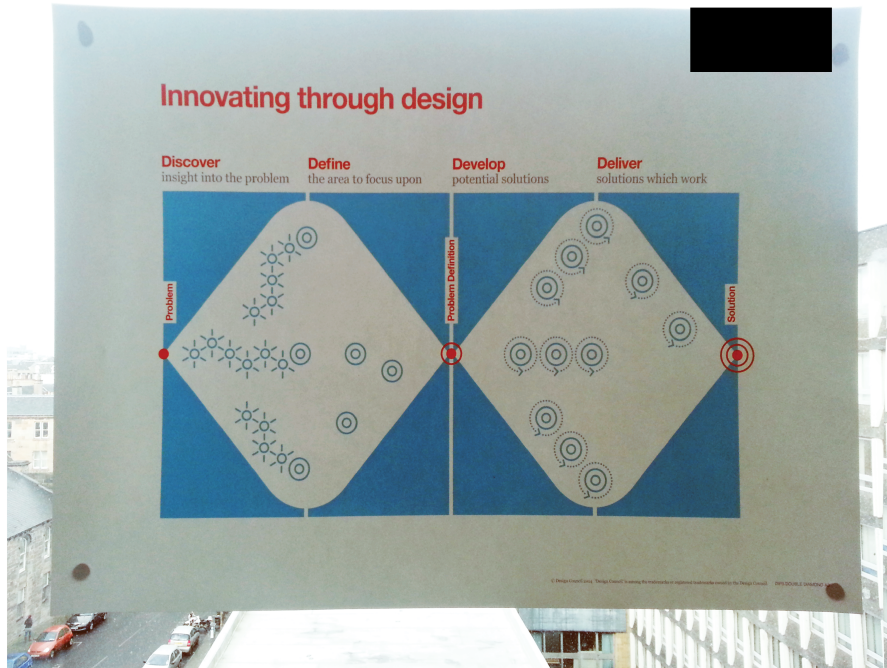


Figure 33 Training Materials 1 - from top to bottom: (a) Design Council's double diamond (b) IDEO's desirability, viability feasibility (Brown, 2009, p.19) (c) venn diagram (ideou.com/pages/design-thinking)

Design methods and tools

Ethnography: The training course wanted to communicate the value of observational methods for inspiring new approaches to problem-solving and improving the users' experiences. Designers emphasised the increased value of consulting users 'on the edges' (Figure 34), those that do not resemble the average user. Based on a variety of examples and activities, facilitators provided an introduction to designers' uses of ethnography.

They introduced auto-ethnography using IDEO's example (Suri, 2003, fig.4) where the designer plays the role of a patient in a hospital emergency room (Figure 34). Activities

included observing their colleagues eating yogurt (Burns in Broadley, 2013, p.8), and going on a 'service safari' to do auto-ethnography. Participants were instructed to go to a betting, banking or shopping service and look for problems, opportunities, surprises or insights, unmet needs and recurring themes (POINT). After the first two days of training, participants were given as homework the assignment of 'interviewing at least one user' or using any other ethnographic method that suited best their projects. Facilitators encouraged participants to 'get out there and speak to [their] users'.



Figure 34 Training materials 2 - from top to bottom and left to right: (a) IDEO's example of experiential design research (Suri, 2003, fig.4); (b) example of user journey from live|work (training slides); (c) classification of users (notes from training); and (d) key characteristics of prototyping (notes from training)

Visualisation and User Journeys: The training emphasised two things. Firstly, facilitators pointed out that artistic skills are not required for using visual methods. To illustrate this, they showed representations of a horse with different degrees of fidelity, from a photograph to a doodle. Secondly, facilitators emphasised that visual methods enhance communication, understanding and collaboration across stakeholders. Facilitators advised participants to designate a space in their offices where they could hang up their work, to help them to see the project holistically and foster discussion among them and with other colleagues. Some of the tools showed in the training slides were not discussed in detail by facilitators, such as personas and prompt cards.

Iteration and Prototyping: Prototyping was defined as the way in which designers manage risk by trying things out quickly and cheaply. And it has to be done ‘early, ugly and often’ (Figure 34). Examples of prototyping included:

- Products: particularly highlighting Dyson vacuum cleaners;
- Communications: e.g. website mock-ups showing different degrees of detail and through communication design materials such as posters
- Spaces: through plans and cardboard mock-ups, both in miniature and full scale.
- Services: roleplaying interactions in both mocked-up spaces and real contexts.

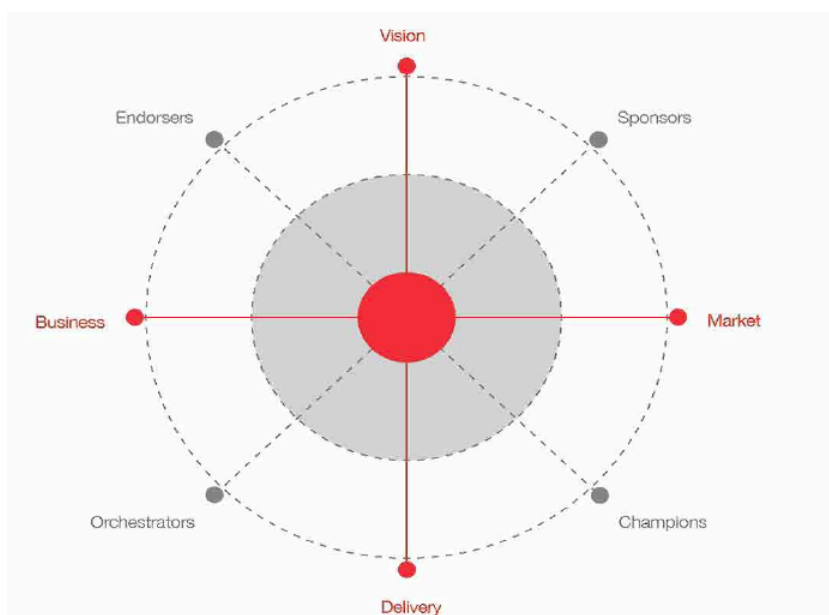


Figure 35 Stakeholder map (screenshot from training slides)

Tools: Participants were also provided other tools to develop their projects, some of which they recognised from the field of management.

- Project Poster template which enquired: project name; problem statement; key stakeholders; the big idea; how it works (illustrating features and benefits); potential barriers; required research, prototyping and testing; how success will be measured; and key milestones.
- Stakeholder Map (Figure 35), which included four areas – vision, market, delivery, and business – and four associated types of stakeholders – sponsors, champions, orchestrators, endorsers.
- Customer journeys before, during and after the service were explored through two templates, one for plotting emotions over time, and the other one for plotting interactions with objects and spaces, face-to-face, and digital interactions.
- Project Roadmap, which had a black grid with space for the timeline at the bottom and three rows for participants to explore different layers of activities.
- Logic Modelling template that enquired: needs, inputs, activities, outputs, outcomes, impact, rationale and assumptions.
- Five Areas of Impact framework (Figure 36), which explores internal and external aspects of service delivery: (1) service touchpoints and environments; (2) branding, awareness and perception; (3) user and partners; (4) roles and rules; and (5) policy and strategy.

Visiting designers also introduced other tools and methods, such as different versions of the design process or personas. One of the external presentations lectured participants on how to evaluate their projects and the impact of design, while another explained how participants could use web analytics and statistics to gain user-insight.

As participants engaged in using design tools, facilitators wandered from table to table, making questions and giving advice to the teams. These questions and suggestions influenced participants' ideas and the direction of their projects.

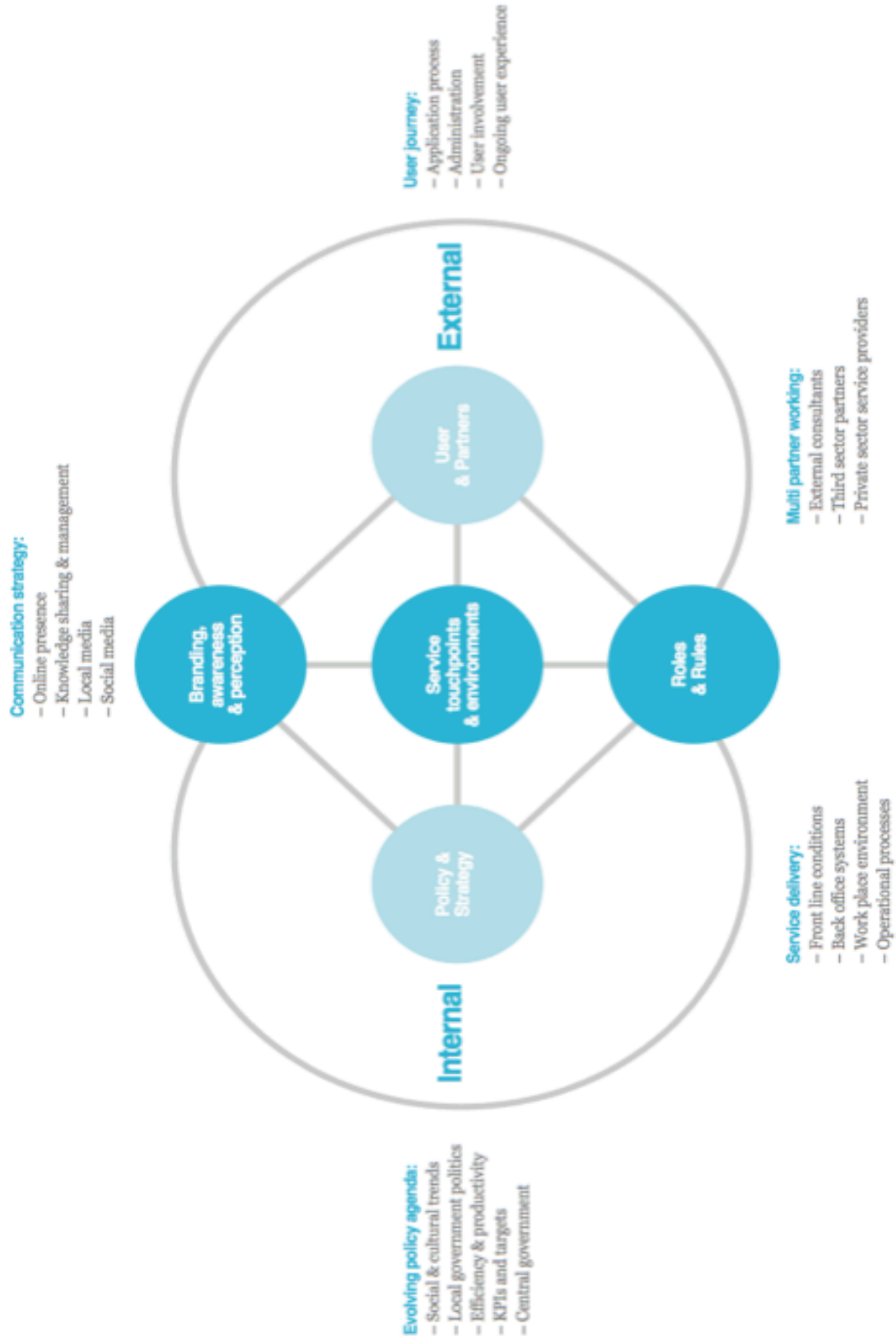


Figure 36 five areas of impact framework (screenshot from training slides)

4.4 Concluding remarks

This chapter has provided details of the contexts in which the research was undertaken, of the six design-led projects studied and of public sector professionals' interactions with design practice and practitioners. In order to describe these interactions, the practice-based case studies have focused on presenting the negotiations between public sector professionals and designers as they scoped the projects and decided which design strategies and methods to apply, as well as the design activities delivered by the designers. On the other hand, the training-based case study has focused on the content of the training including the themes explored, methods introduced, activities proposed and how design-led innovation approaches were communicated.

The methodology chapter noted some of the differences between case studies in relation to data quality (p.131), such as the researcher's membership and designers' roles; or the nature of the cases and the design learning they implied. Now that the situations and interactions studied have been presented and before moving into describing the research results, it is worth taking the time to note the differences between case studies and what each of them brought to the discussion, summarised in the table below.

The negotiations observed at the procurement stages of both the scoping and immersive case studies drew attention to the impact of public sector professionals' pre-conceptions and expectations of design on their decisions regarding the role of design and thus conditioning its potential value. The key difference between the scoping and immersive case studies lies in the nature of the projects, the purpose of design procurement and design's role. In the scoping case study, design was procured at post-implementation stages of organisational change, and its role was relegated to facilitation and visualisation of those changes. In the immersive case study, however, design was procured at the early stages of the process, and design took a more active role in the definition of the project's process and strategy. This continued engagement extended decision-making beyond procurement, and expanded the scope of the research to consider public sector professionals' decisions on the application of design strategies and methods as part of an iterative evaluation process (p. 24).

Table 9 Differences across case studies

	SCOPING CASE STUDY	IMMERSIVE CASE STUDY	MAIN CASE STUDY
Units included	1 project	1 project	4 projects
Research context	Post-implementation stages of top-down organisational change	Innovation and digitisation of statistical publications	Design training for public sector professionals
Reasons for procuring design	<ul style="list-style-type: none"> - Employee resistance and disengagement after the top-down restructuration - Lack of clarity on the merits of new departments 	<ul style="list-style-type: none"> - Desire to take a user-centred approach to explore alternative ways of reaching audiences - The need to develop (digital) prototypes 	<p>P1. To explore, with stakeholders, how to sustain and improve services for vulnerable users. Externalisation of these services was no longer financially sustainable and needed to be provided in-house</p> <p>P2. Integrating services distributed across partnering organisations to reduce costs and improve users' experiences</p> <p>P3. Redesigning an internal service system to improve employees accessibility to organisational resources</p> <p>P4. Updating a sector-wide self-evaluation framework according to new policy guidelines</p>
Researcher's Role	Practice-based: Participant as observer		Ethnographic case: Observer as participant
Mode of incorporation	Consultation	Collaboration	Training
Role of Designer(s)	Working with teams to visualise their responsibilities and identify gaps and overlaps across departments	Advise and support the team in taking a user-centred approach to understand usage and develop ideas and prototypes	Transfer design knowledge and skills to public sector professionals
Interactions observed	Procurement negotiations, project meetings, workshops	Procurement negotiations, project meetings, workshops	Training sessions; presentations and discussions led by design facilitators, teams' discussions as they undertook design activities

These two first cases shared their practice-based nature, and allowed the researcher to experience the contributions and challenges of practicing design in the public sector. This insider perspective contrasts with the main case study, where the researcher was only involved as an observer. Furthermore, as a training programme, the role of designers also changed from undertaking the design practice to transferring design knowledge and skills to public sector professionals. These two differences bring some nuances to the data. As noted in the methodology chapter (p.117), the researcher's membership has an impact on the data gathered and its quality. While the practice-based studies entailed a close relationship between the researcher and the context, they also exposed participants to the idiosyncrasies of the researcher's approach to design practice (p.50). In contrast, the main case allowed the simultaneous study of public sector professionals' interactions, experiences, and decision-making processes across four different projects; but from a greater distance. Designers' shift in role from practitioners to mentors opened up questions around design communication and capacity building. These dimensions were implicit in the practice-based studies, as designers had to introduce to public sector professionals to alternative design strategies and methods that could be used in their projects. Nonetheless, the more systematic approach to capacity building of the main case revealed more clearly their impact on decision-making.

Collectively, the three case studies offer an examination of public sector professionals' interactions with design in a variety of forms and contexts. While some of these differences do not allow for direct comparison between cases due to the many factors at play, this diversity strengthens the validity of the characteristics shared across different situations. The wide range of interactions and contexts studied also allowed reconstructing how decision-making plays out in different situations and stages of the learning process.

The next chapter presents the results of the research, and follows public sector professionals' journeys from awareness to sustained uptake. This account portrays how public sector professionals' perceptions of design evolve as they become knowledgeable of its methods and processes, as well as the challenges they experienced in the learning, evaluation, and application of design approaches in their work.

Chapter 5

RESEARCH FINDINGS

PUBLIC SECTOR PROFESSIONALS' EVALUATION OF DESIGN-LED INNOVATION APPROACHES

The previous chapter presented the projects and interactions studied through the three case studies undertaken. This chapter is concerned with presenting the relevant evidence and articulating research findings.

Before moving into the detail and in order to support reading of this and the next chapters, this chapter begins with a contextualisation section. This includes: (1) a description of how different research outputs relate to different analytical stages and activities (see pages 189 and 191 for an overview); (2) a summary of key research findings, conclusions and contributions (pages 193 and 194); (3) an outline of the chapters' structure, how the evidence is presented and how data sources have been referenced; and (4) a summary of research participants.

Contextualising findings: from analysis of case studies to research outputs

To understand *how public sector professionals evaluate the application of design approaches, methods and strategies in their work, and what shapes their views and decisions on design's suitability*; this research sought to reconstruct from empirical data their learning and evaluation process and the broader ecosystem shaping their decisions.

These conceptualisations were initially developed to guide data gathering by combining empirical insights and the relevant literature, and continued to be refined. As an overview, the analysis on how public sector professionals' evaluate design was an inductive and iterative process, in which the researcher conceptualised the evaluation process and the social layers and factors that had an impact on public sector professionals' decisions, combining empirical insights and the literature. Early stages of these conceptualisations were introduced in the theoretical framework. The final iterations of these conceptualisations are

introduced in the next chapter to answer research questions, as they represent *public sector professionals' learning and evaluation journey* (process) and *the public sector's evaluation ecosystem* (influencing factors). Findings from this analysis emphasised the relevance of design communication in shaping public sector professionals' understanding and trust in design innovation approaches, methods and strategies.

To examine the research insights into communication more closely, a dialogical analysis was undertaken, which contrasted how design was communicated, and in turn, how public sector professionals interpreted and reacted to those different descriptions and representations of design. This dialogical analysis was practice-based, as to explore these dialogues between designers and public sector professionals, the researcher engaged in developing videos introducing design to public sector professionals. This exploration included activities for the researcher to immerse herself in both designers and public sector professionals' perspectives and insights from the literature. Detail on these can be found in Appendix . The main research output from this dialogical analysis was the articulation of key research findings. Also, as part of this practice-based exploration, the researcher developed *the procurement ladder*. This post-empirical development emerged in response to a key research finding that identified the need for defining design and designers' roles in the public sector to support procurement. This exploration sought an alternative way of explaining how design approaches fit in public sector work and has a more speculative nature. Although its development included empirical insights, this was not the focus of data gathering. This exploration built on existing literature, empirical insights and the researcher's understanding of the field, as further data gathering was considered outside the scope of this research. Nonetheless, *the procurement ladder* proposed expands and contributes to current representations of design's incorporation in public sector contexts, and aids discussion around design and designers' relationships with the public sector and how these can be effectively communicated to public sector professionals, and it is included in the discussion of key research findings.

Table 10 Summary of research outputs

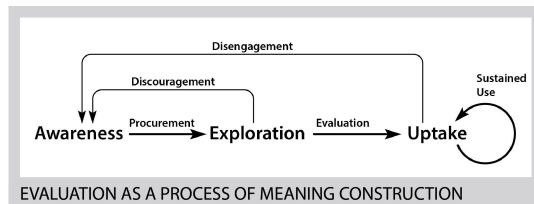
RESEARCH QUESTIONS

RQ1. How do public sector professionals evaluate the application of design approaches, strategies and methods in their work?

RQ2. What shapes public sector professionals' decisions on the suitability design approaches, strategies and methods in their work?

REFINEMENT OF EMPIRICALLY DEVELOPED CONCEPTUALISATIONS IN RESPONSE TO QUESTIONS

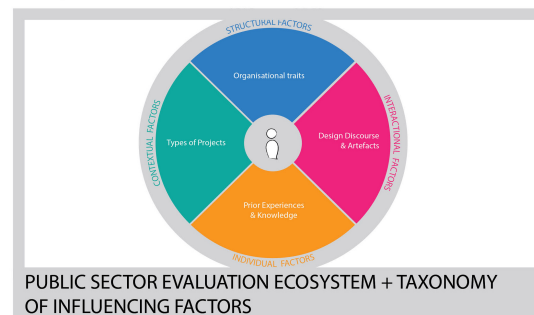
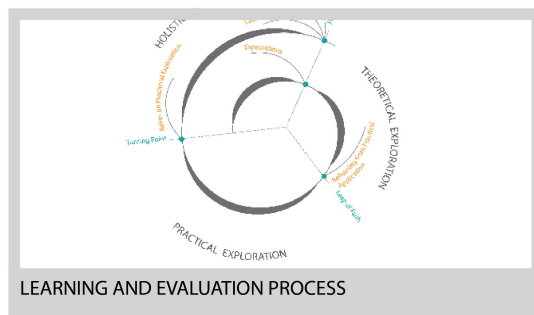
Theoretical Framework



Social processes studied	
Emergent Meanings	Epistemological (and potentially value) emergence of public sector professionals' conceptions of design on which they judge its suitability to their work
Potential Influencing Factors	Individual: public sector professionals' prior experiences working in the public sector and their knowledge of design Interactional or Situational: design conversations, interactional structures, physical environments... Cultural: Types of projects, relationships with stakeholders and users... Organisational: Organisational or departmental culture, area of public sector... Societal: Governmental standards, policy guidelines, wider socio-political context...

SOCIAL LAYERS INFLUENCING MEANING CONSTRUCTION

Answer to Research Questions



KEY RESEARCH FINDINGS AND ATTACHED PROPOSITIONS

- F1 Need to develop representations of design that relate to public sector professionals' realities
 - P1 Strategies for communicating design in context
- F2 Need to develop representations of design that establish clearly how design-led innovation approaches compare to other methods and methodologies with which public sector professionals are familiar
 - P2 Future research: design in relation to other fields
- F3 Need to develop more concrete definitions of the roles that design and designers can play in public sector contexts
 - P3a The procurement ladder
 - P3b Future Research: design procurement in the public sector
- F4 Contextual complexities, types of projects and organisational traits conditioned public sector professionals' learning experiences and understanding of design-led innovation approaches, methods and strategies
 - P4 Strategies for navigating organisational and contextual barriers to enhance learning



CONCLUSIONS

- Designers need to acknowledge and harness their share of responsibility for public sector professionals' uptake of design-led innovation approaches, strategies and methods.
- Design discourse and capacity building strategies need to be tailored to the specific knowledge of public sector professionals and the needs and complexities of working in the public sector in order to support learning and evaluation and build the approach's comprehensibility and credibility.
- Empirical research into public sector professionals' interactions with design practice and practitioners can offer insights beyond design's contribution that are useful for enhancing the uptake of design innovation approaches in the public sector.

In relation to the different analytical stages and their approaches (Figure 37), the first analytical stage, which included the scoping and conceptualising research phases, served to develop research questions and their attached conceptualisations on evaluation process and influencing factors. To do so, the researcher built on the literature review and the iterative and simultaneous analysis of empirical data through direct interpretation, which harnesses the researcher's design knowledge and sensitivity.

The refinement of these conceptualisations began with the second analytical stage. This included the main case study and was aimed at fragmenting the data and identifying patterns by comparing across the four projects included in the case. This analysis followed a grounded approach to coding, which adapted analytical methods from constructivist grounded theory to the purposes of the analysis. For detail on this analysis see Appendix H. This analysis resulted in a wide range of interconnected categories, codes and insights concerning public sector professionals' views, decisions and actions regarding the application of design in their contexts, and the processes and factors shaping those decisions. These were then contrasted with insights from the scoping and immersive case studies, triangulating insights across all six projects. A subset of these codes and categories clustered the factors influencing public sector professionals' uptake of design approaches, methods and strategies, which is presented with *the public sector evaluation ecosystem* as the resulting taxonomy of influencing factors.

However, at this stage the analysis had not reached clear conclusions. To move the enquiry from reflection on specific events on to a more abstract conceptualisation of findings, a third analytical stage utilising more organic analytical methods concentrated in making sense of the data gathered. Detail on this analysis can be found Appendix I.

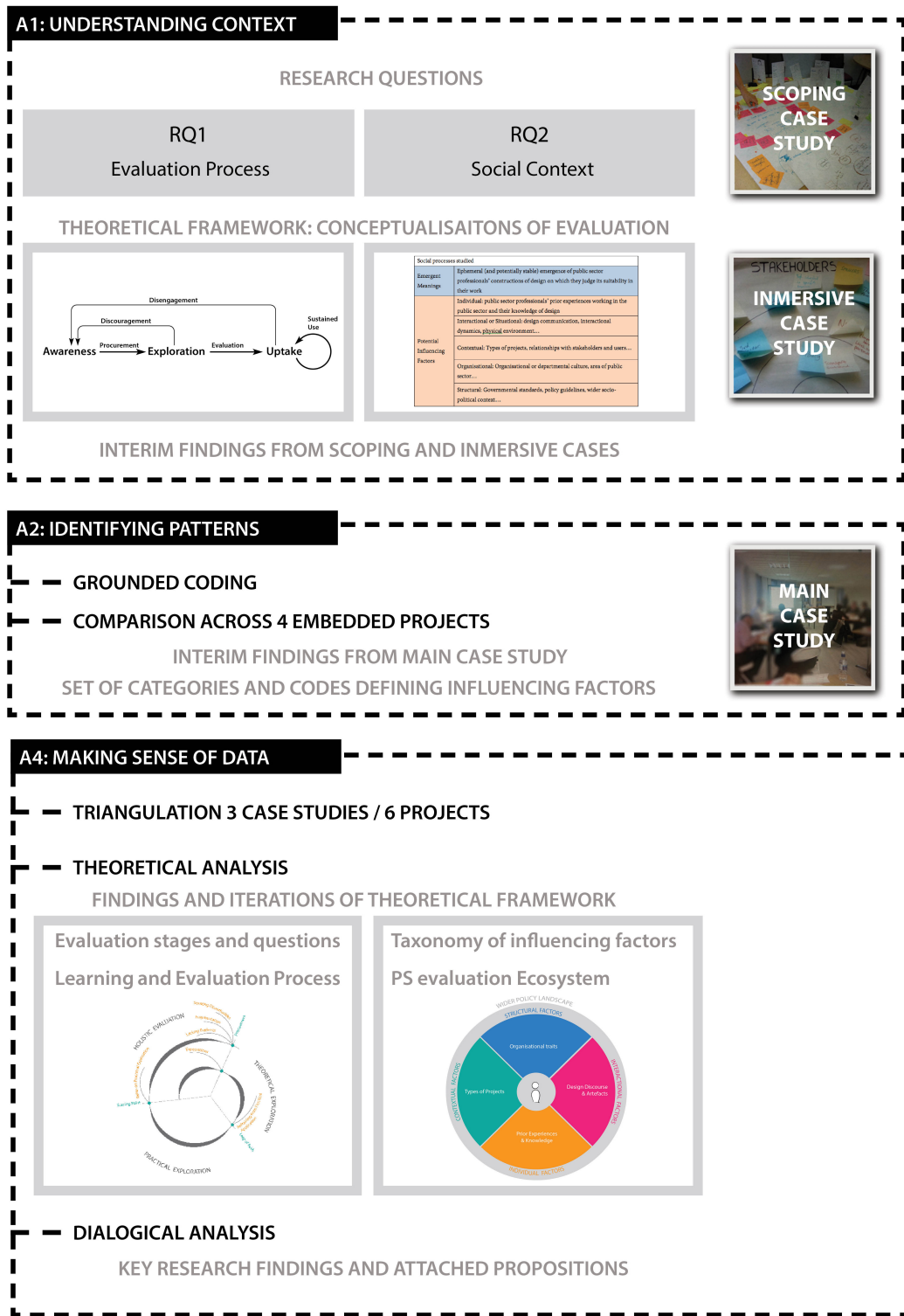


Figure 37 Iteration of the theoretical framework and research outputs in relation to the different analytical stages

A theoretical analysis, primarily through clustering and writing, sought to answer research questions and refine the research conceptualisations of evaluation process and influencing factors. This helped reconstructing *public sector professionals' learning and evaluation processes* and identifying critical evaluative stages and questions. *The public sector evaluation ecosystem* also explored the relationships between different clusters of influencing factors. This last representation highlighted the relevance of designers' interactions through rhetoric and artefacts on public sector professionals' decisions about design's suitability. This insight led to the practice-based dialogical analysis already described that resulted in the articulation of *key research findings* and the post-empirical development of *procurement ladder*.

These key research findings identify gaps in design communication and capacity building and opportunities for enhancing public sector professionals' understanding, evaluation and uptake of design innovation practices in their work. Key research findings and contributions are summarised in pages 193 and 194.

As mentioned in the introduction chapter and scope of context, this research did not seek to understand were public sector professionals' perceived design's contribution but to understand how they evaluated its suitability. However, examining public sector professionals' experiences using design, this research identifies design strategies that were not affected by inhibiting evaluative factors, such as working visually. These insights have not been included in this chapter because they go beyond the scope of the research. But they are included in Appendix J, due to their contribution to contemporary research in evidencing design's value (as discussed in section 2.3.2).

Table 11 Summary of findings

GAPS IN DESIGN COMMUNICATION

This research identifies descriptions and representations of design approaches, strategies and methods that were ineffective in building the comprehensibility and credibility of the approach for public sector professionals; as well as gaps in how design is evidenced and communicated for public sector professionals to evaluate the suitability of the approach.

F1 Need to develop representations of design that relate to public sector professionals' realities

Some descriptions and representations of design approaches, strategies and methods failed to support public sector professionals in (a) understanding design methods and strategies, (b) understanding how to apply them into their projects and contexts, (c) evaluating design methods or (d), undermined their credibility. Generalist claims of value, the use of language and exemplars from other areas of application, or the omission of the challenges and complexities of working in the public sector, were found ineffective in building comprehensibility and credibility.

F2 Need to communicate design strategies and methods in relation to other fields and methodologies

Public sector professionals conceptualise and evaluate design through association and contrast with other approaches and methods they are familiar with.

- In terms of learning, public sector professionals' associations with other methods and approaches can generate inaccurate expectations or conceptualisations, confusion and mistrust. But this knowledge of other methods can also be harnessed to clarify the similarities and differences of design approaches with other methodologies.
- In terms of evaluation, public sector professionals expected explicit comparisons between design-led innovation approaches and other improvement and innovation methodologies already established in the public sector.

F3 Need to define the roles that design and designers can play in public sector contexts

Some of public sector professionals' preconceptions and expectations regarding design and designers' roles and contributions can negatively affect the procurement of design-led innovation approaches
Public sector professionals struggled to spot opportunities for future application and define concretely the situations in which they could apply design approaches.

ENVIRONMENTAL CONSTRAINTS

F4 Need to navigate organisational and contextual factors to enhance learning

Contextual complexities, types of projects and organisational traits can condition public sector professionals' learning experiences and constrain their understanding of design innovation approaches, methods and strategies.

- Organisational expectations and the types of projects and contexts determined public sector professionals' risk management strategies, which in turn, in some contexts, constrained public sector professionals' learning as they refrained from engaging in practical exploration of some design strategies and methods.
- Some types of projects may be more suitable than others for learning design as research participants encounter greater constraints or felt their projects were too big or complex.
- Some types of projects or contexts may require different degrees of mentoring and types of support.

Table 12 Summary of Research Contributions

RESEARCH CONTRIBUTIONS

C1 - THE PUBLIC SECTOR EVALUATION ECOSYSTEM and TAXONOMY OF INFLUENCING FACTORS

- Provide a more comprehensive and holistic understanding of the social factors influencing public sector professionals' learning, evaluation and uptake of design-led innovation approaches.
- Offer a clear definition of designers' scope of action in public sector professionals' uptake of design approaches, drawing attention to design communication and capacity building for public sector professionals.

C2 - KEY RESEARCH FINDINGS

- Identify gaps in design communication and capacity building & propose actionable strategies for overcoming them.
- Challenge the notion of a one-size-fits-all design discourse and and capacity building strategies.

C3 - THE PROCUREMENT LADDER

- Expands on current representations of the applications or roles of design-led innovation approaches in the public sector by differentiating between descriptions of the *designers'* relationships with the project and organisation, and *design's* application.
- Starts discussion on how to better describe design's roles or applications in the public sector to facilitate procurement

How the evidence is presented: chapter structure and sources

In order to articulate key research findings while exposing the evidence that supports the conceptualisations mentioned above, this chapter follows public sector professionals' thinking processes and decisions as they evaluate design approaches in a sequential order, from procurement of design to speculation on its future applications in their work. In doing so, this waves in evidence and insights from both the evaluation processes and their ecosystem and sets the bases for articulating key research findings. This journey is outlined in Figure 38:

- Section 5.2 on procuring design describes public sector professionals' decision to use a design-led innovation approach in a particular situation or project. The section exposes the negative impact of public sector professionals' preconceptions of design on the procurement of design-led innovation approaches.
- Section 5.3 on theoretical exploration describes how public sector professionals construct their conceptualisations of design strategies and methods before applying these strategies, as well as their criteria for deciding whether or not to apply them in their projects. Firstly, this section exposes how public sector professionals may

construct inaccurate conceptualisations of design by building on their knowledge of other methods and design's rhetoric and artefacts. These insights point out representations of design that are ineffective for building public sector professionals' understanding and trust in design-led innovation approaches. Regarding evaluation at this learning phase, the section exposes how public sector professionals may refrain from the application of user-centred and participatory methods and strategies, and the reasons behind those decisions.

- Section 5.4 on practical exploration refers to public sector professionals' experiences of using design methods and strategies, and how these affect their perceptions of its contribution and suitability. This section discusses: (1) design's emphasis on spending time understanding the problem, and (2) working collaboratively; which are two of the core characteristics of design-led innovation approaches as defined in the scope of context.
- Section 5.5 on further use refers to the potential for public sector professionals to sustain their engagement with design methods and approaches and continue to apply these in their work. This evaluative phase links back with the initial stage of procurement, but it portrays public sector professionals' decisions regarding design's suitability from a position of increased awareness and understanding of the approach. This research exposes the ways in which public sector professionals fragment the design approach by adopting particular methods or ways of thinking rather than design as a methodology. Regarding public sector professionals' evaluation criteria, it also exposes the kinds of information they lack to decide whether design-led innovation approaches are or not a valid and suitable methodology for their area of work. These gaps in evidence include reliability of methods, how it compares to other approaches, and spotting opportunities, such as projects or situations where they could use a design-led innovation approach.

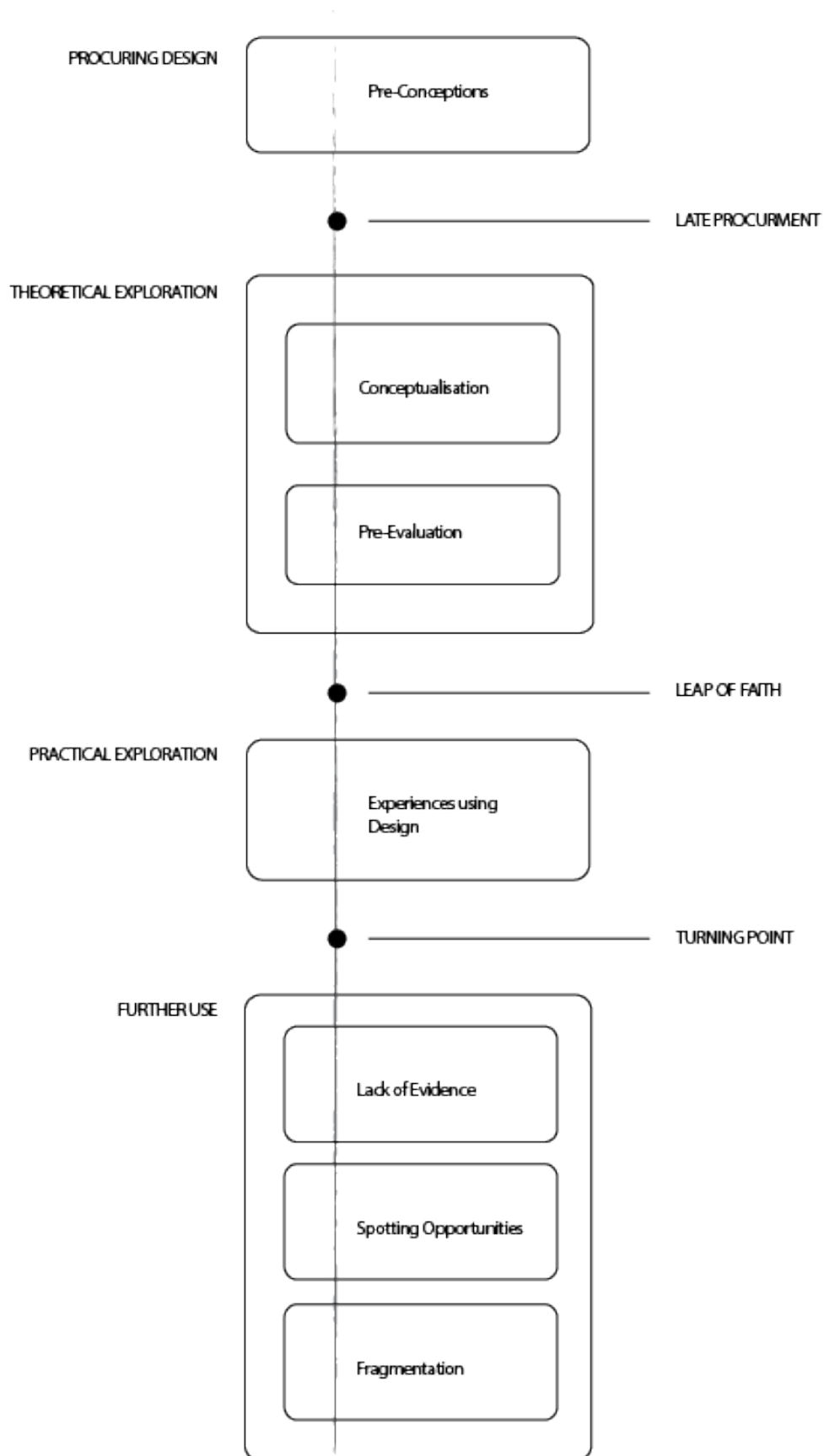


Figure 38 Chapter outline, based on public sector professionals' learning and evaluation process

Finally, this chapter presents the evidence in response to how it was analysed, by focusing on the evidence from the main case study and triangulating those insights with the data from the practice-based studies. An exception to this was the evidence and analysis regarding the design procurement phase, as data on procurement was primarily gathered during the practice-based studies. While assuming a lesser weight of evidence supporting these interpretations, the researcher found it relevant to emphasise and speculate on the impact that public sector professionals' expectations of design and designers may have on its procurement. Additionally, these insights were also relevant in the development of the procurement ladder, which contributes to the definition of design and designers' roles and relationships with the public sector.

Every quote or piece of evidence will be referenced using (1) the case study, (2) the type of empirical material, and (3) the participant name. For instance, '(CS1, I, Helen)', means that the evidence was gathered in the first case study, through an interview, and portrays Helen's views. Case studies are identified by number: CS1, CS2 and CS3. The type of empirical material is identified by the initial of the method (See Table 13): I for interviews, O for observations, IC for informal conversations, E for extant documents, and Q for questionnaires. In the third case study, the second round of interviews is noted as I2. Observations may also include the day of the training when relevant for highlighting the evolution in participants' perceptions. Regarding the questionnaires, as two questionnaires were undertaken in each of the practice-based cases these are made explicit as Q1 or Q2, to specify to which design intervention they refer.

Table 13 Referencing system for the type of empirical material being quoted

Interviews	Observations	Informal Conversations	Extant Documents	Questionnaires
I	O	IC	E	Q

Table 14 Summary of Research Participants to Support Reading of Findings

Case Study	Role	Name
CS1: Organisational Change	Gatekeeper and Key Informant	Helen
	Team Managers from Second Team	Hilary and Cleo
CS2: Redesigning Statistical Outputs	Team Manager and Key Informant	Anthony
	Gatekeeper and Team member	Gary
	Team members	Susanne and Daniel
CS3: Design Training	Design Facilitators	Marlene and Nathan
	Observers evaluating training	Jack and Mary, Sheila, Lorna and Sam
	Other Visiting Designers	and Sam
	Participants Team A	Lee and Martha
	Senior Manager Team B	Peter
	Participants Team B	Paul and Laura
	Senior Manager Team C	Lidia
	Participants Team C	Mark, Neil and Michelle
Participants Team D	Eric and Shona	

The people involved

Before presenting research findings, it is worth taking the time to remind the reader about the participants who expressed the views portrayed in this chapter (summary on Table 14). These descriptions seek to contextualise their views and thus emphasise but simplify their relationships with design and with their projects. It is worth recalling, as well, that names have been changed to protect the anonymity of the participants.

In the scoping case study we had Helen, an organisational change expert with a good understanding of, and great interest in, how design strategies and methods can enhance her work. As gatekeeper of the scoping study, she worked with the researcher at the early scoping stages of the project. Afterwards, she met regularly with the researcher at informal settings to have a cup of coffee, discuss the progress of the project, and more generally, their shared interests around design, public sector innovation and organisational change. In her interview, as she examined design's role and contribution to the public sector, she often

referred back to the project through which she had learnt about design before getting involved in the research.

In the immersive case study, we had Anthony, project manager of the statistical publication undergoing changes, who agreed to take a user-centred design approach to the project but was still figuring out what that meant. His plan to improve the cost-effectiveness of his department got absorbed by a wider exploratory design-led project on the digitisation of statistical information. He truly appreciated the researcher's support in orienting the project but had to deliver on a much more constrained timeline and eventually re-scoped the project to deal with the efficiencies in his department. In this project team, two other key players were Gary and Tom, who strived towards innovating the way public sector statistics are published. They met with the researcher first to scope the project and remained actively engaged in meetings and email discussions.

In the main case study, four teams participated in the design training-programme. The most outspoken of the participants were working in a Scotland-wide organisation and aiming to improve one of their improvement methodologies. They were the first to be interviewed, Paul and Laura, and they showed a reflexive and critical approach to learning design, going beyond the training materials to explore its applications and success in public sector contexts. Their senior manager, Peter, spoke with the researcher for over two hours. He was enthusiastic about innovating in his sector and interested in the possibilities that design could offer. The second team to be interviewed, Neil and his senior manager Lydia, were at the opposite pole, and clearly sceptical about what design had to offer. Their project strived for service integration. Neil attended the training and delivered the project with two members from partnering organisations. Their project had to deal with the complex relationships between institutions. Eric and Shona's project was similar. Representing two different organisations, they were working to integrate the services provided by three institutions, which had a history of poor relationships. Both were very interested in design's user-centred approach and taking in anything that could help them to navigate the complexities of their project. Finally, Lee worked in a Council's innovation and development

department. His project aimed to (re)design a digital service internal to the Council, and his was the only team in the training that developed a tangible prototype. Although other colleagues joined him in the training, he was the only one that attended all of the sessions. Regarding the designers, there were two facilitators, Marlene and Nathan, two observers from the sponsoring organisation, and other visiting designers provided presentations (see Table 14). Among the designers' voices, two stand out: Marlene, who ran the training programme, and Sheila, from a Scottish service design agency. Marlene got involved in public sector innovation through her work in public service, continued to work in a Council, and had a decade's experience delivering design and innovation training programmes in the public sector. By contrast, Sheila had trained as a service and innovation designer, and had insights into the commercial side of design. She had a decade's experience pitching her design work to public sector professionals and practising service design and co-design within a variety of public sector contexts.

5.1 Expectations that limit design procurement

The findings of this research indicate that public sector professionals' lack of awareness of design-led innovation approaches can have a negative impact on their procurement. This section shows how public sector professionals' (pre)conceptions and expectations of design determine when, how and with what purposes they seek to apply design-led innovation approaches. Firstly, public sector professionals' associations of design with the implementation of outputs can constrain design's contribution at research and strategic stages due to late procurement. Secondly, public sector professionals' expectations of designers working from outside the organisation can constraint design research and collaborative practices.

5.1.1 Preconceptions of design that lead to its late procurement

Decisions in the procurement stages build on public sector professionals' preconceptions of design's role and remit. The evidence from this research suggests that public sector professionals associated the incorporation of design with the implementation of tangible outputs, leading to the incorporation of design at late stages of the design process. As this section discusses, this late procurement constrains design's strategic input and neglects its role in the definition of the problem.

Signs of late procurement

In the first case study, despite Helen's experience and knowledge of design innovation practices and her organisation's interest in 'design's *asset-based* approach', it was suggested that designers make posters to support staff understanding and engagement with the on-going restructuration. The designers involved, including the researcher, felt that this kind of design work did not match their practice. They had the impression of being asked to '*brand*' the changes and related initiatives to '*gain the trust from all organisational levels, so they truly believe that the process is open for them to participate*' (CS1, G, O). However, the structural changes were already under implementation, when it was too late for incorporating staff's views in a meaningful manner. Looking at the design situation from the

perspective of participatory design (Bjögvinsson et al., 2012), and given the staff's negative emotional responses to the top-down changes made, designers felt they were being 'called in too late'. The designers could see higher value in involving staff earlier in the process with the purpose of informing the changes, ensuring that the new roles and structure built upon the knowledge and needs of the people implementing them. That is, with a research and strategic purposes.

The other two studies had similar findings. In the second case study, although the designer's role was renegotiated, the initial brief connected the designer's involvement with the development of outputs. The design brief stated *the projects' intention to take a user-centred approach but noted that although 'the project would benefit from design expertise at all stages, it would be particularly relevant at the point of prototyping designs'* (CS2, PC). In the third case study, senior manager Lidia (CS3, I) noted that, due to the training, they 'were going through the whole process, but they started at a far earlier stage than most of [their] colleagues would put it'. This research links this late procurement with public sector professionals' preconceptions of design's role and remit, which the following sections will unpack.

Associating design with tangibility and implementation

The public sector professionals in the case studies associated design with the development of tangible outputs. As Paul noted on the first day of training, they wanted to '*learn how design can be applied to intangible products, because design feels tangible*' (CS3, O, Day 1). The evidence suggests that due to these associations with outputs and tangibility, public sector professionals did not recognise the existence of more abstract applications of design such as research and strategy. Instead, public sector professionals associated these roles with project management.

For instance, Hilary and Cleo (CS1, IC), who reported *appreciating the strategic input of designers, nonetheless struggled to fit this role into their definition of design. They recognised design decisions in their work as styling and formatting reports and graphics or designing research studies. But beyond the visual outputs produced by designers, they struggled to*

identify the work undertaken by designers with their team as design, associating it instead with management.

Similarly, after months working with the designer, Anthony introduced her at lead-analysts workshop as *'some kind of management consultant'* (CS2, O). Similarly, while debriefing after the workshop, Daniel enthusiastically claimed, that *with the workshop results 'we could start designing', referring to beginning the development of ideas and prototypes.* Even after the project, when speaking about design's user research, Anthony provided examples about *user segmentation for marketing purposes, such as the branding of toothpaste.* Furthermore, Eric (CS3, I) also reported introducing the approach to colleagues as *'imaginative or visual project management, for colleagues would think about clothes if he spoke of design thinking'.*

This insight was also supported by the views of designers, who noted that *design is still perceived as 'Design with a capital D'* (CS3, I, Sheila), *associated with graphics and products* (CS3, I, Sheila; CS3, O, day 60, Lorna), while *'design's strategic value is not yet appreciated'* (CS3, I, Sheila), *affecting negatively public sector professionals' capacity for procuring and managing design* (CS3, I, Jack). Service designer Sheila noted (CS3, I):

So if someone needs a website, we'll make a website, if someone needs a poster, we'll make a poster, but we'll do the co-creation design thinking behind it.

'Behind the scenes' they undertook what they called *'ninja work'* to overcome this barrier. Because of these associations of design with tangibility and implementation, the design training clarified design's evolution (4.3.3) from tangible outputs such as graphics and products to intangible services and experiences, to eventually becoming a framework for innovation. Sheila (CS3, I) also highlighted *the need for making explicit that 'research is part of [their] design process'* by framing design as *'an innovation research process'.*

This links back with how designers have generated new representations of design's process and remit to emphasise and increase awareness of its emerging roles and applications, exposed in Chapter 2 outlining the scope of context. The evidence corroborates the Design Council's argument (2013) that public sector professionals' dissociation of design

with the first half of the double diamond, where innovation happens, constrains its contribution to strategy and innovation.

In summary, public sector professionals' degree of awareness and preconceptions of design will determine the 'when' and 'for what' they seek to incorporate design. Research participants primarily associated design with the development of tangible or digital outputs, leading public sector professionals to seek design support after decisions have been made. This late procurement neglects design's contribution in problem definition and limits its strategic value.

5.1.2 Expecting the designer to work from outside

Evidence from this research suggests that designers are expected to work from outside the organisation, which can have a negative impact on the procurement of collaborative design practices. For instance, Anthony (CS2, I) reported two conversations with colleagues that portrayed expectations of designers at odds with collaborative design practices. The first conversation took place before beginning to work with the designer, where a colleague explained to him '*what designers were going to do*' as follows:

[1] They will ask you what your users need, so what you're trying to achieve. [2] Designers go away and sort of pilot it off, ideas of things. [3] And then you'll say I like that, I hate that, can't do that, and why not. [4] And then maybe [the designers] come back with something totally different out of those things.

It should be noted that these descriptions of designers' process did not match Anthony's later experiences with design as the researcher took a more collaborative approach. However, this early conversation might have shaped Anthony's preconceptions of design, which would justify expectations of lower involvement on behalf of his organisation and explain their subsequent lack of capacity.

The second conversation took place during the project (CS2, I):

Anthony commented with a colleague that the designer was 'asking really difficult questions', generally related to user-needs and project purpose. His colleague responded that the designers'

role should not be asking questions, as they 'should be coming with the answers, producing the thing'.

It is worth noting that these insights did not emerge in the training-based case study, due to the designers' role as mentors. But Sanders and Stappers (2008, p.6) corroborate this tension when they point out design's conflict with the 'expert perspective' as its processes become more collaborative.

Design practitioner Sheila also noted this tension. She explained (CS3, I) that her design agency distanced their work from '*a traditional [design] firm, in the sense that they take a brief, go away and be creative and come back*'. Instead, they '*took organisations with them in the process*'. This more collaborative approach mirrored Helen's experiences in previous projects, as she claimed that design had '*always felt like a collaboration rather than a kind of answer to what are your problems*' (CS1, I).

However, it is worth pointing out that this tension regarding designers' role lies within the design discipline as well, as there were designers invited to the training who were fairly sceptical of participatory methods, to some extent regarding them as naïve. As Jack and Mary explained in an informal conversation with training participants (CS3, O, Days 2), in their extensive experience working with big organisations, they had learnt that designers, and not staff, had the expertise to devise design solutions that fitted their technical and organisational needs. As an example, they described to a group of participants a project where they had developed a digital application to support staff in managing internal processes in a public sector organisation. They explained that involving employees in such context would not contribute to the design because employees did not have the technical skills required in the development of the software.

This research does not aim to judge whether collaborative or externalised design approaches may be more suitable for public sector contexts, but to emphasise that both of these approaches to designing co-exist. Whilst the selection of a collaborative or external approach may depend on contextual needs as well as the designers' and organisation's preferences, lack of awareness may nonetheless limit procurement. The discussion chapter

Research Findings

examines the design literature concerning this gap in awareness. This research contributes to bridging this gap by making explicit the alternative roles that the designer can take in public sector contexts in the procurement ladder.

5.2 Theoretical exploration

The findings in this research suggest that once design is procured, and before engaging in the practical application of design strategies and methods, public sector professionals need to, firstly, understand how they can apply those strategies and methods in their projects, and secondly, decide whether or not those strategies and methods suit their projects' needs and purposes.

This research coins this learning and evaluation stage 'Theoretical Exploration' because it occurs before actually applying design methods. As public sector professionals do not yet have experience using design methods and strategies, their evaluative decisions build on theoretical learning.

To unpack this process, this section focuses first on how public sector professionals conceptualise design, with a particular emphasis on challenges and limitations. Then the text moves to examine how public sector professionals assess the suitability of design methods and strategies at a conceptual level, with an emphasis on rejected methods and strategies and the reasons behind those decisions.

5.2.1 Conceptualising design

The evidence suggests that public sector professionals' conceptualisations of design methods and strategies are primarily shaped by (1) how design is communicated by designers; (2) public sector professionals prior experience with design (or lack of it); and (3) public sector professionals' knowledge of other methods and approaches used in their area of work. This section begins to surface gaps in how design is communicated building on how public sector professionals attribute meaning to and interpret different descriptions and representations of design. Firstly, the evidence suggests that the use of both language and exemplars of the application of design in other contexts does not support public sector professionals' comprehension and credibility of design methods and strategies. Secondly, the evidence suggests that public sector professionals' prior knowledge and experience of other methods

and approaches can negatively interfere with their comprehension of design. Evidence suggests that making explicit design's overlaps and difference with other approaches could support public sector professionals' learning.

Associating with other approaches and methods

This research shows that, whether participants had used something similar before or not, they constructed their understanding of design methods and strategies by contrasting them with other methods and approaches with which they were familiar. Participants made these associations explicit by reporting using versions of design methods from other fields or exposing design's similarities with other methods they used. More subtle manifestations of these associations surfaced in public sector professionals' use of language, for instance, when public sector professionals substituted design terms with the associated methods, such as Paul's use of the term '*focus group*' instead of '*workshop*'. There were also cases where participants self-corrected from the associated methods to design terminology. For instance, saying that they used '*the user profile, the persona one sorry*' (CS3, I, Neil), or '*we want to pilot, prototype sorry*' (CS3, O, Day 30, Eric).

These associations can have a positive effect in supporting public sector professionals in understanding design. For instance, in the scoping session of the second case study (CS2, O), *David recognised the stakeholder map as 'the onion' they used in management*, which seemed to lend understanding and credibility to the method. Eric (CS3, O) noted that *the logic model template provided by the [design training-programme] was much easier to use than those from management*.

However, this research has found more clear evidence on how these associations can have limiting effects, by generating inaccurate conceptualisations, confusion or disengagement. As Neil emphasised (CS3, I):

When you are familiar with something that sounds and looks a bit similar, to then be faced with the design thinking set of principles, processes, techniques and methodologies the difference between them becomes difficult to get right in your mind.

In the cases studied, the narrowing effects of these associations were particularly evident regarding prototyping. Public sector professionals associated prototyping with other risk management strategies, such as *piloting*, *small-test-of-change*, *early-years-collaborative or improvement methodology*. Most training participants used prototyping and piloting interchangeably (C3, I), even though these are explicitly differentiated in the training, as prototyping includes a wider range of activities than *implementing 'expensive pilots'* (Reed, 2013).

Due to these associations, prototyping seemed simplified to two variants: (1) small-scale implementation, and (2) iterative evaluation of solutions. Firstly, prototyping understood as small-scale implementation was contrasted with top-down organisation-wide changes. As Eric explained (CS3, I):

What we are very guilty of in the public sector is thinking, we'll have a big bang, we'll just implement this change and everyone will get on with it and it will be marvellous and very quick. [...] Whereas the 'small test of change' approach is like prototyping. Pick a few people, learn the lessons, capture learning, then expand out once you got it right.

Secondly, prototyping was conceived as the iterative (or actual) evaluation of solutions. Even though only one team developed a prototype during the researcher's involvement, two other teams claimed to have '*prototypes running*'. These running prototypes referred to *parallel projects and initiatives already happening in their organisations 'exploring different ways of doing things that may help inform their projects'* (CS3, I, Paul). Neil noted as one of design's key differences with other approaches that:

You are explicitly prototyping as part of your solutions. Whereas in the less or more traditional methods, sometimes you put different kinds of solutions in place that aren't necessarily prototypes, they are just temporary fixes or permanent fixes but are not prototyped.

The key aspect taken from prototyping here is the iterative evaluation and improvement of solutions, which public sector professionals found other risk management methodologies did not offer.

Participants' associations with other risk management strategies shared design's emphasis on iterative improvement by implementing '*change, gather data, and then change, gather data...*' (CS3, I, Eric). However, public sector professionals linked prototyping exclusively with the late stages of development and evaluation of solutions. Although the training included examples of prototyping used in earlier stages of the design process (7.3.3) to understanding users' experiences or identifying constraints and opportunities; these did not show in participants' descriptions of prototyping.

Confusion and disengagement

This research indicates that in the case of public sector professionals who are already sceptical about design, a lack of clarity in the overlaps and differences between design and other approaches they are familiar with can be a reason for disengagement. A couple of interactions between public sector professionals and designers will illustrate this point.

FIRST INTERACTION

Day 30 of the training. Training facilitator Nathan is about to introduce the next activity: creating a problem statement (CS3, O, Day 30).

NATHAN *Does anyone know how to create a problem statement?*

NEIL *(Responded with some irony) Well, sometimes we say 'yes, we know' but then you do something we had never seen or done that way before.*

SECOND INTERACTION

Day 60 of the training. Invited designer Lucy is introducing the design process using a rollercoaster as a metaphor for design's emotional journey with ups and downs, similar to the models presented in the literature review (see below).

NEIL *(Intervened with an 'isn't that obvious' tone) Well, co-designing is just a normal social process of group formation, which goes through the phases of forming, storming, norming, and performing.*

The participant was referring to Tuckman’s (1965) model of group development, which, sometimes, is represented as a similar curve and may have inspired representations of co-design processes as a rollercoaster (see comparison in the image below).

By themselves, these interactions only display situations where research participants manifested their scepticism of design knowledge. But looking more holistically at how public sector professionals’ perceptions of design evolved, what these interactions tell us is that public sector professionals’ extensive knowledge of other methodologies and methods, together with a lack of clarity on how design builds on, overlaps with and diverges from these, can result in scepticism of design’s trustworthiness.

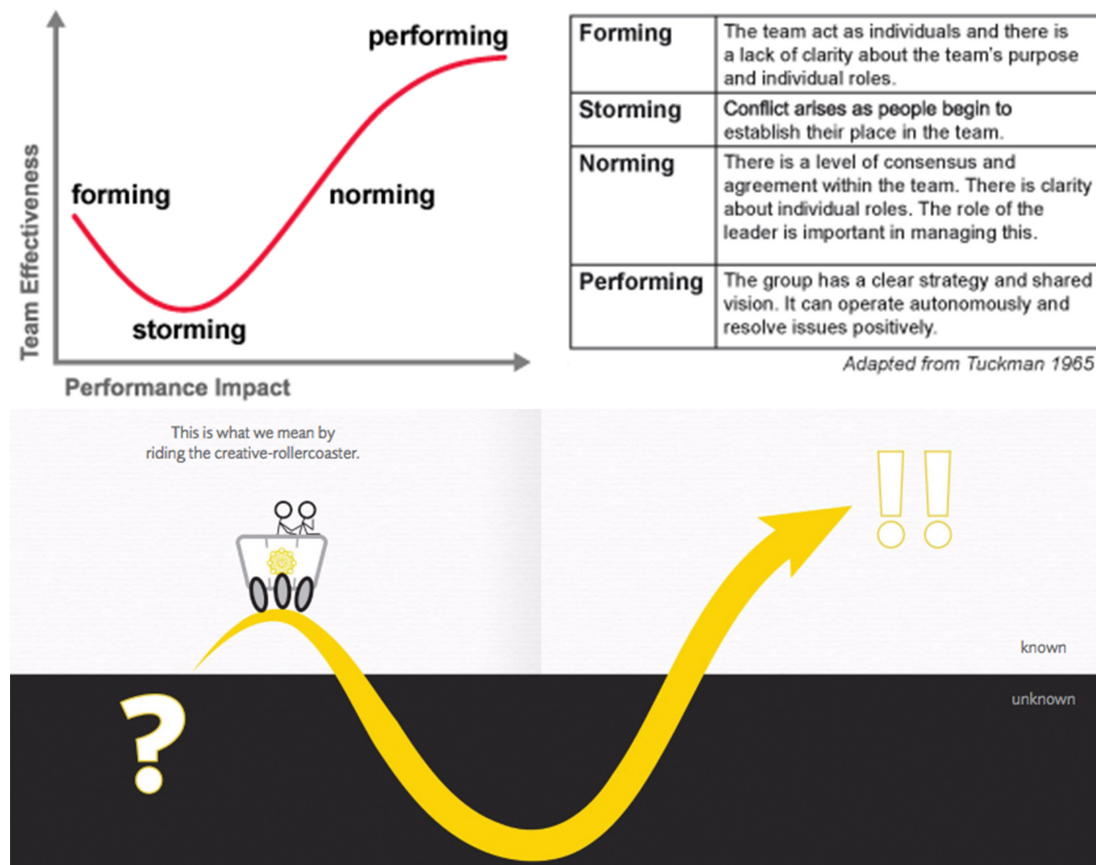


Figure 39 (a) top: Tuckman’s model of group formation (source: alba-academie.nl/tuckman-model-team-performance/), (b) bottom: roller-coaster model of the co-design process (now-here, 2013)

Having to translate exemplars from other contexts

The evidence suggests that public sector professionals did not consider exemplars of the application of design from other sectors and contexts as evidence of design's suitability and contribution in their projects. Often they could not see the relevance of the examples to their projects or could not envision how to apply these methods in their contexts, and the unique offerings of design were overlooked or overshadowed by their associations with other contexts.

A notable instance of this was that three teams from the training reported to *have struggled to see how design methods could be applied in their projects*, as they felt that *'the methodology and the ideas for capturing the user experience [did not] translate very well' into their contexts* (CS3, I, Neil). Senior managers Lidia and Peter (CS3, I) noted that, *if allowed, their teams would have abandoned the programme after the second day of training*. These teams noted that *examples of user research where they visited the bookies, bank and post-office, and the yogurt-eating activity, were fine for very public-facing services and front line engagement with customers* (CS3, I, B and C), but they found it *'quite difficult to apply these to their project[s]'* (CS3, I, C). Paul noted that because their project was *'more process driven or paper-based and dealt with back-room functioning'*, *it took them longer, to understand the relevance of those methods* (CS3, I, C). Paul, who had explored the applications of design beyond the training materials, noted that *the training lacked examples they could relate to, but had found examples of 'people using design thinking to change policies that might have helped them early on'* (CS3, I, C).

Similarly, the evidence suggests that training participants' conceptualisations of prototyping were narrower than intended by the training. Even though techniques for prototyping services and experiences were introduced in the training (4.3.3), participants dealing with intangible outputs did not seem to have noticed these forms of prototyping. One of the reasons for this might have been that these examples of prototyping were overshadowed by product-based examples and by associations with other risk management strategies.

Furthermore, for sceptical public sector professionals, examples from other fields can be a reason for disengagement. For example, Paul (CS3, I) noted that *they could not 'try lots of different prototypes' as promoted in the training*. Similarly, Neil noted that (CS3, I):

The concepts that were put forward in the prototyping when the designers are quoting stories like Dyson prototyping 3000 times [...], that frames it in a different kind of way. For things like public sector [...], you don't usually have as many stabs at improvement as 3000 prototypes. We usually run a pilot, or a couple of pilots, evaluate that and then try to implement that, in my experience.

What these statements tell us is that, due to their lack of prior experiences using design methods, at first public sector professionals cannot translate the application of design methods from exemplars from other contexts. Whereas designers may be able to immediately recognise how to apply the same principles and strategies to different situations, to understand and evaluate design approaches public sector professionals new to design need more specific examples of how they can apply design in their projects and contexts.

Having to translate language from other contexts

Regarding the comprehensibility and credibility of design, it is worth looking at how public sector professionals used and engaged with design's language. The research revealed that using language from other sectors was often problematic.

On the one hand, Anthony (CS2, I) and Eric (CS3, I) argued that *design should be communicated in public sector terms, so design concepts and methods are easier to understand and to sell*. However on the other hand, design and public sector methods may not fully overlap, and as seen, *'using [public sector professionals'] own language [by] calling [prototyping] small-test-of-change'*, may narrow their conceptualisations of the method. Nonetheless, evidence shows that using terminology from other sectors can lead to disengagement. For instance, training participants struggled with some of the terms used in the stakeholder maps provided, such as 'market' or 'business', because these terms did not mirror the roles and language used in the public sector (CS3, O). This kind of language, inherited from profit-driven contexts, was appreciated in other training materials such as the

programme brochure, which pitched ‘design’s capability for business growth’ (CS3, E). This suggests that the programme brochure was not specifically targeted at the public sector, but possibly inherited from their earlier provision of similar programmes for businesses.

Furthermore, and despite the financial cuts and a subsequent decrease in resources (2.2.1), pitching design through its capability for ‘*reducing deficit*’ (CS3, E, training slides) or ‘*saving money*’ (CS3, O) did not seem to appeal equally to public sector professionals from different levels. While senior managers were interested in evaluating ‘*how design might save money in the long term*’ (CS3, I, Lidia), other public sector professionals who were not ‘*responsible for budgets*’ did not relate to financial terms (CS, I, Lee). As Lee (CS3, I) and Anthony (CS2, I) noted, these professionals instead ‘*talk in resource or staff terms*’. According to Lee, because they work within huge organisations, reporting how many pounds something will save does not mean much to people. In general, using profit-driven language did not seem to resonate with public sector professionals and generated an attitude of ‘this does not apply to us’.

Descriptions of the design process

Some gaps in public sector professionals’ understanding of design methods and strategies seemed to be directly related to how these were described. For example, the use of the double diamond as a process roadmap may well have reinforced public sector professionals’ associations of prototyping with solution development. This model represents the design process through four phases: discovery, definition, development, and delivery. Public sector professionals located the use of prototyping in the second half of the diamond, indicating that they did not see the value of these strategies for identifying constraints and developing ideas before reaching a fully fleshed solution.

Something similar seemed to happen with ideation: when participants described their processes they seemed to move directly from user-research into prototyping, with no mention of how ideas would come into being (CS3, O, Day 2, I). Only one team mentioned ‘creativity’ and the possibility of undertaking an ‘ideas generating workshop’ involving users and stakeholders (CS2, I, A). Although the ideation stage is implicit in the ‘development of

potential solutions', neither the training's version of the double diamond or the training materials specifically addressed idea generation, nor provided guidelines or tools for enhancing lateral thinking. Based on how participants spoke about exploring solutions, it seemed that teams risked sticking to their first idea, as they did not discuss exploring multiple solutions but developing *the* solution.

5.2.2 Evaluation before application: Managing risk

The evidence gathered suggests that, before engaging in the practical exploration of design strategies and methods, public sector professionals go through a critical evaluative step. This section discusses public sector professionals' objections to moving into the practical application of design strategies and methods.

Despite their exploratory character, research participants were working on real public sector projects and thus had to ensure that any undertaken activity was appropriate and endorsed by organisational and public sector regulations and expectations. The evidence suggests that participants' refraining from practical exploration fundamentally responded to risk management strategies and organisational constraints. The pressure to manage risks is accentuated when involving other people, and therefore design strategies and methods oriented at user research and participation were particularly affected by this. Design facilitator Marlene noted that public sector professionals have '*been trained to behave in a certain way, [and] we're asking them to behave in a different way*' (CS3, I). Due to the iterative and exploratory character of design-led innovation approaches, she felt that '*the public sector needs to be much more open to risk and see risk as a good thing, that actually failing and learning is a good thing. Whereas public sector tends to try and minimize risk completely, they are very risk averse*'. This section delves into public sector professionals' perspectives on risk and their decision-making processes as they evaluate whether or not to apply user-centred methods. These views depict concerns regarding the reliability and ethical implications of using design methods, as well as wider organisational pressures.

Refraining from practical exploration of user-centred and participatory methods

Participants across projects emphasised the value of ‘*looking at [the service] from the user’s point of view*’ (CS3, I, Lee), but this did not necessarily imply undertaking user research or involvement.

This research found qualitative differences in the depth of user research and involvement depending on the type of users and their relationships to the services. Higher uptake of design strategies occurred in contexts where the relationship with users could be assimilated to a peer-to-peer relationship and felt more like a collaborative partnership. On the contrary, when users were members of the public participants reverted to using more reliable or habitual ways of working such as using questionnaires (CS2, O) or relying on the expertise of service providers (CS3, I, Neil and Eric). As Neil acknowledged (CS3, I):

We haven’t as much gathered the observation data or the user experience directly, but we have tried to use the managers to describe the experience of the users of their service, using some of the exercises that have been illustrated to us in the [training] days.

Similarly, Eric and Shona’s project postponed user engagement *until key decisions were made at a managerial level and proposals were developed* (CS3, I).

This research identifies internal and external barriers to this application. Firstly, public sector professionals must deem the methods appropriate and valid for their purposes. Secondly, public sector professionals evaluate the suitability of design methods against organisational and public sector regulations and expectations.

Trusting user-centred and participatory methods: A leap of faith

When considering the possibility of applying design user-research and participatory strategies and methods, public sector professionals struggled with two main aspects: firstly, the ethics of involving users, and secondly, the reliability of qualitative data for making decisions. In the projects studied, a lack of trust in design research methods had two consequences: (a) reverting to faster, more reliable research methods, such as questionnaires (CS2); or (b) postponing user engagement until key decisions were made at managerial level and proposals developed, limiting involvement to a consultation level (CS3).

The ethics of gathering qualitative data and involving users

The ethics of data gathering and user involvement became problematic when working with vulnerable users, such as adults with complex needs including *'homelessness, drug addiction, depression and social exclusion'* or children (CS3, I, Eric, Neil, Paul). As Paul explained (CS3, I2), *'one of the difficulties is that you can't fail, because you are dealing with people', and thus 'the risk is too high'*. When project activities and outputs have an impact on the lives of vulnerable people, public sector professionals *'have to be very careful that [they] are doing things ethically, robustly and safely'* (CS3, I, Neil). They *'don't want to see [vulnerable users] as lab-rats'* (CS3, I2, Paul). Furthermore, as Shona noted (CS3, O), *in her area of work the value of speaking to users was not only underestimated but to some degree stigmatised due to the complex working situations experienced by staff, involving high emotional intensity and even verbal or physical aggression on behalf of users.*

The trouble of making decisions based on qualitative data

Even more problematic than ethics was the perceived reliability of design research methods. Public sector professionals' lack of trust in design research methods arose from both cultural and practical issues. Primarily, they had misgivings regarding the reliability of users' views and the reliability of design research methods to gather quality data.

Firstly, participants expressed misgivings regarding the reliability of users' views. Unlike in the private sector, citizens do not always use public services by choice, but rather because they have to. Credibility of users' views seemed connected to their degree of coercion (Alford, 2016, p.686), that is, whether citizens engaged with those services voluntarily or under obligation. As senior manager Lidia expressed (CS3, I):

You know, nobody really choses to [use our services], nobody choses to go there. Therefore there you got quite almost a captive audience so what their views of it are always going to be, you know, a bit skewed.

Anthony's refraining from involving users was also rooted in questions around what users to recruit and what could they offer (CS2, I):

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I think my concern about getting people in a room was also that I didn't think that I'd get the right people [...] you know, get someone who really loved the idea [...] I was worried that we wouldn't get what we wanted to get, and just organise a free lunch for other people to come and get some sandwiches. [...] I think I had concerns about the pool of people to contact, you know we could have got some key intelligent users coming in, and that's just what would have happened. And most of them would be, a lot of them would be 'I don't really use that'.

The opinions, needs and aspirations of captive audiences, and of citizens in general, are expected to be irrelevant for service provision, or even negatively biased. As Shona noted (CS3, IC), service providers in her area of work *seemed to fear users' feedback, as if they did not want to see or acknowledge what things were not working.*

Secondly, participants expressed doubts about the reliability of both design methods and qualitative data. Reliability of qualitative data often related to sample size and scalability issues, as the views of a few users are not enough to back up complex organisational decisions. Participants identified a '*common problem in the public sector*' in the fact that services have to satisfy the needs of '*virtually everyone*' (CS1, I, Helen), having to reach '*large, sometimes unknown, audiences*' (CS2, I, Anthony). For instance, Lee and Martha were concerned with getting too much feedback if they opened up the project for other employees to feed in (CS3, I, Lee):

Obviously, we're a huge organization. You can't involve everybody [...] I think maybe as Martha says there, a good idea would be, you know open up that communication to [other employees]. You know, obviously you need to do that sensibly so you don't get so much feedback and knock you back, and where you need to go back further.

Furthermore, according to Neil and senior manager Lidia (CS3, I), given the continuous decrease in resources, undertaking in-depth qualitative research is not feasible.

These observations are congruent with Bailey's (2016, p.20) insights on public sector professionals' struggle 'to see how ethnography and observational research' could build the evidence required to support and justify decision-making in policy development. Qualitative evidence, though helpful, was not seen as reliable. This conflict, however, is not exclusive to

design. In an interview, Denzin (2014) remarked that it should be a priority for qualitative researchers to envision how qualitative evidence and communities' voices can get heard and become an integral part of policy-making processes. Thus this challenge emerges not just in relation to design but, more generally, in the incorporation social research into policy.

Nonetheless, the '*lack of sound evidence*' (CS3, I, Neil) provided by design methods did not always mean they were rejected. Paul instead (CS3, I) praised the contribution of design in his comment that '*with this kind of hat on*', through a design research lens, *they were able to gain insights from data that was not 'statistically relevant'*. Lee's team (CS3, I) felt that the design-led user research they had undertaken would allow them to justify their decisions as it provided them with proof that they had consulted with users of the internal service being redesigned:

Customers expect organisations to deliver a good, efficient, quality service [but] Councils receive a lot of criticism from the outside world because the customers don't feel that they're been listened to. [...] If somebody comes back with this project and says 'right, you're not listening to anybody', we can go back and say 'well, actually [we spoke with the user who suggested the idea and] to other power users, [and] we had a working group with different people and power users in the working group'.

However, on the whole, research participants showed more signs of being concerned with the reliability of the evidence provided by design research methods than otherwise.

Having to, wanting to and being allowed

This section highlights some tensions that emerged between what public sector professionals had to do, wanted to do and felt entitled or were allowed to do.

Lacking time and capacity

Public sector professionals continuously stressed their lack of time and capacity. As Eric noted (CS3, I), in the public sector, '*resources are always an issue, and that's a given, we just have to accept that*'. Additionally, three organisations reported having unexpected internal crises or particularly busy periods, limiting their time investment in the projects.

Participants across all projects emphasised that *'the public sector in general, and Councils in particular, have had to go through significant budget cuts'* (CS3, I, Neil, Lidia; CS3, application form). Budget cuts had also materialised in significant staff reductions and subsequent workload increases (CS3, I, Neil). Public sector professionals therefore need to work out how to *'still provide the same services' with fewer resources* (CS3, I, Neil). As a consequence, most of the projects studied were considered side projects to be undertaken on top of the participants' normal activities. The following interview extract portrays this struggle (CS3, I):

RESEARCHER *What challenges do you think that design approaches encounter in the public sector?*

LIDIA *I think, resources. And that is in terms of capacity of staff to undertake it, the ongoing dedicated time. We don't have people who sit and just do projects. It's just added on to their day jobs. And those day jobs are becoming increasingly fluid and crowded. So finding opportunities to get people to sit back and think, which we all reckon, recognise is really, really valuable, it just, it just...*

RESEARCHER *There is no time*

LIDIA *Aha, yeah. That's the biggest thing, that we have fewer and fewer people to take this work forward.*

Anthony's comments regarding capacity similarly summed up participants' feelings of wanting but not having the time to properly undertake development work (CS2, I)

I've been resourced to basically turn the wheel and get by, and tinkering around the edges each year. [...] I think that what I was trying to do was in addition to everything else, you know. It isn't like I was stopping everything else. [...] I feel that in this organisation there's the expectation that you do other things on top of your work.

This lack of time and capacity had a negative effect on participants' implementation and experiences of many design strategies (see next section). But regarding participants' move

into practical exploration, it had a particularly negative impact on the uptake of user research and involvement. As senior manager Lidia explained (CS3, I):

Sometimes we have to just do things quickly and use our judgment. Sometimes [...] we make the decision that good is better than quick. [...] We constantly battle with operations staff to make sure that they are doing robust assessment of the need of [users]. And they're saying 'but it takes too long, to actually know it, to go through the process and write it down'. And actually, it should take long time because [the users] are important and the resource they're looking for costs a lot. So it's actually trying to create a culture that allows people to go 'right, I can't just keep going, I need to stop and think'.

Similarly, Anthony (CS2, I) explained his decisions to use quantitative methods on the basis of lacking time:

You know, I didn't think that the survey I did was the best, but you know it was quick. [...] I think I was concerned we were going to go around in circles. I don't think qualitative is bad at all, but it is just the work we are more comfortable with.

From a public sector perspective, statistics (however flawed) do represent a higher stake of the population and stick to time and budget constraints.

Autonomy and regulations

Although most training participants highlighted getting buy-in from senior management and colleagues as one of the most challenging aspects of their projects, teams had different degrees of autonomy or freedom to undertake design-led activities. In teams with high autonomy, once project objectives had been discussed and agreed, participants referred to their meetings with management as updates. On the contrary, teams with low autonomy required managerial agreement before taking action. Comparing across teams' activities, teams with a higher autonomy undertook a greater number of design activities. It is worth noting that teams with less autonomy were working with multiple organisations and with vulnerable users, and thus these dimensions are interconnected.

Public sector professionals' autonomy was key to moving into the practical exploration of design methods. For instance, Eric reported (CS3, I) that he and Shona wanted to be user-led, but their senior managers thought they needed to sort out what they were doing amongst themselves first. It is worth noting, however, that perceptions of autonomy did not always submit to managerial influence. For instance, Anthony acknowledged (CS2, I) that senior management were reticent about making any changes to their existing product, but that he felt, nonetheless, that *'at the level he was at [in terms of hierarchy] he should be able to just be trusted and be prepared to make mistakes'*. Instead, Anthony felt 'constrained' by the assessment authorities and existing codes of practice, as any unprecedented changes, or unusual methods for gathering user evidence, could not be assessed against current standards. As he explained, *'it's not that people want to do that, I think we're just kind of constrained by all [...] this assessment authority'* (CS2, I). It could be argued that public sector professionals' refraining from the practical exploration of design methods, whether it is driven by their concerns about the reliability and ethical implications of these methods or by external pressures, arises from the public sector as the context of application, and from their perceptions of what is appropriate or what they are entitled to do in their area of work and their specific organisation.

5.3 Practical exploration

This section describes public sector professionals' experiences and evolving perceptions of design methods and strategies as they actually applied them in their projects. Participants often discussed design methods by contrasting them with their habitual ways of working in the public sector. This section describes what aspects of design public sector professionals found to be different, valuable, challenging, or unsuitable.

Discussions of design strategies and methods in this section are grouped around three different core aspects, building on participants' shared experiences and evaluations. These core aspects are: exploration, collaboration and tangibility. Firstly, exploration refers to design's emphasis on discovery and iteration and exposes public sector professionals' experiences of spending more time understanding the problem. This includes user research and participation. Secondly, the section discusses public sector professionals' experiences of working 'with rather than against stakeholders'. Thirdly, the section looks at public sector professionals' experiences of working visually.

Interestingly, although participants' experiences of using design were similar across cases, there were differences between the training-based and the practice-based case studies regarding where public sector professionals placed the value or challenges of these experiences. Public sector professionals attributed what they found valuable or challenging to designers' skills or to design's principles and strategies depending on whether the role of the designers was that of a consultant-collaborator, as in the practice-based projects, or that of a mentor in the training-based projects. Although these insights are not central to answering research questions on how public sector professionals evaluate design's suitability, they are relevant in the wider context of design's democratisation and the role of designers within it. As it will be argued, these differences offer useful insights for determining the kind of design support public sector professionals require depending on their context and knowledge of the discipline.

5.3.1 Spending time understanding the problem

This section describes participants' perceptions and experiences of design's emphasis on stepping back from seeking a solution and spending more time researching and reframing the problem. The public sector professionals in this research held contradictory feelings towards design's emphasis on exploring the context prior to solution development. Public sector professionals found that design's emphasis on '*what is your problem, what's really your problem, what's your evidence for your problem*' overlaps with lots of other methodologies used in the public sector (CS3, I, Neil, Paul and Laura). However, design strategies seemed to generate issues they did not encounter with other approaches. In general terms, participants understood and acknowledged the value of spending more time understanding and defining the problem. They spoke with pride about their discoveries and about bringing questions to their organisations that no one else was asking. Nonetheless, public sector professionals found design's discovery and definition stages to be more challenging and frustrating than they had expected and judged design's slow pace to be unsuitable in the public sector.

Struggling with design's reframing questions

Despite the overlaps identified by participants between design and other approaches regarding its emphasis on assessing the problem, public sector professionals encountered basic design questions, such as 'for whom' and 'why', very challenging.

On the second day of the training, participants felt unprepared to answer design questions that were provided as tools (CS3, O). Examples of these were the project-poster and the stakeholder map, which included questions such as '*what is the problem statement*', '*who are the key stakeholders*', '*why might it fail*' or '*what needs to be researched, prototyped or tested*'. Similarly, in the second case study aimed at redesigning how statistics are published to ensure they reach their intended audiences, Anthony (CS2, I and O) repeatedly reported finding questions such as '*who is this for*' and '*why are you doing this*' really difficult. He described the designers' role as '*challeng[ing] [the team] in [their] way of*

approaching this change'. He (CS2, I) thought that the project '*would have been able to move forward if we had known the answer to the question: who we are doing this for?*'

It is worth noting that while participants' experiences of design's reframing strategies were similar in practice-based and training-based projects, in the practice-based studies design's challenging questions were attributed to designers' role as outsiders. As external agents, designers can bring an '*objective viewpoint in assisting their thinking*' (CS1, Q1), proposing '*challenging questions that public sector professionals could not spot due to their familiarity with the context*' (CS1, I, Helen). In her presentation at the training, designer Lorna (CS3, O, Day 60) also highlighted '*asking questions that people don't have an answer to as a key role of the designer*'.

The studies showed that the challenging nature of design's reframing strategies can become a cause for disengagement. Teams can get stuck in a cycle of not knowing how to answer design's reframing questions while refraining from the practical exploration of their assumptions and uncertainties.

Saving time in the future versus lacking time in the present

There was a general acknowledgement that taking time to understand the context could save both time and money in the future. As manager Lidia noted (CS3, I), '*we could see that if we got the right outcome it would save money*'. Mark (CS3, O, Day 90) described design's emphasis on discovery as '*taking time from the future to invest now in the present, to prevent wasting time in the future*'. Paul (CS3, I2) associated this approach with the public sector's '*prevention agenda*' and explained that '*people don't do the prevention agenda, but actually, if they did, they would save money and time later on*'.

However, the acknowledged benefits of saving time in the long-term were undermined by '*short-term demands*' (CS3, I2, Paul). As senior manager Peter explained (CS3, I):

They are incredibly short time frames. So you start on a Monday and you have to produce something by the Friday. You have to. And what you produce may be great, may be awful, and people may like it or they may not.

This links back to public sector professionals' pervasive lack of time and capacity, exposed earlier, which is not compatible with design's iterative and exploratory approach to problem definition.

It is worth noting though, that although in their applications to the design training (CS3, E) all teams claimed to have the capacity to undertake the work proposed, participants later reported having underestimated the quantity of work they would need to put into their projects (CS3, I). This suggests that the design approach is more time-consuming than they had expected.

Holding back from seeking a solution

For the training participants, design's emphasis on discovery and definition meant '*going back to the problem*' (CS3, I, Eric and Neil) and *looking at it from the users' point of view and questioning what they are trying to change* (CS3, I, Alan), rather than *assuming they already knew what they want and looking for a solution straight away* (CS3, I, Lee).

This approach contrasted with participants' habitual way of working, which was '*solution driven*' (CS3, I, Lee), '*to have a problem, go in and solve it*' (CS3, O, Day60, Mark). This linear process of '*diagnosing the problem, providing a solution, and it's done*' was also noted as pervasive in the public sector by two of the designers interviewed (CS3, I).

Public sector professionals' inclination towards moving directly into solution development also emerged in the second case study. At the initial scoping session while brainstorming the desired qualities of an ideal output (p. 162), the discussion quickly narrowed its focus to improving the existing publication by for example changing the order of chapters, adding summaries or reducing text (CS2, O).

Other recent design studies corroborate these observations, by noting that design elicits 'problem-finding', which contrasts with public sector professionals' approach of moving directly into 'problem-solving' (Yee et al., 2015a) or going 'into product mode' (Bailey, 2016, p.22). Bailey (2016, p.20) highlights the public sector's expected high speed in solution-provision as a challenge to the implementation of design strategies. However, other designers claim the opposite, that public sector organisations 'work on a slightly slower pace'

(Nisbett in Mager, 2016, p. 35). This perceived slower pace in the public sector might be related to public sector professionals' risk management strategies and lack of capacity and design's higher time investment in discovery and collaboration (see next section).

Nonetheless, as seen in the literature review (2.1.1), design is often portrayed as a solution-driven approach. For instance, the SPIDER design manual for the public sector (Thoelen et al., 2016, p.27) explains that 'governments often think in terms of problems' while 'service designers prefer to think in terms of 'solutions''. Building on these research observations, it can be speculated that portraying design as solution-driven could generate expectations that do not match public sector professionals' experiences of design-led innovation approaches. As the following section shows, participants' expectations of a faster working pace together with design's emphasis on discovery, generated feelings of 'slowing down' and frustration.

Going backwards

By the fourth day of training (CS3, O, Day 60), as teams presented the evolution of their projects, many participants reported feelings of frustration as their projects kept on shifting. Mark and Neil said (CS3, O, Day 60) they *had found more relevant issues they had not thought of, but needed to be addressed for their project to move forward*, and felt they kept moving '*one step forward and two steps backwards*' (CS3, O, Day 60). Paul and Laura felt they were '*pulling back*' the project (CS3, O, Day 60) because the organisation was '*only thinking of the front end and not about the backstage stuff*' (CS3, I). Eric and Shona's team (CS3, O, Day 60) seemed stuck trying to get buy-in from senior management and dealing with stakeholders from different organisations.

Helen emphasised (Cs1, I) design's '*slowing down for understanding the problem better and connecting to people's real experiences*' as one of its greatest contributions. However, when narrating her experiences in a previous co-design project involving several organisations, she explained that (CS1, I)

Because the problem was so massive [...] we felt that [designers] spent a lot of time trying to understand our context. And we were kind of going ‘why do we have to explain all of these things’, so that was kind of, that held us up a bit.

Similarly, in a questionnaire (CS2, Q1) a participant noted that the designer was *‘the person who had the most to learn about the product and the working group’*.

Overall, despite acknowledging the value gained in exploring the context, actually taking the time to map out that context was attributed to designers’ lack of familiarity with it, disregarding the value that these activities can have on insiders, especially when multiple organisations and professionals with different priorities and experiences are involved.

Pride in discoveries

Design’s reframing exercises had an impact on participants’ perceptions of their problem and foregrounded assumptions and gaps in their knowledge in relation to the projects they were undertaking.

After the second day of training (CS3, O), all the teams felt they had to step back from finding a solution to rethink their project or questions, and there was a general acknowledgement that further research would challenge their assumptions. By the end of the training, Mark (CS3, O, day 90) noted *‘not making assumptions’* as a key learning outcome. Anthony (CS2, I) also referred to their project as *‘assumption-laden’*, and even though a practical exploration of users’ relationships with their product did not take place, he understood that designs’ approach was *‘testing those assumptions with people’*.

When public sector professionals actually engaged in practical exploration and interacted with users, colleagues, stakeholders or even data, some of their initial assumptions were transformed, and participants spoke with pride of those discoveries. For instance, Lee explained (CS3, I):

Initially, we were trying to look at, you know, trying to make the new solution fit the old system, which wasn’t very good. So, I think we’ve got a good understanding now that we need to make

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the system fit the users' needs, rather than the users' needs fit the system type of thing. So that's been a big thing for us as well.

Throughout the researcher's involvement (CS3, I and O), Eric's team kept using a user insight gained in their initial interviews with users as the motto for their project. Paul and Laura acknowledged (CS3, O, Day 90) that they had had the '*assumption that [their product] was being used*'. But when the users drew out their experiences, there was little mention of it, shifting their perceptions of the project entirely (CS3, I, Paul):

We started from the assumption we needed to update the system because the policy landscape had changed [...] But through the process, we got to that point where we are actually starting to question: is it in itself the right thing?

Some research participants even took pride in taking up the role of posing challenging questions inspired by design's reframing questions and strategies. In the second case study (CS2, Q2), a participant found himself '*asking many questions other people take for granted*'. Paul (CS3, I), building on IDEO's model of desirability, financial feasibility and technical viability (Figure 33), felt that they were beginning to '*ask questions that no one is particularly asking*'. They expected that questions such as '*what is it going to cost? What resource do we need to deploy to do this?*' would '*probably come at the end, once they had decided what to do, but not at an early stage*'.

Furthermore, Paul and Laura were the only team in the training that moved from organically transforming assumptions to systematically seeking to test assumptions. For instance, after a workshop session with stakeholders, they sent out a questionnaire '*around assumptions*', '*to tease out and confirm some of the things that [they] concluded from that session*' (CS3, I). Later in the process they also decided to hold another workshop with a different group of stakeholders for similar reasons (CS3, I):

We might get a different response to some of the questions we've asked previously. So we're hoping to see what that tells us. We have an assumption of what that might tell us. We assume that more front-line practitioners will have less knowledge of, and use the framework less. So that's what we want to test and tease out.

The turning point

Programme facilitator Marlene reported that (CS3, I), in their experience with other cohorts, once teams engage in Discovery the power of the insights uncovered transforms their mindset, becoming a 'turning point' in their engagement with the approach.

This turning point was very clear in Shona's descriptions of her experience with user-centred strategies (CS3, Ic). Shona worked in a public-facing service dealing with vulnerable users with complex needs. She explained that direct contact with users outwith the regularised procedures was not usual and was to some degree stigmatised. However, at a training session in her work unit, the instructor fetched a random user from the front-line engagement and asked him to tell the group about his experiences. In this encounter, Shona not only learnt about the user's first-hand experience but also realised where their services did not provide the support needed.

This previous experience had freed Shona from the value-judgements and stigma of learning from users, and made her prone to learning how to apply, evidence and pitch design's human-centred approaches.

Building on their experiences with other cohorts and trying to get public sector professionals quickly over this turning point in engagement, the design training programme promoted a '*just go and do it*' attitude (CS3, I, Marlene). For instance, by proposing 'talking to at least one user' as homework after the first two days of training (CS3, O, Day 2). However, as already seen (0), this was not sufficient for many public sector professionals to make that leap of faith into practical exploration of user research and involvement strategies. Furthermore, not even the value of discoveries was always sufficient for participants to engage with design's 'slow' approach to problem definition.

Facing wider change

The evidence suggests that design's more holistic and participatory approach to problem definition can widen the scope of the intended changes, increasing the complexity of projects and exceeding public sector professionals' capacity and decision-making powers.

As exposed earlier, as participants' engaged in practical exploration some of their core assumptions transformed and they began to ask questions no one else was asking, shifting the scope of their projects. As Anthony came to the realisation that he did not have the capacity to undertake development work, by engaging in discovery other teams on the training programme reframed their problems and found their projects required more profound, unforeseen changes.

For instance, by engaging with experts in different areas, Lee's team learnt that the current system could not support the changes they had envisioned, thus requiring again getting buy-in for an unexpected development phase (CS3, I). Additionally, Lee (CS3, I) noted that their project '*wasn't just a change in the system. It's a change in the culture*' (CS3, I) and thus there would be '*difficulties in getting even some of the senior management to buy in and give up*' some of their previous control in terms of handling internal resources.

Paul and Laura's understanding of the problem also moved beyond the initial product update. By undertaking user-journeys with stakeholders, they identified the need for creating new products for users who were not being served by the current system (CS3, I). By developing a service-blueprint, they identified operational gaps that could be improved. These were beyond their initial remit, and as such beyond their scope of action:

Through the process, we've got to that point where we are actually starting to question: is it in itself the right thing? [...] there is a reluctance to throw the baby out with the bathwater kind of thing. People are probably in the mind that we were at the beginning, that we have to tinker rather than completely ditch. But we have started to explore what could we additionally bring to that. [...] I suppose that is what has started to change in our thinking. It is the 'what do people need in that process' rather than 'what we think they need'.

Paul and Laura (CS3, I) had high autonomy to undertake project activities and complete support from their senior manager, Peter. However, they expressed feelings of frustration, explaining that they '*don't have the power to influence*' wider organisational decisions.

What Paul and Laura perceived as *reluctance to throw the baby out with the bathwater*, and being expected to *tinker rather than completely ditch* existing solutions, links with what

other public sector professionals and designers stressed more generally as the public sector's aversion to change. The complexities of implementing systemic change in public sector organisations resulted in the acceptance of low-quality processes or services, under the belief that 'this is the way things are' (CS2, I, Anthony) and cannot be changed (CS3, I, Lee). For example, when reflecting on the scope of the projects and the possibility of undertaking bigger changes to their product, Anthony (CS2, I) explained:

But it's tough, because, you know, people will not say this but we've always done it and we always will, and this is the way things are. And it's not that people want to do that [...] I think there's aversion to change generally in the organisation.

Similarly, Lee expressed (CS3, I):

From a customer's perspective, you know, a lot of these services are pretty poor. [...] But you know, [Council employees] just accept it is poor [...] it's one of those things that has been bad for that long it's probably just it's the way that it is.

Additionally, previous distressful and frustrating experiences of change also have an impact on public sector professionals' reluctant to go beyond tinkering. Eric (CS3, I), dealing with service integration across three organisations, explained:

I think the main challenges are burn-out in the staff, stress levels, not wanting to... wanting change but not necessarily having the energy to be part of implementing that themselves and thinking it through. Cause they have a history in that project of, not for a while, but of reviews, in participatory reviews and nothing happens. And that's I think something the public sector has a lot of that. And staff has become cynical—'here we go again'.

In the organisational restructuring context of the first case study (see p. 148), this research found similar attitudes towards the top-down changes undertaken, which generated anxiety and resistance, and increased mistrust towards management (CS1, O and E).

5.3.2 Collaboration: working with rather than against stakeholders

As discussed in Chapter 2 outlining the scope of context (2.2.1 and 2.2.4), there has been an increase in policy demanding greater collaboration across public sector institutions, services and departments with the purpose of integrating services and reducing administration and delivery costs (Lowndes et al., 2006, p.552; Shaw, 2013, pp.485–486; Stoker, 2006, p.56; Campbell, 2011; Williams & Shearer, 2011, p.8). This tendency in policy was mirrored in the projects studied. Five out of seven projects studied were cross-institutional or cross-departmental endeavours, two of them aiming at the integration of *‘separate services doing [their] own thing with an overlap at an operational level’* (CS3, I, Eric). Eric (CS3, I) pitched his projects to stakeholders by arguing that *‘there are various policy and legislation saying that [they] should be working together to be more efficient, reduce waste’*.

However, this research identifies several characteristics of public sector work that hinder the implementation of collaboration-oriented policies. These include challenges in recruiting stakeholders, a lack of a collaborative culture, and having to deal with complex dynamics and impoverished relationships.

Getting the right people around the table

Research participants emphasised the difficulty of gathering the right people *‘in the same place with a useful frame of time’* (CS1, I), which is accentuated by public sector professionals’ growing lack of time and capacity. When trying to engage stakeholders, public sector professionals’ were often told *‘Oh, but we’re busy that day’* (CS3, I, Eric). Similarly, the workshops delivered in the practice-based studies were often postponed and designers felt the time allocated for these activities was too short in relation to the expected outcomes. As Helen noted (CS1, I), *the challenge of gathering all relevant stakeholders hinders and delays decision-making*.

This lack of time affected equally projects where the users were other public sector professionals. For instance, Paul noted (CS3, I):

So I went out and did what turned out to be one-to-one interviews. Initially, I had the idea of going out and doing some focus groups. But it was impossible in the time frame to put focus groups together. My initial plan had been to go out with the seven local authorities, but I was struggling to get engagement.

Public sector professionals' lack of time can have a tremendous impact on the uptake of collaborative endeavours. If gathering together the right people within a useful timeframe is a challenge in itself, the implementation of policies targeting the integration of services and processes across institutions seems unlikely. Especially, as it will be later discussed, when the impoverished relationships across stakeholders require building rapport, which is not only difficult but time consuming.

A new meaning for collaboration

The evidence suggests that design's approach to collaboration seems to be somehow more collaborative than public sector professionals' prior experiences and expectations. As Neil noted (CS3, I), in design's collaborative spirit, they were working *with* rather than *for* or *against* stakeholders.

For example, Lee explained how he felt design's approach to collaboration felt different (CS3, I):

Previously, probably we would have relied on the specialist, you know these people [...] in our working group but more in a kind of a silo type environment. One that would be dealing with the finance side of it, maybe we would still probably have working groups and these types of things... but it's just maybe there is more... rather someone just being a representative from say the website side of it, they are there really as a member of the working group.

This suggests that while still having working groups involving a variety of stakeholders or experts, design approaches take these collaborations a step further in terms of their involvement. Design facilitator Marlene (CS3, I) also commented that '*public sector organisations have traditionally been set up with public sector professionals being the experts and working within silos*'. As a consequence, when engaging in a co-design environment,

even if no citizens are involved, it feels different to their earlier definitions of what collaboration means.

When these collaborations ran smoothly, participants' praised design's greater stakeholder involvement for generating 'ownership', 'buy-in' and 'encouragement to do stuff' (CS3, I, Lee). Even teams confronting greater collaboration challenges acknowledged that, if organisations with different perspectives start '*operating as a team in a formal way [...] you get synergy, extra energy, contribution and creativity*' (CS3, I, Eric). However, dealing with complex collaboration dynamics was very frustrating and discouraging, as explained next.

Herding cats

Public sector professionals working on projects aimed at service integration encountered particularly complex dynamics among stakeholders and partnering organisations. A major issue that surfaced was that sometimes '*the organisations working together mistrust each other*' (CS3, O, Day 60, Neil). Participants attributed collaboration challenges to '*the different cultures in those different services*' (CS3, O, Day 30, Eric) and a '*long history of poor relationships across institutions*' (CS3, I, Eric; CS1, I, Helen).

The training participants who had to facilitate complex interactions between stakeholders found these experiences exceedingly frustrating. For example, Mark complained that '*engaging with stakeholders, is like herding cats*' (CS3, O, Day 60). As he explained that (CS3, O, Day 90), '*you ask them to be honest, but then you realise you don't want them to be honest*' because there was '*a lot of blaming between services*'. Similarly, Eric (CS3, I) had to deal with '*disagreements and squabbles*' (CS3, I, A) and noted that when '*there were disagreements the respective managers went 'well, we're doing our own thing'*', disengaging from the process. These complex relationships among stakeholders contributed to participants' feelings of not moving forward in their projects. As Mark complained (CS3, O, Day 90), '*we haven't moved into 'our shit' yet, we are 'at your shit'*', as dealing with the problems between partnering organisations was an essential step for any progress.

Such frustrating experiences of having to facilitate complex dynamics may undermine the engagement of public sector professionals with collaborative strategies, conditioning

their future uptake of these approaches, not because they do not see value in them, but because getting stakeholders to collaborate is too difficult. This is indicated by the fact that public sector professionals' experiences of collaboration were more positive when the facilitation was done by designers rather than themselves. Even in situations involving complex group dynamics (p. 144), participants in the practice-based studies often praised the collaborative environment and designers' facilitation (CS1, Q1, Q2; CS2, Q1, Q2). By comparing between the practice-based and training-based projects, it could be inferred that the involvement of external designers may acquire greater relevance depending on the type of project and context, in this case the relationships among stakeholders.

Additionally, it is worth noting that design texts aimed at public sector professionals claim that 'involving everyone in the design process [...] creates support of colleagues and removes internal barriers' (Thoelen et al., 2016, p.18). These claims do not always match public sector professionals' experiences, which can undermine the credibility of design. As noted by public sector professionals involved in policy making (Bailey, 2016, p.22), designers assume 'that everybody is willing to participate in a collaborative creative process'.

Nonetheless, and despite the frustration of dealing with complex dynamics, as explained next, research participants emphasised the value of design's visual methods for aiding collaboration and taming these dynamics.

5.4 Expected further use

This section discusses how public sector professionals foresaw they would apply design-led innovation approaches in the future. Firstly, in general terms, public sector professionals were more likely to use particular methods and ways of thinking in combination with other approaches than to adopt design as a methodology. Secondly, this research identified three necessary evaluative steps or criteria that design did not fulfil in the eyes of public sector professionals and which therefore limited its uptake: firstly, a lack of evidence to evaluate design's suitability, secondly, seeing how design approaches compare to other methodologies, and thirdly, spotting opportunities for applying design approaches. The following four subsections outline these findings in greater detail.

5.4.1 Adopting aspects of design

Further use of design appeared to be fragmented, as rather than adopting design as a methodology, public sector professionals seemed more likely to adopt particular ways of thinking or methods. For example, senior manager Lidia noted that (CS3, I):

Whether they [the team attending the training] go through the whole process with everything they do, I think that's highly unlikely, but the skills they'll use them in their day-to-day work.

Similarly, Paul reasoned that (CS3, I):

So pieces of work [activities undertaken] in themselves are contributing to the wider knowledge. So if the whole package [design as a methodology] does the job or not, maybe doesn't matter.

Paul also noted that (CS3, I2), to fit into the public sector, design 'just need[s] to find a way to speed it up, a shortcut'. While it seemed unlikely that public sector professionals would adopt design as a methodology, some design tools and strategies seemed to have moved into participants' toolboxes. As Neil emphasised (CS3, I),

It's quite nice to have some examples of tools up your sleeve, whether you're using a design thinking approach or whether it's [a different] approach.

The design methods with the highest potential for being applied in other projects were tools for looking at users' experiences of their services and prototyping. Lee and Martha (CS3, I) reported wanting to make some of these tools available in their organisations through their *improvement framework*. Paul (CS3, I2) also acknowledged that '*some of design's thinking and language had kind of permeated their ways of working*', particularly '*the customer experience and prototyping*'. However, although he had considered using some of the tools in a project after the training (CS3, I2), he eventually discarded this option '*due to time constraints*'. Nonetheless he '*still [had] a pack of the materials in [the] drawer to drop on [...] when necessary*', as he thought these might be useful '*in a future day*'.

These insights can be contrasted with Bailey's study of Policy Lab (2016, p. 18), where public sector professionals also discussed design in terms of tools and methods. She partly attributes this fragmentation to how Policy Lab portrays design. However, the design training studied did not describe design in terms of tools, but as an innovation process and a set of principles aimed at shifting public sector professionals' way of approaching problems. Yet training participants, while discussing design by contrasting its strategies with their normal ways of operating (i.e. contrasting design's emphasis on discovery versus their solution-driven approach), focused on techniques and skillsets when discussing its future application.

5.4.2 Lacking evidence to consider further use

The evidence suggests that, in general terms, public sector professionals had yet to be convinced of the applicability of design approaches in public sector contexts. Programme facilitator Marlene compared this first Scottish cohort with previous groups elsewhere (CS3, I):

I think the other cohorts have felt much more energetic, engaged in the process. It really felt like dragging teeth in Scotland. So I found the Edinburgh cohort more challenging as a project manager to help them to deliver. I think the Edinburgh cohort generally, it's interesting cause it is reflected in the score because it has scored 7.8 and all other cohorts have scored 9.4 overall... so I'm not quite sure what that's about.

This section discusses in what areas public sector professionals lacked information or evidence to evaluate design or use it again, as well as the effects of this lack of information.

Lack of robustness in design's evidence-base

The application of design as a methodology faced objections similar to those encountered in the practical exploration of design research methods, as the methodology was also considered to lack robust evidence demonstrating its validity, suitability and contribution in public sector contexts. The scepticism that arises towards design methodologies in public sector contexts was illustrated by Neil's comments (CS3, I):

Some systems thinking processes for modification have a significant evidence-base behind them. And the evidence-base with design thinking... hmmm... was more about anecdotal evidence. That's not an invalid form of evidence but is less scientifically robust: 'these people did this process, and they found this useful, and this is what they managed to do when they got to the end of it'. [...] But in terms of challenging, that it didn't have an evidence-base in that kind of more rigorous form was also challenging.

Although few participants were so openly critical of the evidence behind design approaches, other observations support this insight. For instance, participants from all three case studies often referred to the value or usefulness of design methods and strategies as *potential*, denoting a certain restraint in asserting its actual value. Both Paul and his senior manager Peter (CS3, I) noted their interest in hearing about the challenges rather than success stories, and from the experiences of other public sector professionals rather than only from designers.

RESEARCHER *What challenges do you think that design approaches encounter in the public sector?*

PETER *I'm not talking too much about us, but I know that [design] needs to prove itself. You know, the prototypes and things that have worked. I like [Sheila's design agency]; I think they do good stuff. But they also tell you quite a bit about that. They have a number of projects, and I suppose some*

people would expect to hear how successful were some of these projects.

Now, it's ok for prototypes. But as a small organisation, it would be good to hear from the sort of challenges that arise in public sector. Cause I know that they've worked with [a public service organisation], partly successful and partly not successful.

Paul (CS3, I), while he still doubted the impact that small design agencies may be having in Scotland, found it *reassuring* to discover that there is a broader community exploring the applications of design in the public sector:

I have done a bit more of research [...] to see what was out there in terms of design thinking. And you know, seeing how much interest there is globally, and seeing where that journey is going, I suppose, felt that what we were doing was being involved in something that was not new exactly but relatively new and the ripple effect it was having. [...] just to see that it was something trending to say, out there, it was reassuring in a sense. But again, if you look at some of the big examples that are cited, the kind of NHS stuff... In terms of public sector that is probably the biggest service in a sense. And that is where you are seeing the early adopters of design thinking and where it's done and starting to influence and change services. So I don't know whether this smaller Scottish examples yet [are actually having an impact].

The relevance of first encounters

The relevance of public sector professionals' first encounters with design-led innovation approaches should be emphasised. Indeed, many training participants considered the exploratory projects undertaken to constitute their evidence for using a similar approach in the future. For example, senior manager Peter explained that (CS3, I), through this project, they expected to '*hopefully get a successful model where they can say that worked in the public sector*'.

Similarly, Neil emphasised (CS3, I)

If we're essentially trying out some of the techniques and some of the tools within the design thinking process, we can then be in a better position to say this is the right way forward for us. In that, there are other methodologies that we could be using to apply to this set of circumstances.

Just as training participants considered their projects as the evidence of whether or not design worked in their contexts, Helen's understanding of design and perceptions of its potential role and value were strongly shaped by early encounters. When discussing the characteristics, contribution and challenges of design-led public sector innovation, Helen (CS3, I and Ic) kept referring back to her first and most formative experience working with design and designers, a project that took place before the researcher's involvement.

By the same token, it is sensible to believe that participants would be less likely to use design in the future if the outputs of these projects were unsatisfactory, underlining the significance of first encounters. However, learning design takes time, and public sector professionals' explorations of design through these projects might be insufficient to make informed decisions about design's suitability and contribution. Especially when considering that public sector professionals may refrain from the practical exploration of some design methods and strategies due to the characteristics and constraints of working in the public sector. The next section exposes some of these obstacles.

Learning design takes time

Expecting public sector professionals to make informed decisions about the application of design approaches based on exploratory experiences might be unrealistic. As most of the participants noted, they could not consider themselves *experts* in design as a result of the training (CS3, I, Paul, Neil, Eric), and thus it was hard to evaluate its suitability.

As the following quotes evidence, learning design takes time, and public sector professionals' explorations of design strategies and methods were insufficient for public sector professionals to evaluate design:

NEIL
(CS3, I) *Senior managers [...] are a bit wary of how much we are able to get out of this kind of process, when we have struggled to put the right quantity of time or resource into it, from our own point of view. [...] I guess we're still kind of considering whether we would be using the same kind of set of tools and approaches.*

ERIC *We haven't used it enough to see what doesn't work. Or deep enough. [...]*

(CS3, I) *You do your thinking, you try to apply the learning, but there is a lack of confidence.*

PAUL *In order to do [the design approach] justice, we would have needed more*

(CS3, I2) *time and resources, to be able to do more work with customers.*

It is sensible to believe that public sector professionals' lack of capacity and refraining from practical exploration (0) can have a negative effect on both the success of their projects and their learning, as participants do not get to experience design's full potential.

Additionally, in his second interview (CS3, I2), Paul reported that their project had '*kind of faded out*' after the training, and noted that the evidence of design's impact was insufficient:

RESEARCHER *How much of the success (or otherwise) do you attribute to the design approach, or to other approaches?*

PAUL *It definitely informed our thinking... and... hmm... it helped us to influence others, really, other people's thinking too. Hmm, I think that... in terms of the outcome and the output, I don't know if it'd changed much if we hadn't done the project, I don't know it was much different... hmm... it's quite subtle. It is quite hard to tell whether that's the case or not. Cause it kind of, it was less obvious.*

Therefore, whether the success of those projects would support further adoption is less evident. On the contrary, as the following sections discuss, this was not the only criterion conditioning public sector professionals' choice of methodology in a given situation.

5.4.3 Comparisons with other approaches and methods

The findings chapter described how public sector professionals use their knowledge of other methods to conceptualise and evaluate design. Firstly, they use this knowledge to construct their understandings of design methods (section 0); secondly, it informs their decisions on whether to use design methods or instead other methods they judge to be more reliable or less time-consuming (section 0). Additionally, in deciding whether to apply a design-led

approach in another project, public sector professionals will compare design with other methodologies available to them (section 5.4.3). The evidence suggests that even if public sector professionals judge design methods and strategies as suitable, they are more likely to adopt other similar methodologies more established in the public sector. The evidence also suggests that more explicit evidence of how design compares to other methodologies may support public sector professionals in making an informed decision.

As noted throughout this chapter, different aspects of design were associated and compared with other approaches and methods, such as management, improvement and risk management methodologies.

RESEARCHER *What do you think is design's value to your public sector area?*

PAUL *[...] The design process is similar to other processes. [...] Co-production processes and some of the participatory budgeting fall in a similar kind of pattern [...] The kind of shift as well towards more engagement rather than consultation [...] Although I think it has value in itself, it is another version of other similar models that are going on, and so I don't think it's totally unique.*

RESEARCH *I have the feeling that the rhetoric of the Christie report and the Service Reform align with the philosophy of design? Do you see that in the same way?*

PAUL *Yeah, I think it does. And that is why it is hard to answer some of the [interview] questions and hard see design as a distinct process, because the general direction of the public sector is the same.*

Paul also associated design's context-driven approach with the prevention agenda (p. 201), and its participatory nature and flexible process with co-production processes, which, as he explained, *cannot be replicated due to their need to adapt to the specific experiences of the citizens involved.*

Participants also suggested that making design's overlaps with other approaches more explicit could support their understanding and evaluation. As Neil explained (CS3, I),

Anybody who's coming to a course like this has got some kind of prior knowledge of having to try and do things differently, creating new services, redeveloping, managing, improving... so we've already come with a range of techniques, knowledge, skills and experience. And I think I bit more explicitness about how it might compare with those other things... [...] comparing design thinking as a process with other forms of business or service improvement, would be helpful. And I think to have that from the outset would have been helpful, cause we could have known where it could have helped.

Furthermore, making explicit how design approaches and methods compare with, complement or outperform other approaches and methods can be a way of harnessing its unique selling points and fostering uptake. For instance, Lee and Martha (CS3, I) compared design's user-centred methods with the software *Lean Six Sigma*, widely used in public sector organisations:

LEE Services are more likely to use or take up [user-centred design methods] than some more complex systems, like Lean Six Sigma. You know, there's quite a length in doing complex projects through that. [...] Even if it's just some of the [design] tools [...] you might get something from it. Whereas some of the other tools are a bit more, you need to know a bit more of it to be involved.

MARTHA Some of them are similar, but I get your point. I guess they could be packed up as a kind of toolkit to look at the user.

Additionally, a lack of explicitness on how design compares to other methods used in the public sector can undermine designers' credibility. For instance, even though training leader Marlene had worked in the public sector for over two decades even before her engagement in public service innovation, Neil attributed this lack of explicitness to designers' lack of awareness of public sector methods:

I do appreciate that the people that were providing us with the course might not be familiar with those other techniques and processes, and that's my job as somebody who's heard about these two things to figure out the differences.

Public sector professionals will associate design strategies and methods with other similar approaches with which they are familiar, and these associations do not always support their understanding or uptake. If, as the evidence suggests, making explicit how design compares to other approaches can facilitate public sector professionals' understanding, evaluation, and uptake of design, it is an avenue worth exploring.

5.4.4 Spotting opportunities to use design

Finally, the evidence indicates that for public sector professionals to consider further use of design-led approaches, they need to be able to identify projects where they can use design and envision how they would use it or procure it. This closes the learning cycle and links back to the design procurement phase, discussed at the beginning of this chapter.

In general terms, public sector professionals struggled to see clearly in what kinds of projects they could apply design methodologies. Neil, for example, expressed needing more explicit descriptions of where to apply design (CS3, I):

Some problems don't need that kind of solution [...] you don't necessarily need a design thinking approach [...] It would have been helpful to have had a bit of: 'these are the kinds of scenarios where design thinking approaches can be applied successfully, and these are ones'... perhaps made more explicit where it doesn't... you don't need to use these kinds of methods. We had to kind of work that one out for ourselves. [...] There are loads of examples where you just wouldn't apply design thinking [...] to try and understand the problem. You just sometimes need to fix the problem. A leaky tub just needs a plumber to fix the leaky tub.

Similarly, during the training, Laura and Paul had identified opportunities for using design in other projects (CS3, I and O). However, in his second interview, Paul recognised that they '[hadn't] uniquely taken anything and said: 'let's start something and let's use design''. When asked in what kind of projects he would consider using a design approach, he answered (CS3, I2):

PAUL *[gasp] that's a really hard question to answer... hmm ... [pause] ... I don't know ultimately. [...] I think I would have to consider the kind of*

practicalities of the projects in terms of the time available, in terms of the resources, in terms of being able to engage with customers essentially, as part of the process. [...] I think that even some of the internal changes that are happening in our own organisation could learn from some of the approaches. Whereas some of the engagement we have is at times tokenistic, rather than actual true engagement. [...]

RESEARCHER *What would be the conditions or characteristics of a project for you to say 'I'm going to do this through design'; apart from time and resources, which are really important.*

PAUL *I think it would be one where we say... So I'm involved in [project name]. And actually, if there wasn't so much pressure to move quickly, that would be an opportunity where... [...] It's that customer focus element [...] I had not really reflected on that until we had this conversation. But actually thinking about that I probably now I think should see whether there are opportunities to apply that within that piece of work.*

Just by reflecting on it, Paul was able to identify further opportunities for applying design methods and strategies in his current work that he had not previously recognised. This fact tells us that it is possible to reinforce public sector professionals' learning and support them in spotting opportunities for a more sustained application of design.

Given the context-driven nature of design innovation practices (p.40,45), defining design's scope of application is not simple. As designers acknowledged (CS3, I, Sheila), *'the unknown of what we will deliver'* becomes a challenge in pitching design. Design-led innovation approaches are malleable. Building on a broad and flexible process, set of principles and methods, design practitioners regularly adapt design's approach and tools in response to the situation's needs and affordances. Nevertheless, the evidence suggests that public sector professionals would benefit from a more concrete definition of the kinds of projects or problems design can tackle. This research contributes to this gap by iterating the Design Council's *Public Sector Ladder* (2013), as discussed in the next chapter.

More generally, public sector professionals questioned the kinds of problems to which design could be applied and whether it could cater to public sector needs. For example, three teams in the training felt their projects were too big or complex. In other studies, public sector professionals using design for the first time also reported that they would have preferred to undertake 'smaller scale or less complex projects' (Swiatek, 2016, p.39). By contrast, due to the high cost of design consultancy, public sector professionals are advised to procure design 'for the projects that are extremely important, or too extensive or complex to tackle on your own' (Thoelen et al., 2016, p.30). More generally, the literature often portrays design as best suited for complex and 'wicked problems' (Venturi, 2008; Jonas, 2005; Young, 2005; Johnson et al., 2005; Cross, 2006; Rittel & Webber, 1973). But these claims are contradicted by participants' experiences. For instance, Helen also found challenges regarding the complexity of problem when defining the scope and role of design in a previous project (CS1, I):

So we [the public sector professionals involved] came and said: this is the problem.

And they [the designers] said: Oh my God, that's enormous! We can't possibly tackle that enormous problem!

And we [the public sector professionals] kind of had to say: but these are the problems that we have, we don't have a choice. We are the Government, we can't say 'we won't do that, it's too big'.

Participants experiences and perceptions of design are more in line with Mulgan's criticism (2014, p.5) of the discipline for claiming to be uniquely positioned to solve complex problems and being over-celebrated.

5.5 Articulation of research findings

This chapter has presented the empirical evidence describing how public sector professionals evaluate design-led innovation approaches by following their journeys from procurement to sustained uptake. Through this journey the chapter has described public sector professionals' views and decisions about the application and suitability of design approaches, methods and strategies at different stages of their projects, and what factors played a role in shaping those views and decisions. In doing so, provides the empirical evidence used in the next chapter to answer research questions and present key research findings, contributions and conclusions. Although all of these will be discussed in detail in the next two chapters, this section offers an overview of research findings.

Firstly, in terms of the process, the evidence suggests some evaluation and decision-making stages that are critical for the uptake of design approaches and methods: (a) procurement: where the roles of design and designers is shaped; (b) leap of faith: where, after conceptualising what design methods and strategies can do for them, public sector professionals decide whether or not to apply them in their projects; and (c) turning point: where designers expect a change in public sector professionals' perceptions of design approaches after seeing its strategies and methods used in practice. These evaluation stages have associated a number of findings, such as public sector professionals' fragmentation of the approach as they envision adopting specific methods rather than the approach, or designers need to convey design's value at a theoretical level to encourage practical exploration.

Regarding the second research question, this research captures a variety of interconnected factors shaping public sector professionals' views and decisions about design's suitability. *Individual factors*, such as public sector professionals' prior knowledge of design or experiences using other methods in the public sector, impacted how they conceptualised and evaluated design's suitability. Public sector professionals refrained from practical exploration or future application of design methods and strategies due to *organisational constraints*, such as hierarchical accountability and the expected fast pace in

solution provision, individuals' lack autonomy, time and capacity, and public sector professionals' risk management strategies and concerns regarding the ethical implications and reliability of user-centred methods. In some projects, these organisational constraints were accentuated by *contextual complexities* particular to their projects and contexts, such as service provision for vulnerable users or for the public at large, or having to deal with complex collaboration dynamics. At an *interactional level*, the way in which designers portray design through language and artefacts also had an impact on public sector professionals' understanding of design methods and strategies and decisions about suitability. Finally, this research notes that the *wider socio-political landscape* had a more indirect impact, shaping the types of projects and organisational standards. A detailed description of these categories and the individual factors identified are presented in the next chapter.

Finally, building on these insights and as a result of the dialogical analysis, this research offers three key findings, as summarised at the beginning of the chapter.

The first key research finding is concerned with how public sector professionals identify opportunities for applying design-led innovation practices. A lack of awareness of what design can do led to expectations of design and designers that can limit the procurement of design-led innovation approaches. But also, public sector professionals' with a basic understanding of design-led innovation struggled to spot opportunities to use these approaches, strategies and methods when thinking of future applications. Collectively, these findings expose the field's need to define more concretely the roles that design and designers can play in public sector contexts.

The second key research finding is concerned with the language and exemplars use to explain how design can be applied in public sector contexts. The research reveals that *descriptions and representations of design that build on language and exemplars from other contexts of application, ie. profit-driven contexts, not only are ineffective in supporting public sector professionals to understand design methods and strategies and how to apply them into their projects, but also generate mistrust and disengagement. During their practical*

exploration of design methods, participants also felt that some design strategies did not take into consideration the complexities of their contexts, such as dealing with complex collaboration dynamics among stakeholders or users' negative bias towards obligatory public services. These insights reveal the need to communicate, and possibly adapt, design approaches, methods and strategies in a way that relates to public sector professionals' realities.

The third key finding is concerned with how design relates to other methodologies and methods used in the public sector. Firstly, the evidence shows that public sector professionals use their knowledge of other methods and approaches to conceptualise design, which can lead to Secondly, when it came to deciding whether to apply design in the future, public sector professionals sought to contrast design's performance with that of other methodologies already established in the public sector. However, they found this information lacking. In some cases, this lack of explicit comparison between design and other methodologies and methods was a cause for disengagement. But public sector professionals also contrasted their experiences of using design with their 'normal ways of working' and identified specific challenges and contributions of applying design, which suggests that their knowledge of other methods and strategies could be harnessed describe design-led innovation approaches effectively.

The fourth key finding is concerned with the possibility of navigating some of the organisational and contextual constraints identified. This research notes that, while public sector professionals' often expressed how design principles and strategies (such as being user-centred or collaborative) aligned with the general direction of policy and were similar to other approaches being used in the public sector, their experiences using design strategies and methods hinted the opposite. Research participants struggled with design's emphasis on understanding the context, as they found challenging design's strategies for reframing the problem and felt they were moving backwards. Despite their aims of improving users' experiences and understanding better user needs, actual research and involvement of users was limited, unless users were other public sector professionals. Design's collaboration

strategies were also found to be more collaborative, possibly more equalitarian and participatory, than their previous experiences of collaboration. These insights hint to the gap between the intentions of policy and the actual integration of user-centred and participatory strategies. Also the evidence suggested that some projects or contexts might be more complex and require different types or degrees of support. These insights will be articulated into proposals for navigating organisational and contextual constraints in the discussion of findings.

The next chapter answers research questions through updated conceptualisations of public sector professionals' evaluation process and the factors influencing their decision. It will also discuss the key research findings and contributions.

Chapter 6

DISCUSSION OF FINDINGS AND CONCLUSIONS

ENHANCING PUBLIC SECTOR PROFESSIONALS' UPTAKE OF DESIGN

The previous chapter described how public sector professionals perceived and evaluated the suitability of design-led innovation approaches at different stages of awareness and comprehension, and within the particular situations of their projects. Although some observations have already been contrasted with current literature, this chapter discusses research findings in relation to research questions and the literature. Contributions, limitations and future research are discussed in the next chapter.

The first section focuses on answering research questions and details the conceptualisations of the evaluation process and ecosystem. The second section discusses key research findings, and develops propositions in response to some of the gaps identified in design communication and capacity building. In this process, the section begins to explore how the results from this research overlap with, differ from and expand current knowledge. The third section discusses research findings in relation to the literature and contemporary debates in the field. The final section presents research conclusions and builds the argument against one-size-fits-all design communication and capacity building strategies, as the evidence suggests that tailoring communication and public sector professionals' learning experiences to their needs, contexts and aspirations can (a) enhance the credibility and comprehensibility of design approaches in the public sector; and (b) support in navigating some of the organisational constraints present in the public sector.

6.1 Answering research questions

This research sought to understand *how public sector professionals evaluate the application of design-led innovation approaches, strategies and methods in their work, and what shapes their decisions*; and thus studied how individuals' views and decisions emerged and evolved through their interactions with design practice and practitioners in the particular contexts of their projects. In essence, the analysis sought to: (1) unpack how concrete decisions were made; (2) examine any convergences and divergences across projects; and (3) reconstruct a more holistic overview of the processes and ecosystem shaping decisions. This section answers the research questions and, in doing so, presents empirical reconstructions (Charmaz, 2014, p.188; Bryman, 2004, p.540; Creswell, 2007, pp.19, 21) of (a) public sector professionals' learning and evaluation processes, and (b) the broader ecosystem shaping their decisions. Firstly, this section presents the convergences found in learning and evaluation as well as their impact on design uptake. Examining public sector professionals' decisions in the context of project interactions revealed distinct levels, stages, and critical steps in their evaluation processes. Secondly, the section articulates what shaped concrete decisions and reconstructs (a) some of the evaluative questions underlying decisions, and (b) the ecosystem shaping those decisions.

RQ1: How do public sector professionals' evaluate the application of design approaches, strategies, and methods in their work?

This research observed two levels of evaluation and decision-making: (a) considering using design as the overarching approach in a project, and (b) considering the application of specific methods and strategies in a particular situation. For simplicity, these will be referred to as (a) holistic evaluation, and (b) method evaluation. These two levels of evaluation are interconnected, as public sector professionals' update their vision of the discipline's suitability with every new interaction they have with design practice. However, they can be associated with different evaluative stages.

The stages of this process were implicit in the structure of the Findings Chapter, as it introduced public sector professionals' views and decision-making processes through the stages of (1) procurement, (2) theoretical exploration, (3) practical exploration, and (4) further use. Although the Findings Chapter introduced this journey as a linear process (p.196) to represent the structure of the chapter, it also emphasised the connections between the initial and final stages of the journey. Public sector professionals' decision-making processes while considering procurement and further use correspond with holistic evaluation at different degrees of design awareness. Method evaluation, on the other hand, occurs during the implementation of the project, through theoretical and practical exploration. By representing this evaluation process as a spiral, it is possible to reflect the iterative nature of the process as public sector professionals embark upon further procurement and deepen their knowledge of design-led innovation with every new interaction (Figure 40).

Figure 41 maps some relevant findings on this empirically developed process. This visualisation of public sector professionals' learning and evaluation journey has some resemblance with the research initial conceptualisation based on Krippendorf's (2006) model of product use (Figure 42A), as it represented a learning and evaluation process through the basic stages of (1) becoming aware, (2) exploring through use, and (3) engaging in further use; and the intermediary evaluative steps of (a) procurement, and (b) appropriation. But as this section discusses, it also shares characteristics with action learning models (Figure 42B).

Unpacking this process in a sequential order, firstly, public sector professionals need to assess and decide when, why and how to apply a design-led innovation approach building on the project's needs and their understanding of the approach. At this stage, evidence suggests that, public sector professionals' preconceptions and expectations of design and designers' role and contribution can hinder procurement of design-led innovation practices.

After procuring the approach, public sector professionals engage in **theoretical exploration** and **practical exploration** of design methods and strategies. As in action

learning processes (Kember, p. 24), they undergo a spiral of cycles of planning, acting, observing and reflecting (Figure 42B). Through **theoretical exploration**, they conceptualise and envision how to apply particular design strategies and methods in their situation. The evidence showed that this theoretical exploration did not always fulfil public sector professionals' evaluation criteria. At this stage, public sector professionals can choose to refrain from the practical application of design methods and strategies or can take a **leap of faith** and test them in practice. Designers expected that public sector professionals' **practical exploration** of design methods became a **turning point** in their engagement with the approach, as they would have then experienced its contribution.

The second iteration of **holistic evaluation** overlaps with the reflecting phase in action learning processes (Figure 42B), as public sector professionals reflect on their experiences and learning to inform future action. Evidence suggested that public sector professionals *fragmented* the approach by only considering further use of some of its methods and strategies, as they felt they *lacked evidence* of its suitability for further procurement, and struggled *spotting opportunities* for further application.

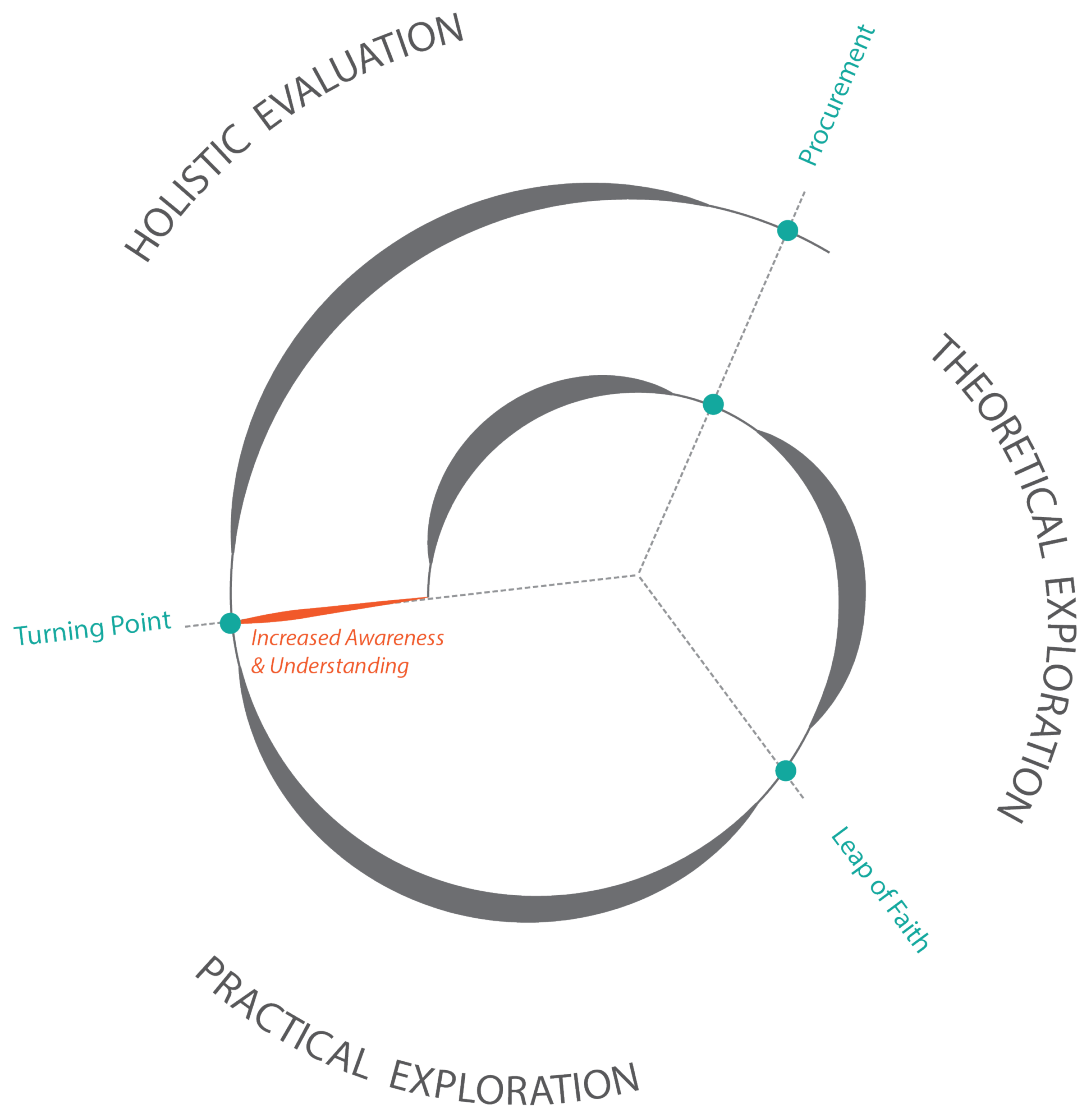


Figure 40 Empirically-based learning and evaluation journey

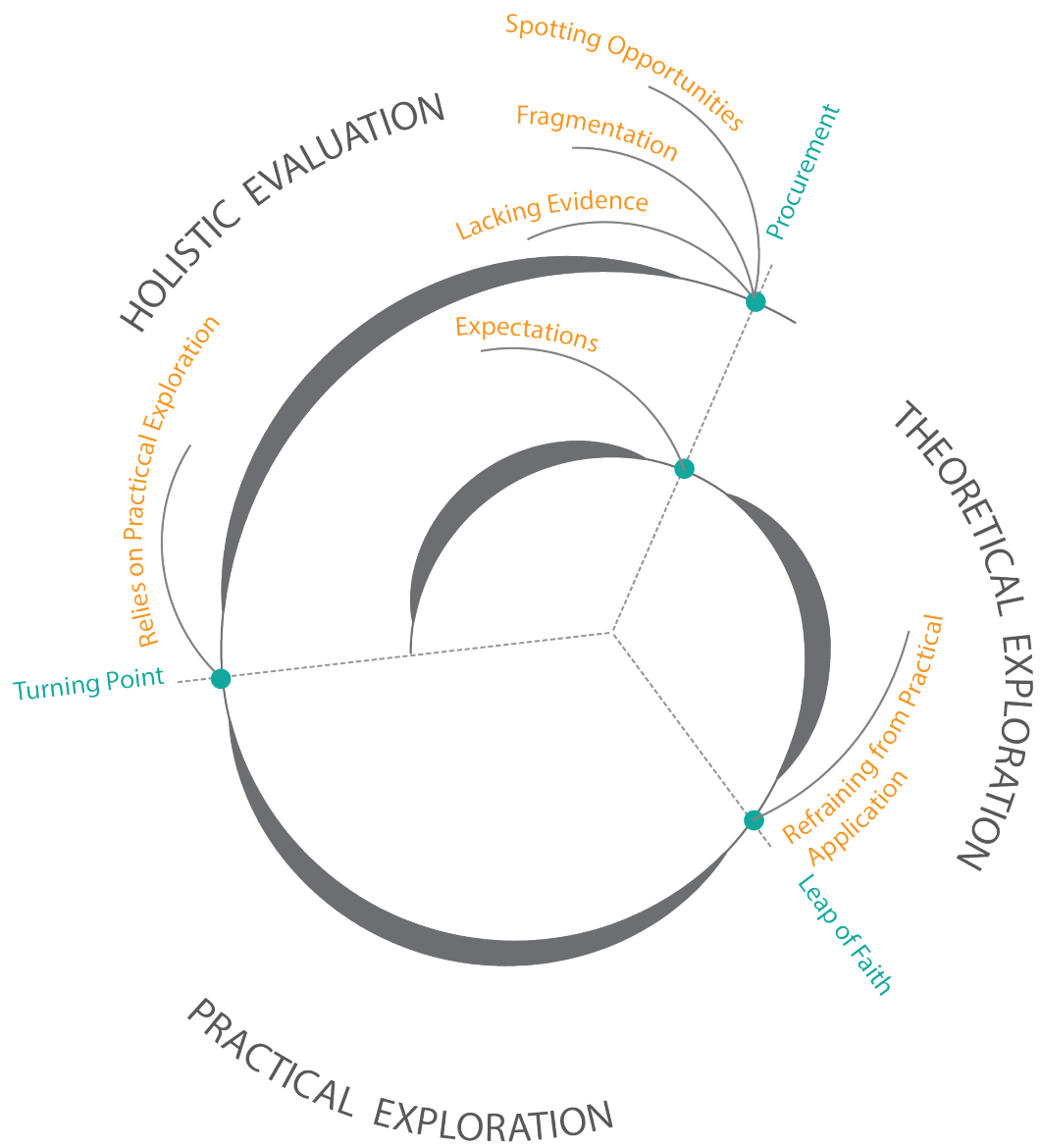


Figure 41 Some key empirical insights mapped onto the conceptualisation of public sector professionals' learning and evaluation journeys

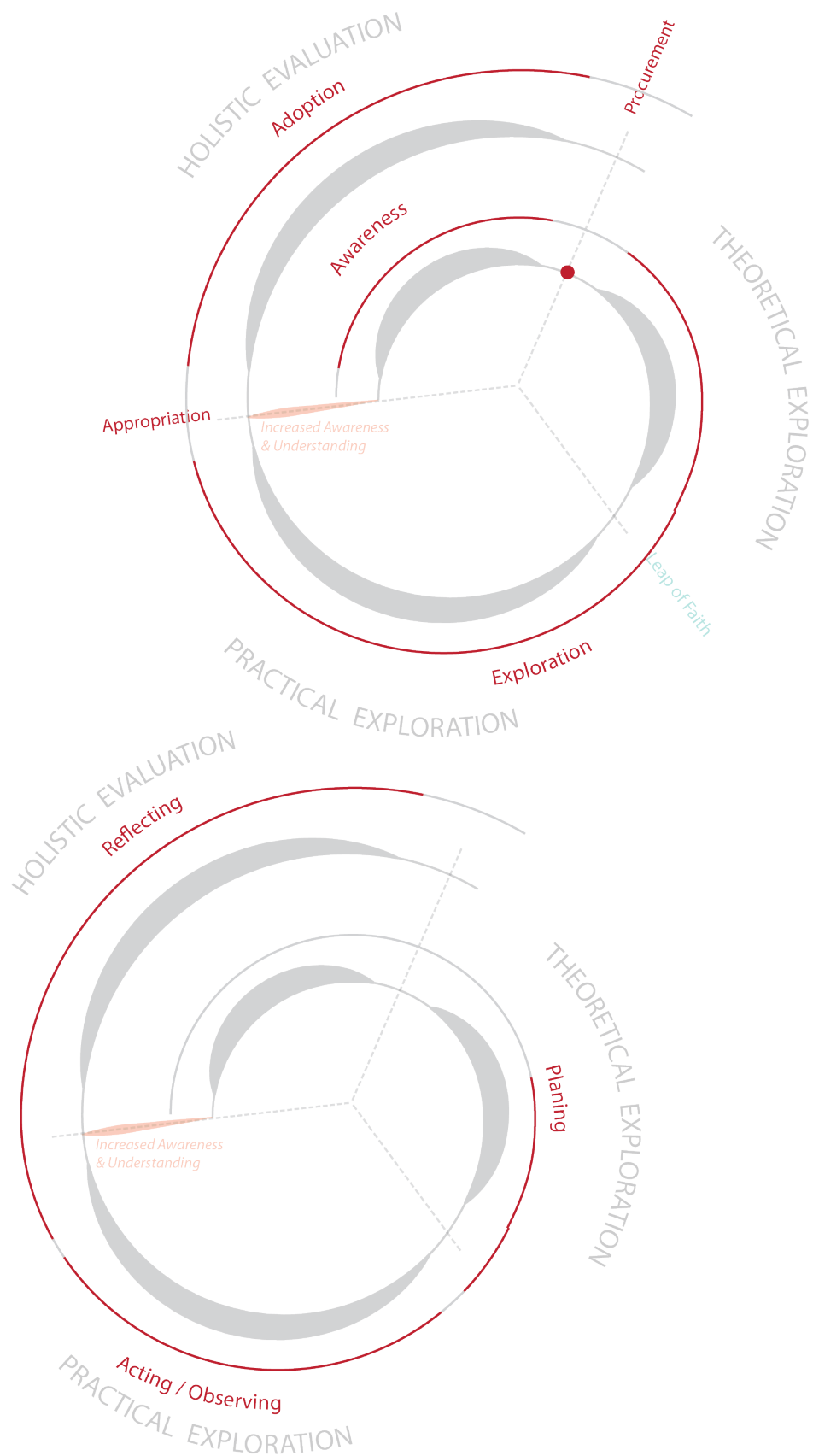


Figure 42 Overlaps between the empirically-developed conceptualisation of public sector professionals' learning and evaluation journeys and (A) conceptualisation of uptake based on Krippendorff's model, and (B) action learning

This representation of public sector professionals' journeys exposes the close connection between design awareness and uptake. The convergences found at different stages of project development reveal critical steps in their learning and evaluation process. The next question looks at the convergences found in what shaped concrete decisions.

RQ2. What shapes public sector professionals' decisions on the application of design approaches, strategies and methods in their work?

To decide whether or not to apply design approaches, strategies and methods, participants consistently took into consideration four complementary aspects of suitability: (1) reliability, (2) contextual appropriateness, (3) organisational suitability, and (4) comparability. These complementary aspects determined both holistic and method evaluation. Attending to convergences in participants' reasoning behind decisions, four fundamental evaluative questions can be inducted (see table below): (1) Can I trust it will work? (2) Would it be appropriate in this project/context/situation? (3) Does it fit organisational standards/constraints? and (4) Do we already have something similar that does the same or a better job?

Table 15 Public sector professionals' evaluative questions when assessing a new approach or method

	Methodology Level	Method Level
Reliability	<i>Does it work?</i>	
Contextual Appropriateness	<i>In which kind of project can I apply design?</i>	<i>Is it suitable for this particular context?</i>
Organisational Suitability	<i>Does it fit within the institutional culture, standards and constraints?</i>	
Comparability	<i>Do we already have something similar that does the same or a better job?</i>	

(1) Can I trust it will work?

Participants often questioned the evidence behind some design as a methodology, its methods, and its contribution. Their concerns included both the validity of strategies and methods (Martin, 2005, p. 5), and whether outcomes would meet the desired objectives; and their replicability (Martin, 2005, p. 5), the predictability and consistency of outcomes.

(2) Would it be appropriate in this project/context/situation?

Design strategies and methods are evaluated in context. Evidence must be relevant to their contexts and proof design's success inside the public sector and in projects similar to theirs. When justifying their rejection of design methods, public sector professionals often noted that their contexts entailed greater complexities and responsibilities. This was often the case with services targeted at vulnerable users, where the ethics of design research methods felt inappropriate; but there was a broader concern that design was not suited for the complexities of working in the public sector.

(3) Does it fit organisational standards/constraints?

Participants across projects emphasised design's lack of organisational fit, as they saw the time available to them as insufficient for taking a design approach; struggled to fit design methods within standards of practice in their area; or did not get managerial agreement to apply design strategies.

(4) Do we already have something similar that does the same or a better job?

Public sector professionals evaluate design approaches, strategies, and methods in relation to other methods used in their area of work, and they will revert to methods that incur a lower risk or seem more reliable. Participants who hold concerns on reliability, contextual appropriateness, or organisational suitability are more likely to favour other methods they trust or are more established in their areas.

To answer these evaluative questions, public sector professionals contrasted their evolving conceptualisations of design against their perceptions of what was suitable in their work, organisation, context, and project.

Although participants' conceptualisations and criteria varied across individuals and contexts, the analysis has produced a comprehensive account of factors playing a role in shaping their decisions (presented in Table 16 to Table 20). Seeking to reconstruct the broader ecosystem shaping evaluation, these factors were clustered into five areas of influence: (1) individual factors: prior experiences and knowledge; (2) interactional factors: design rhetoric and artefacts; (3) structural factors: organisational traits; (4) contextual factors: types of projects and contextual complexities; and (5) wider policy and social landscape. It is worth noting that these factors act simultaneously and are 'inextricably linked' (Charmaz, 2006, pp.126–127), and thus there are overlaps and interdependencies between them. Building on these categories and their relationships, this research reconstructs the theoretical framework to conceptualise the Public Sector Evaluation Ecosystem (Figure 43).

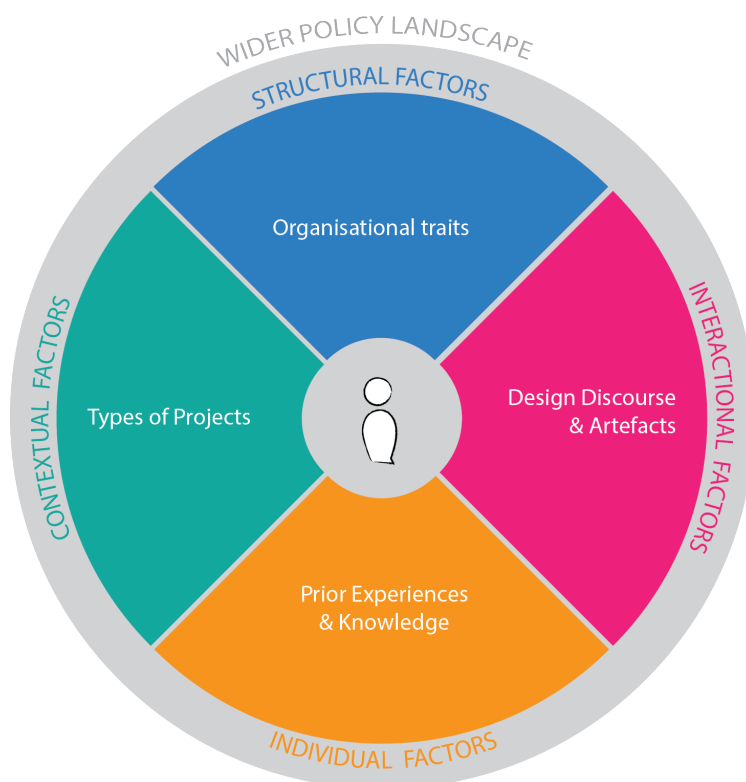


Figure 43 Public sector evaluation ecosystem (author, 2018)

Individual Factors: Public sector professionals’ knowledge and previous experiences regarding both their work in the public sector and design-led innovation practices had an impact on public sector professionals’ understanding, procurement and evaluation of design strategies and methods. The categories for individual factors are shown in the table below.

Table 16 Individual Influencing Factors

Individual Factors	
Public sector professionals previous experiences and knowledge or lack of them	
Preconceptions and Expectations about design	Public sector professionals’ preconceptions of design do not match design-led innovation practices but define when and why it is procured and the expected role of the designer.
Definition by Association	Public sector professionals build their conceptualisations of design through association with other methods and approaches they know.
Comparability	Public sector professionals contrast design with other methodologies available to them to decide whether or not to use design approaches, strategies and methods.
Working Experience	Previous negative experiences of change or collaboration may limit the application of design strategies.
Lack of Experience	A lack of previous experiences using design-led innovation approaches can contribute to public sector professionals’ rejection of practical exploration of design methods and strategies.

Organisational Factors: In the learning, evaluation and uptake of design-led innovation approaches, public sector organisations are the behavioural settings that determine how public sector professionals’ think and act (Argyris & Schön, 1996, p.7). Organisational traits serve to ‘support, maintain, impede or change’ (Charmaz, 2003, pp.94–95) public sector professionals’ actions, acting as *promoters* and *inhibitors* (Amabile, 1988) of design uptake. This cluster distinguishes between (1) structural traits, defined as how workload and decision-making are structured within the organisation; and (2) cultural traits, defined as the ways of working and thinking that are engrained within public sector professionals’ practice. The categories for organisational factors are shown in the table below.

Table 17 Structural Influencing Factors

Structural Factors: Organisational Culture and Structure	
Structural Traits	
The way in which workload and decision making are structured within the organisation	
Autonomy	Public sector professionals’ ‘freedom [or lack of it] in deciding what to do or how to accomplish a task, a sense of control over one’s own work and ideas’ (Amabile, 1988, p.147)
Hierarchical Accountability	Public sector professionals’ power [or lack of it] in influencing decisions.
Time and Capacity	The degree to which public sector professionals can free up time to undertake development or design work, and expectations that they do development work on top of their normal activities.
Expected Pace in Solution Provision	Public sector professionals are expected to work at a high pace in terms of solution provision, and are accustomed to move directly into development.
Cultural Traits	
Ways of working and thinking that are engrained in public sector professionals’ practice.	
Risk Management and Aversion to Change	Ethical and reliability concerns emerged regarding the use of design research methods
Expert Culture	Understanding of knowledge and expertise as enacted by individuals rather than groups, and professionals rather than laypersons.
Lack of Collaborative Culture	The public sector’s siloed and hierarchical structure, together with its expert culture, translates into a lack of collaborative practices and consultation experts working in isolation rather than collectively solving problems.

Contextual Factors: Contextual factors are distinct from organisational factors because these are dependent on the situation or type of project. The same individuals within the same organisational constraints might be more receptive to applying design methods and strategies or might need different learning support depending on the characteristics of their projects and context. In general, contextual factors were seen in this research to accentuate learning challenges and organisational constraints in response to complexities that public

sector professionals regarded as particular to their projects or area of work, such as the types of projects or their relationships with users and stakeholders. The categories for contextual factors are shown in the table below.

Table 18 Contextual Influencing Factors

Contextual Factors: Particularities of the project and context of application of design	
User Types and Relationships with Users	Ethical and reliability concerns regarding the use of design research methods were accentuated in services targeting vulnerable users. Concerns regarding reliability and sample representation were accentuated in services targeting the public at large.
Relationship with and between Stakeholders	Complex dynamics between stakeholders can hinder application of design's collaborative practices.
Object of Design	At first, public sector professionals designing intangible or abstract assets, such as processes or systems, struggled to see how to apply design in their projects.

Wider Socio-political Factors: Wider socio-political factors, such as the policy landscape and pressures from the public, had more of an indirect effect on evaluation and uptake by determining organisational regulations, types of projects, and participants' perceptions of what they should be doing. These factors are shown in the table below.

Simultaneously, these factors have also had an impact on how designers pitch design, by for instance offering it as a way of achieving efficiency savings, as described in the literature review (2.3.4). For these reasons, this area of influence has been represented as an overarching layer (Figure 43).

Table 19 Wider socio-political influencing factors

Wider Socio-political Landscape: Social context, policy landscape and public sector regulations and standards	
Integration and Involvement Policies	Policies instigating service integration, collaboration across institutions and public consultation had an impact on the types of projects being undertaken and public sector professionals' perceptions of what they should be doing.

Interactional Factors: How designers describe, represent and explain design-led innovation approaches, processes, strategies and methods played a crucial role in public sector professionals’ comprehension and evaluation. This research has found that maybe even more important than how designers communicate design is how they do not, as it identifies (1) *ineffective representations of design*, descriptions of design that did not support public sector professionals in (a) understanding design methods and strategies, (b) understanding how to apply them into their projects, or (c) evaluating its suitability; and (2) *informational gaps*, mismatches between the information public sector professionals’ need to understand or evaluate design approaches and the information provided by designers. The categories for interactional actors are shown in the table below.

Table 20 Interactional Influencing factors

Interactional Factors: Descriptions and Representations of Design Approaches, Strategies and Methods	
Ineffective Representations of Design	
Ways of working and thinking that are engrained in public sector professionals’ practice.	
Exemplars and Language from other Areas Different to the Public Sector	Public sector professionals did not engage with language, or otherwise considered exemplars and language imported from other areas of design application, such as product design or profit-driven environments, as evidence of design’s contribution and role.
Informational Gaps	
Information that public sector professionals needed to understand or evaluate design approaches.	
Overlaps and Differences with other Approaches	Linked with the individual factors ‘definition by association’ and ‘comparability’, public sector professionals demanded descriptions of how design overlaps and differs from other methodologies.
Spotting Opportunities	Public sector professionals struggled to identify further opportunities to apply design approaches and methods.

Conclusion: How do public sector professionals evaluate the suitability of design approaches, strategies and methods in their work?

In summary, in order to decide whether or not to apply design approaches, methods and strategies, public sector professionals take into consideration their reliability, contextual and organisational suitability, and how these compare to other approaches and methods available to them. They seek to answer these questions by continuously contrasting their understanding of design and its methods, with their evaluation criteria.

On the one hand, public sector professionals iterate their conceptualisations of design strategies and methods through interaction with design practice and practitioners, as part continuous and iterative learning and evaluation process. This research identifies critical evaluative steps where learning and uptake may be disrupted if public sector professionals' understanding of design approaches does not fulfil their assessment of reliability, contextual appropriateness, organisational suitability and comparability.

On the other hand, their evaluation criteria are strongly tied to their previous knowledge and experiences in the public sector. Their previous experiences shape their perceptions of what is reliable and what fits their projects and contexts, and whether there are other methods that can achieve better results or save resources and time.

6.2 Implications and strategies for enhancing design uptake

This section discusses the meaning and implications of research findings, while proposing strategies for enhancing public sector professionals' learning, evaluation and uptake of design-led innovation approaches, strategies and methods.

6.2.1 Scope of action of designers

Looking at the Public Sector Evaluation Ecosystem from a practical standpoint, there are different degrees to which designers can tackle these limiting factors. These influencing areas could also be clustered in two wider groups: setting and capacity building (Figure 44).

- The public sector setting: Factors such as policy, the organisation, the contexts and individuals' prior experiences working in the public sector, can be more widely seen as environmental factors determined by the setting.
- Design capacity building: Interactional factors such as design rhetoric and artefacts or training activities and format, can be more widely seen as designers' strategies for building public sector professionals' design capacity and embedding design practices in the public sector.

Designers cannot directly or immediately influence the nature of the public sector, the type of projects and contexts in which public sector professionals operate, or public sector professionals' perceptions of what is suitable in their work. However, the way in which design is portrayed outside the discipline falls within designers' remit (Figure 45).

Communicating and teaching design in a way that supports public sector professionals' learning and evaluation of the approach and its methods is designers' responsibility and main scope of action for enhancing design's uptake. As it will be elaborated in the discussion of contributions in the next chapter, spotting in what areas designers have a greater scope of action for enhancing learning and uptake constitutes one of the main contributions of this research.

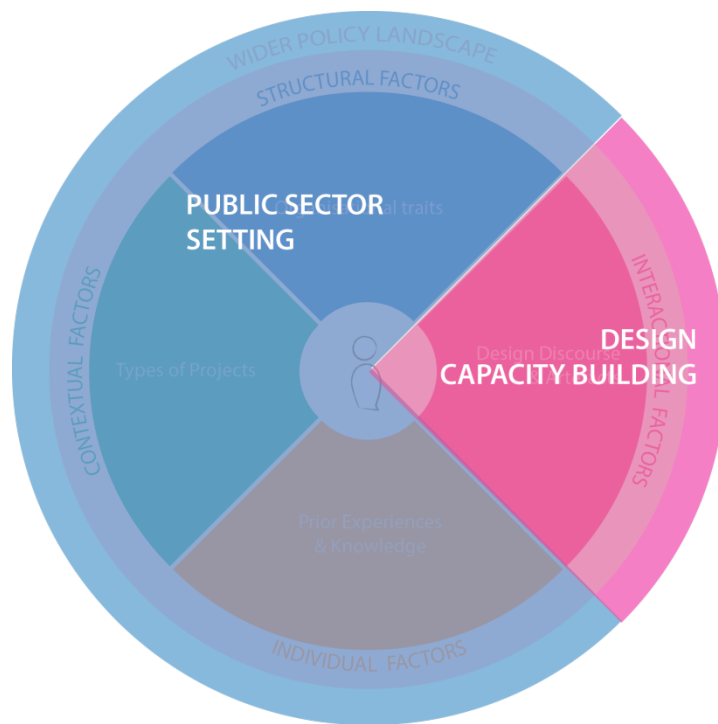


Figure 44 Wider Areas of Impact

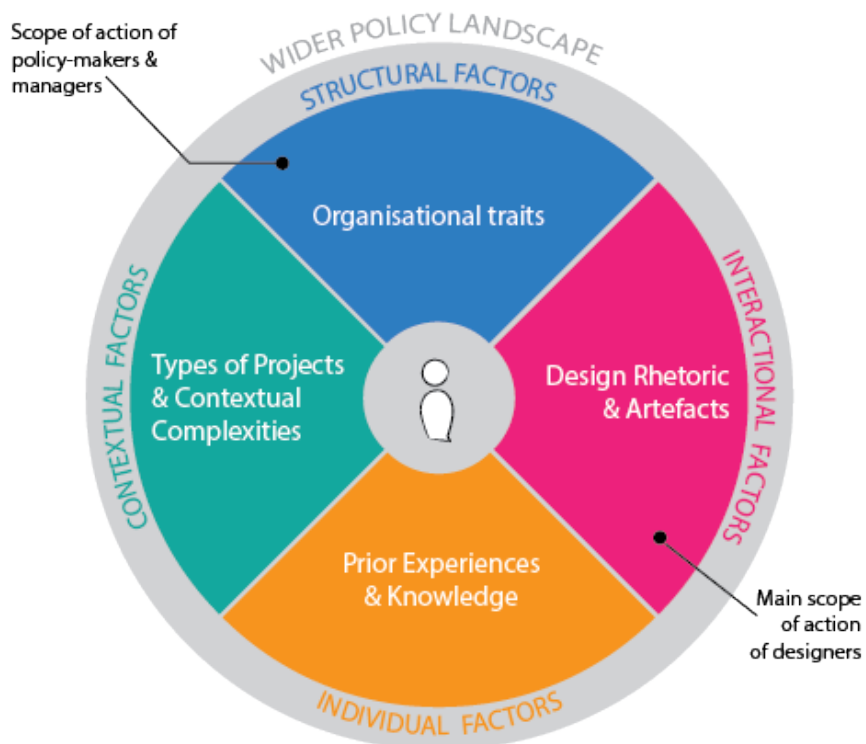


Figure 45 Scope of action for enhancing public sector professionals' uptake of design-led innovation approaches

This insight into the impact of designers' interactions and communication strategies led to the dialogical analysis undertaken in the third analytical stage (Appendix I), which explored the interplay between how designers communicate design and how public sector professionals interpret design rhetoric and artefacts conditioned by the public sector setting and their previous knowledge and experiences. This analysis is of particular relevance to the contribution of this research, as contrasting both the representation and the interpretation revealed gaps in design communication and training and led to the formation of key research findings discussed next.

6.2.2 Communicating design in context: Relating to public sector professionals' realities

Design Professor Paul Rodgers (Rodgers, 2013, p.196) and Geoff Mulgan (2014, p.2), Chief executive at Nesta, agree that design has been over-celebrated and that some of the claims regarding its contribution have not been realistic, calling for humbler representations of design. These research findings partially support this claim. Although what Mulgan labels as 'over-inflated claims' of contribution (2014, p. 1) this research identifies as statements of value that do not relate to public sector professionals' *reality*.

A key instance of this was the fact that public sector professionals did not consider exemplars of the application of design in other contexts different to the public sector to be evidence of design's role and contribution and disregarded language that did not relate to them. For instance, profit-driven language or product-based examples of design's contribution did not help build the credibility of design's potential value in public sector contexts.

Public sector professionals need reliable information on which to make decisions about design. Design cannot expect to build reliability by utilising examples from outside the public sector, as design's suitability will be evaluated in context. Other environments and types of work do not mimic the targets, complexities and organisational constraints within which public sector professionals will be operating. For this reason, public sector

professionals expressed their desire to hear about the challenges and value of applying design in public sector contexts from other public sector professionals rather than solely from designers.

Public sector professionals perceive designers' omission of the complexities of working and applying design methods and strategies in public sector contexts as a sign of ingenuity or arrogance, sounding like 'blue-sky thinking' (Swiatek, 2016, p.35,39) or 'over celebrated' (Mulgan, 2014, p.2). For instance, regarding collaboration, design texts claim that 'involving everyone in the design process [...] creates support of colleagues and removes internal barriers' (Thoelen et al., 2016, p.18). In turn, public sector professionals claim that designers assume 'that everybody is willing to participate in a collaborative creative process' (Bailey, 2016, p.22). This kind of scepticism is to be expected, as the more established asset-based approaches are also perceived to 'sound too rosy' (McLean et al., 2017, p.31).

Furthermore, the public sector is not a uniform entity. An international survey on co-design practices in the public sector showed that, depending on the sector or area of application, different aspects of design predominated, and suggested the 'need to tailor co-design to the specific needs of different' public sector areas (Bradwell & Marr, 2008, p.31). This research shows that public sector professionals also evaluated design strategies and methods differently depending on the particularities of their context, projects, and area of work. Just as both the design approach and evaluation criteria are adapted in response to the context, so the way in which design is explained must necessarily be tailored to the particular needs and challenges that public sector professionals will face in their work. Research participants needed to see how design strategies and methods translated into their particular types of projects and area of work. Until they reach proficiency in design and they can adapt the approach to particular situations (Bailey, 2012, p.38), it is designers' role to translate design's overarching processes and strategies to the particularities of different projects.

The public sector encompasses all kinds of services, varying widely in their offerings and contexts, providers' area of expertise and user expectations (Mager, 2016, p.19; Bradwell & Marr, 2008, p.36). Design-led innovation approaches are applied in a wide range of public

sector areas (Armstrong et al., 2014, p.24; Kimbell, 2009b, p.9; Bradwell & Marr, 2008, p.21) and with a wide range of purposes (Yee et al., 2015a, pp.2, 14). Despite this wide range of applications, design's contribution to the public sector is discussed independently of the sector or purpose of design's application, as presented in the Scope of Context (2.3.4). As Kimbell has argued (2009, p.3), accounts of Design Thinking often overlook 'the social contexts in which design activities take place'.

Design discourse disregards how it fits within different public sector contexts. For instance, in contexts where users are seen as a 'captive audience' or unable to discern what is best for them, arguing for user-centred approaches by claiming that insights about the quality or relevance of services must come from users (Thoelen et al., 2016, p.19) will not be sufficient. Likewise, claiming that qualitative design research methods are 'the only way to discover what people truly want' as they are 'emotional motives' (Thoelen et al., 2016, p.12), will not convey the contribution that design can make. Claims of design's value that argue that 'it makes no sense to design a service on the basis of figures for an average user' (Thoelen et al., 2016, p.12) are unlikely to persuade public sector professionals of design's suitability in services targeting the whole population.

In summary, public sector professionals need to know how design applies to their context and deals with the complexities of working in their public sector area. Language and exemplars imported from other contexts will not aid in understanding design methods and strategies, nor serve as proof of design's contribution. Furthermore, omission of the challenges experienced in the application of design in public sector contexts undermines design's credibility.

6.2.3 Communicating design in relation to other fields

This research provides empirical evidence supporting what design authors have been suggesting for some time, that design needs to articulate its contribution in relation to other fields of knowledge (Young, 2013, p.186; Inns, 2013a, p.191; Mulgan, 2014, p.2). As Mulgan points out (2014), design methods are a synthesis of methods from many fields. As such,

participants in this research recognised some design tools and identified many overlaps with other approaches. However, descriptions of design rarely make explicit the overlaps and differences with other approaches. This research shows that public sector professionals' knowledge of other methods and methodologies not only affects their decisions regarding the suitability of design but also their understanding of how design methods work.

This research shows that, whether they had used something similar before or not, public sector professionals conceptualised design strategies and methods through association with other methods and approaches they knew. Not harnessing public sector professionals' existing knowledge of overlapping methodologies can lead to confusion and misconceptions. It is sensible to believe that developing explanations and representations of design in contrast or association with approaches more established in the public sector can facilitate faster and more accurate understanding of its approach. This echoes Mulgan's argument (2014, p.2) that design needs to articulate how it complements and is complemented by other fields of knowledge because of the disciplines increasing integrative and collaborative intentions (Friedman, 2003, p.508; T. Brown, 2008; Stickdorn & Schneider, 2011; Armstrong et al., 2014, p.20).

This research shows that public sector professionals need to know whether and how design outperforms other similar approaches available to them and already more established in the public sector. Lack of clarity on how design overlaps and differs from other methodologies available does not allow public sector professionals to compare design with other methodologies to make an informed decision and undermines design's credibility. As Paul noted, 'design is one among many others'. For design-led innovation approaches to progress in the public sector, designers need to understand and demonstrate how their discipline differs from and outperforms other methodologies public sector professionals are already using. Making explicit how design overlaps with and differs from other approaches can bring awareness to both its limitations and advantages and can support evidencing its contribution in the public sector. For instance, participants acknowledged that design user-

centred tools were easier to use than Lean Six Sigma, the current software used in the public sector. This difference indicates a unique selling point that design can harness to its benefit.

The scope of this research does not provide a substantial account of the associations on which public sector professionals may build their understandings of design. Additionally, the methodologies and strategies used by public sector professionals may vary depending on the public sector area and geographic location. But it is in designers' interests to use contextual knowledge to construct accurate understandings and expectations of what their practice may look like.

Public sector professionals' associations with other approaches should also inform design training. Design training should place more emphasis on the aspects of design with which public sector professionals are unfamiliar. For instance, if public sector professionals are likely to simplify prototyping to risk aversion strategies used in their work, then design training should place particular emphasis on the types of prototyping they have not seen before.

Conceptualisation through association is the most obvious example of how public sector professionals' experiences of working in the public sector and knowledge of other methods shape their perceptions of design. But there are more subtle ways in which their internalised experiences of working in public sector organisations and contexts shape their interpretations of their interactions with design practice and practitioners. For instance, while designers claim that the public sector is slow due to bureaucratic procedures (Mager, 2016, p.21; Hopiavuori & Alonso, 2016, p.75), public sector professionals feel they are 'going backwards' because of design. This discrepancy reflects different expectations regarding the time allocated at different stages of the process. Designers expect to move quickly into field research and spend time understanding the context. On the contrary, public sector professionals expect to move directly into defining solutions and are accustomed to working within hierarchical accountability structures. These different experiences entail a divergence in how public sector professionals and designers understand the term solution-driven. While

public sector professionals mean ‘defining a solution’, designers mean ‘exploring through unpolished solutions’. These differences need to be made explicit.

In summary, making explicit how design differs from and outperforms or complements other approaches can help public sector professionals to generate accurate expectations and understandings of design-led approaches. This harnesses design’s unique selling points and supports public sector professionals in making informed decisions regarding their application.

6.2.4 Developing more concrete descriptions of the roles that design and designers can play in public sector contexts to support procurement

As a fragmented discipline, ‘design can do many things, [and] people are getting confused about who designers are and what we do’ (Xiangyang, 2013, p.225). This research defined design-led innovation approaches through its differences with more traditional conceptions of design, such as its increasing inclusiveness and the shifting roles of making. Professor Inns (2013a, pp.188–191) notes that designers today are expected to work and behave in the same way ‘their predecessors’ did, and argues for the need to ‘build different expectations about what design is’. As discussed in the scope of context (p.40,45,50), designers have continuously updated their representations of design processes and roles in response to emerging understandings and with the aim of communicating these shifts to clients.

This research has found that public sector professionals’ expectations of design can limit procurement in two ways: firstly, they can lead to late procurement due to public sector professionals’ associations with the production of tangible outputs, and secondly, they can hinder the collaborative nature of design-led innovation approaches, as public sector professionals may expect designers to work from outside the organisation. This research also found that public sector professionals with a fair understanding of the approach and its methods still struggled to identify opportunities for applying design-led innovation approaches. Collectively, these insights suggest the need to develop more concrete

definitions of the roles that design and designers can take in the public sector in order to support its procurement. Building on the gaps identified and the design literature, this research would like to propose the development of the *procurement ladder*, a visual representation of design and designers' roles in the public sector.

The procurement ladder (located in the next page) follows the logic behind other design representations discussed in the scope of context (section 2.1), such as the Danish Design Ladder, the Public Sector Ladder or the Capacity Model, which seek to raise awareness of the shifting roles and applications of design.

This exploration posed two analytical questions inspired by empirical insights:

Q1. To navigate public sector professionals' expectations of designers working from outside the organisation and emphasise the collaborative nature of design-led innovation approaches, how can we better describe the roles or relationships that designers can have with the context of application, including project, stakeholders and organisation?

Q2. To support public sector professionals in spotting when they can apply design and emphasise the intangible applications that design-led innovation can have, how can we better describe the roles that design approaches can take within public sector work?

The development of the procurement ladder seeks to answer these questions building on the existing literature, empirical insights and the researcher's understanding of the field as a design practitioner. But it is worth noting that it opens up debate rather than providing conclusive answers. As described in the introduction of the Findings Chapter, *the Procurement Ladder* is a post-empirical development that has not been put into practice. Although it might support designers and public sector professionals in procuring design-led innovation approaches in its current state, the classifications of design and designers' roles here proposed require further research and development. Nonetheless, this visualisation serves to discuss this research insights in the context of existing literature and intends to advance the field's discussion into how we can better support procurement of design-led innovation approaches in the public sector by effectively design and designers' potential roles to public sector professionals.

THE PROCUREMENT LADDER

INCORPORATING DESIGN-LED INNOVATION APPROACHES IN PUBLIC SECTOR CONTEXTS

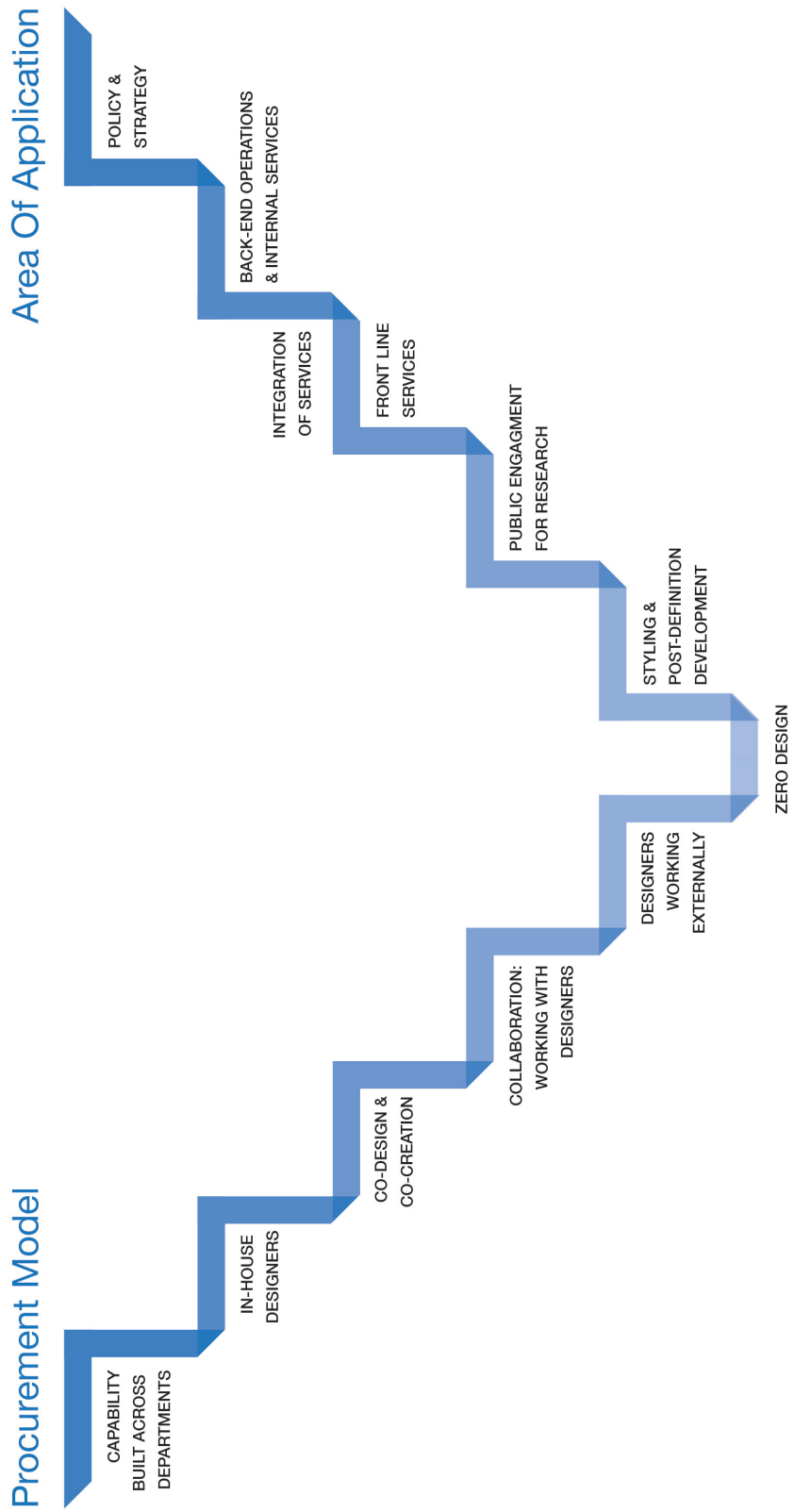
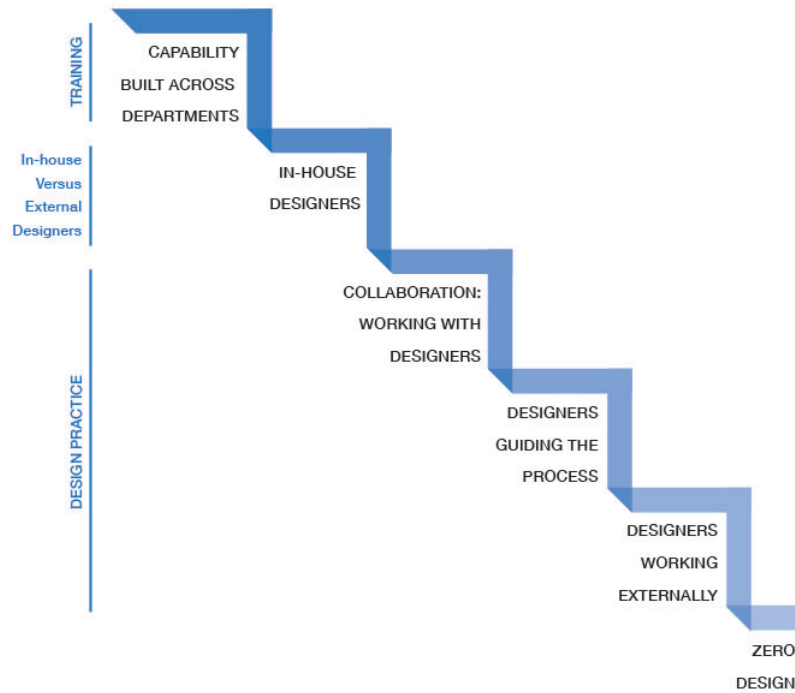


Figure 46 Procurement Ladder

Procurement Model



Designers Working Externally

In this case, designers act as a traditional consultancy agency. They will deliver an agreed intervention, such as a series of user workshops, or develop solutions from outside the organisation, with little involvement from staff or users.

Collaboration: Working with Designers

In this case, designers will work closely with the organisation, involving staff, users and other stakeholders with research, ideation and development purposes. The degree of collaboration can vary. Members of staff involved in the process may gain design capabilities.

Co-design and Co-creation

In this case, rather than designing the outputs, designers will be designing the process and the tools to your organisation in developing solutions. This is a collaborative process involving staff, in-house experts, users and other stakeholders throughout the project. The organisation will need to allow sufficient time for building the appropriate collaborations, and give staff the capacity and autonomy to get involved in the process.

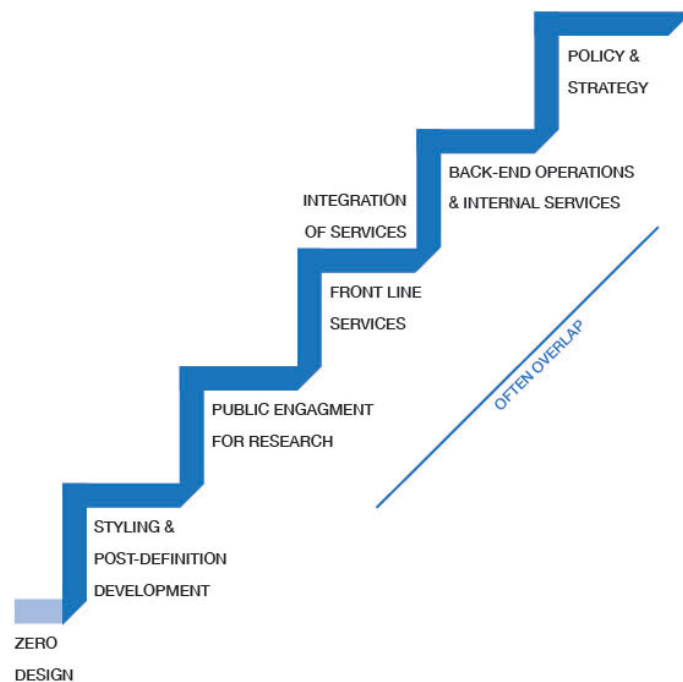
In-house Designers

In-house designers may equally undertake design projects through different degrees of collaboration with staff and different degrees of involvement on behalf of users and stakeholders. Designers from within the organisation might be more familiar with the organisational culture and, depending on their relationship with the project, may have greater knowledge of the problem. Likewise they may lack perspective and give some things for granted.

Capability Built Across Departments

In this case, staff across all levels of the organisation would have a basic understanding of design processes and methods. Public sector professionals and departments would use design methods and strategies as they see fit in their practices and projects. You can procure designers to provide training and build design capacity in your organisation.

Area Of Application



Styling & Post-definition Development

Conceptualisation and development of solutions or products building on the specifications provided by the organisation. Although it may entail some kind of user-research problem and key specifications are developed by the organisation.

Public and Stakeholder Engagement

Design's user-centred and participatory strategies and visual methods are used for a particular purpose within a project. This can be to explore a problem, identify users' and stakeholders' needs and aspirations, coming up with ideas or testing potential solutions. Depending on the purpose outcomes can vary, from specifications, to concepts, to early prototypes.

Front Line Services

These types of projects focus on improving the users' experiences and designing their points of contact with the services. Generally this requires some kind of research for identifying gaps and understanding the needs of different users. These can be face-to-face or digital services, directed to the public or to specific groups of users. Alterations in service provision may incur major changes in the organisation's ways of working.

Back-end Operations & Internal Services

These types of projects focus on improving the processes and operations behind service provision; generally with the purposes of aligning front-end and back-end operations and making services more cost-effective. Design's mapping tools and participatory strategies are used to identify gaps and overlaps across teams and divisions, and designing processes that take into consideration and support professionals at all its layers of implementation.

Policy & Strategy

Design's holistic and collaborative strategies, its visual mapping methods and creative process, are also applied to more abstract matters, such as the development of policy, strategy, or protocols.

Service Integration

These type of projects aim to join up services provided across multiple organisations. They seek integration of front line services to provide smooth experiences, and of back-end processes and operations to minimise use of resources. As they include multiple organisations and services, these projects are of higher complexity and require more time and resources.

Q1. Defining the roles or relationships designers can have with the context of application to navigate expectations and emphasise its collaborative nature

First of all, it is important to note that when this research refers to designers' role, it does not refer to the skills and value designers bring to the table as facilitator, communicator, capacity builder, strategist, researcher, entrepreneur or co-creator (Yee et al., 2009). Communication of these roles might as well play a role in procurement, but did not emerge in the empirical data gathered. Instead, this research seeks to define designers' role in terms of their relationship with project, stakeholders and organisation. The empirical evidence from this research suggests that public sector professionals who have not worked with designers before may expect designers to work from outside the organisation. This responds to the notion of the designer as the expert that comes into the organisation and, with a very light touch or no interaction with staff and users, goes away and develops solutions that clients did not know they needed or were possible, as described by research participants (5.1.2). Whereas public sector professionals who had already worked with designers noted that design innovation practices felt more collaborative, and some designers noted that they 'took organisations with them in the process' (CS3, I, Sheila).

Nonetheless, some design texts targeted at public sector professionals seem to reinforce the expectation of designers to 'come up with answers and solutions' (CS2, I). The design toolkit for the public sector developed in the SPIDER project (Thoelen et al., 2016, p.30), warns public sector professionals that 'many service designers merely act as consultants that use participatory techniques and hardly "design"', and advises people to 'avoid them'. As a design innovation practitioner, the researcher found this assertion not only arguable but also unsettling, as it does not recognise transformational approaches (p. 48) – those in which designers create the infrastructure to help others designing – as 'design'. This quote embodies an emergent tension within design by juxtaposing the designer as the problem-solver versus the designer as the process facilitator, the know-what versus the know-how.

Paraphrasing two design companies, co-design epistemologies argue that the people closer to the problem have the expertise, insight and motivation to solve it (Claro Partners),

and thus the involvement of employees and customers ensures that design solutions are practical and fit culturally (Think Public). At the design training programme studied, one of the invited speakers also noted that, in co-design contexts, the designer becomes a ‘steward’ of the process and the people involved (CS4, O). This aligns with Han’s (2010, p.201) research as she notes that service designers are moving away from ‘producing’ into ‘leading’ and ‘facilitating’.

The researcher agrees with the SPIDER toolkit (Thoelen et al., 2016, p.30) in that designers ‘add value to the results that come from the users and the co-design workshops, and they shape the visualisations and prototypes’. But that does not necessarily imply having a major role in developing the outputs. It is almost a commonplace in context-driven design practices that the outputs of the design process are unknown at the beginning of the project, and thus their development beyond conceptualisation might be beyond the scope of skills held by designers. Therefore, advising public sector professionals to avoid designers that use participatory strategies but do not ‘design’ seems counterproductive to the expansion of design-led innovation strategies in the public sector. Particularly taking into consideration that public sector professionals already associate designing with the implementation of outputs, as empirical evidence suggested.

The design literature, however, is more specific regarding designers’ roles or relationships with the context and distinguishes between design being applied *for*, *with* or *by* (Eason, 1992; Kaulio, 1998) public sector organisations, which resembles this research classification of the three case studies as consultancy, collaborative and training-based. These also overlap with McDonald’s definition of the roles that designers take in healthcare settings (2017, p.311):

- (1) acting as sole designers, consulting as required;
- (2) involving and empowering other, non-designers, to design alongside themselves, thereby extending the design team;
- (3) relinquish their own involvement, provide the tools and processes they use and let others, i.e. non-designers, get on with the designing.

The Design Capacity Model (Christensen & Madsen, 2014) (Figure 48), aimed at profit-driven organisations, adds nuance to the Design Council's Public Sector Ladder's two first steps concerned with the degree of integration of design and designers within the organisation. It does so through two dimensions: (1) design awareness, defining at which organisational levels employees hold skills in design; and (2) design capabilities, whether designers are employed by the organisation or externally hired. Bailey's research (2012, p.34) on capacity building in the public sector provides examples of both embedding designers through the creation of a design department and of raising employees' awareness and skill in design strategies and methods.

Building on the roles described in the literature, the Procurement Ladder proposes five categories to guide design procurement: (1) designers working externally, (2) collaboration: working with designers, (3) co-design and co-creation, (4) in-house designers, (5) design capability built across departments. As the ladder goes up, each step displays increasing degrees of integration of designers in the organisation, from having designers working externally, to increasing degrees of collaboration, to everyone in the organisation becoming a designer.

The descriptions these different relationships or roles also include other empirical insights. In the procurement of external designers (1st, 2nd and 3rd steps) these categories attempt to define the required organisational involvement in the process, to make explicit that some approaches to design require greater resources and involvement on behalf of the organisation. The procurement of in-house designers exposes some of the advantages and disadvantages of designers being insiders or outsiders to the organisation, which emerged in the practice-based studies.

Q2. Defining the roles that design approaches can take within public sector work to support public sector professionals' in spotting opportunities for application.

This research found that public sector professionals' expected design and designers having a role at implementation stages, but did not envision them having a strategic input in the definition of outputs. Yet, when they had an understanding of design's pre-implementation activities, they also struggled identifying opportunities for using design-led innovation approaches.

Defining when public sector professionals can use design and with what purposes is complex. The roles that design-led innovation approaches can play in the public sector are diverse, and not easily reduced to a list. The public sector encompasses all kinds of services, varying widely in their offerings and contexts, providers' area of expertise and user expectations (Mager, 2016, p.19; Bradwell & Marr, 2008, p.36), and design can be applied in different public sector areas (Armstrong et al., 2014, p.24; Kimbell, 2009b, p.9; Bradwell & Marr, 2008, p.21) and with a wide range of purposes (Yee et al., 2015a, pp.2, 14). However, some empirical insights from this research can help understanding the kinds of information public sector professionals need to make decisions.

As a participant claimed before engaging in learning, they wanted to '*learn how design can be applied to intangible products, because design feels tangible*' (CS3, O). Representations such as the Danish Design Ladder and the Design Capacity Model (Christensen & Madsen, 2014), as seen in the scope of context, communicate design's role by escalating from the most tangible to the most abstract and strategic applications of design. The Design Capacity Model (p. 287) becomes more specific to the incorporation of design in profit-driven organisations by determining design's purpose and use in relation to internal processes. Following this approach, it should be possible to particularise design's general expansion into abstract and strategic domains in relation to public sector organisations' internal processes or purposes. However, no clear classifications or definitions of design's applications in the public sector were found in the literature reviewed. In response to this gap and to the question 'in what kind of projects can public sector professionals apply a

design methodology', this speculative inquiry seeks to understand how different roles of design fit within public sector organisational purposes.

To examine the roles that design-led innovation approaches play in public sector projects, this research compiled a list (Table 21) drawing on empirical insights and the literature on types of projects, how designers articulate design's contributions (discussed in the scope of context) and how design companies offer their services. These were subsequently clustered to describe increasing degrees of intangibility in relation to their purpose within organisational processes. Table 21 provides an overview of the types of projects considered and how they were clustered. This clustering responded to a variety of insights.

Firstly, public sector professionals already distinguished between tangible and intangible applications of design, as what they expected or knew of design was different to what they were experiencing.

Secondly, as discussed in the scope of context, existing representations of design's application in the public sector identify policy as the highest degree of integration (Design Council, 2013, pp.62–65). *The procurement ladder* includes strategy in this last step because senior managers in public sector organisations may not have an input in policy, but can still apply design methods and strategies in the development of organisational strategy. This was maintained as the last step of application because research is beginning to demonstrate (Whicher, 2015) that design can have greater impact when incorporated at a strategic level.

Within public service innovation, the procurement ladder differentiates between front-end and back-end, while emphasising that these categories are not mutually exclusive and overlaps are likely to emerge. Some times the application of design specifically seeks to improve back-end operations, such as integrating new technologies (Design Council, 2013, pp.40–41). There are also service improvement projects which outputs do not interfere with back-end operations or disrupt existing systems (Design Council, 2013, pp.44–47). But design researchers (Hung, 2012, p.250; Kotamraju & van der Geest, 2012b, p.271) have noted that public sector professionals underestimate the impact that redesigning users

experiences and front-end interactions will have on internal operations. Research participants seemed to quickly appreciate the value of design in understanding users' experiences and improving their interactions with the services (front-end), but also noted that their projects required changes in processes and systems (back-end) that were beyond the scope of their projects. For these reasons the procurement ladder distinguishes between front-end and back-end applications of design while emphasising those overlaps.

On occasions design research and collaborative methods are used without the intentions of improving a service or producing policy, but to spot service opportunities (Sangiorgi et al., 2015, p.28), engage a community or understand their needs and aspirations. Thus this was extracted as different application.

This research also included a number of projects intended at integrating services from multiple institutions. These were complex projects that sought to connect both the users' experiences of the services across multiple institutions (front-end) and integrate internal processes to avoid gaps and overlaps and save resources (back-end).

This classification does not claim to be a systematic analysis and clustering of the many applications of design present in the literature nor it has been empirically tested. Yet, it advances discussion on how we frame design's role in public sector contexts to support its procurement. From a design perspective, these applications of design may require similar strategies and methods for involving users and stakeholders, understanding the context, synthesising information and developing proposals. However, from a public sector perspective, these applications of design target specific purposes within the organisation and involve different levels of employees, from front-line engagement service providers to senior management or policy-makers. This ladder explores the idea that design's applications in the public sector could build on how public sector professionals' understand design and how design fits within their classifications of different kinds of projects. As describing design's roles in relation to the needs and aims of public sector professionals in different projects or situations may support them in identifying opportunities to use design approaches.

Nonetheless, further debate and research into how to best represent design and designers' roles and relationships with public sector work are encouraged. As design-led innovation approaches behave differently depending on the purpose and context (Bradwell & Marr, 2008, p.31). With further research (p.324), these different types of projects could become more specific to different areas of work in the public sector.

Table 21 Clustering of applications and services offered by design

<ul style="list-style-type: none"> •Policy •Strategy at organisational, departmental or team level •Envisioning the future 	Abstract
<ul style="list-style-type: none"> •Organisational changes building on staff needs and knowledge •Development of protocols and internal operations that take into consideration and support professionals at its multiple levels of implementation •Identify where resources are being wasted due to overlaps in operations or gaps in communications •Explore how outsourced services that can no longer be sustained due to budget cuts, could be provided internally •Service is practical and fits culturally 	Back-End
<p>Integration of services: working with other service providers to combine multiple services and teams into a single "front door", making sure people get the support they need from the moment they contact the council</p>	
<ul style="list-style-type: none"> •Design services that are built around the people that use them •Designing all points of contact between users and service •Join up channels •Designing for user co-production •design services that work for everyone •Lowering risk by proryotyping before piloting 	Front-End
<ul style="list-style-type: none"> •Involving the public in regeneration projects •Engaging disengaged users •Articulating user need and issues in a service •Spotting and understanding opportunities for innovation •Simplify complexity by looking for the root of the problem 	Design Research
<ul style="list-style-type: none"> •Marketing and Branding •Digital products / interfaces of public services •"if someone needs a website, we'll make a website, if someone needs a poster, we'll make [it]" •Physical spaces 	Tangible, Post-Definition



Figure 47 The public sector Ladder developed by the Design Council (2013)

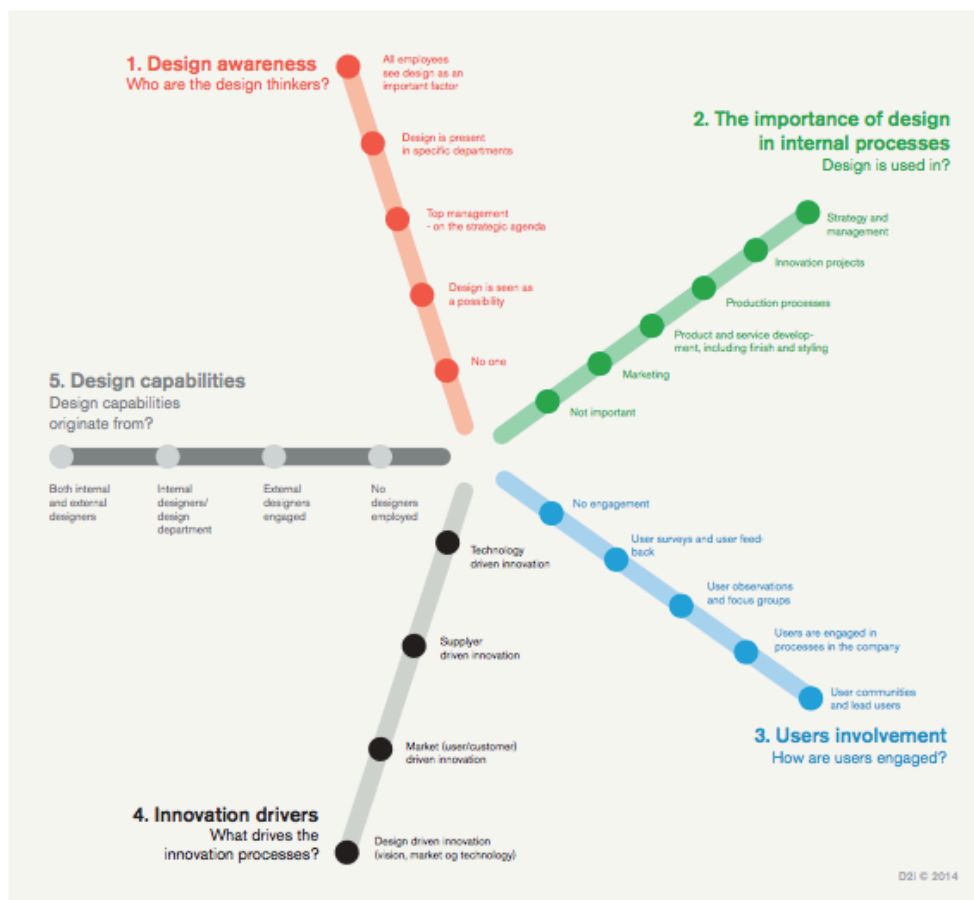


Figure 48 CESFO's design capacity model (source CDCM, 2015)

6.2.5 Navigating organisational and contextual barriers

This research identifies a clear disconnection between policy guidelines and organisational infrastructure and practice, which led public sector professionals to hold simultaneous contradicting perceptions of design's suitability. As participants acknowledged, design strategies and methods are in line with the wider policy landscape and public sector direction, and thus, in principle, design-led innovation approaches sound appealing and suitable. However, when considering or trying to incorporate those strategies and methods, they did not match the way in which public sector professionals are accustomed and expected to work.

The public sector literature recognises this tension as the 'operational gap' in the implementation of the public value framework, remarking that moving towards the co-production of public value entails a transition period. During this transition period, designers must try to navigate these barriers when working and building design capacity in the public sector. This research proposes two strategies for navigating organisational barriers: (1) raising senior managers' awareness of the barriers limiting learning and success of design-led innovation approaches; and (2) tailoring design-led innovation approaches to meet the needs of public sector professionals.

Firstly, although designers may not have the power to remove organisational barriers or change public sector professionals' perceptions of what is suitable or appropriate, senior managers may have a greater scope of action to make room for design's application, particularly in exploratory endeavours. Secondly, while the types of projects and complex contexts in which public sector professionals operate cannot be changed, there might be some scope for choosing the kinds of projects in which public sector professionals apply design for the first time.

Bringing awareness towards the gap between policy and readiness

Yee and White (2016, p. 7) emphasise the relevance and the gap in knowledge regarding ‘the conditions required for design to flourish and to turn those conditions into actionable strategies to ensure the reach and impact of design’. Amabile would argue (1996, p.163) that sometimes the most effective intervention to enhance innovation is to remove the things that are ‘standing in the way’, as her research shows that many environmental inhibitors and promoter are the same but in reverse (Table 22).

Table 22 Environmental promoters and inhibitors of creativity and innovation (Amabile, 1988, pp.146–148) and their overlaps with this research results (blue).

Promoters	Inhibitors
1. Freedom and autonomy	1. Organisational Characteristics
2. Good project management	2. Constraint (lack of freedom and autonomy)
3. Sufficient Resources	3. Organisational Disinterest
4. Encouragement	4. Poor Project Management
5. Organisational Characteristics (ie. cooperation across levels and divisions)	5. Evaluation
6. Recognition	6. Insufficient Resources
7. Sufficient Time	7. Time Pressure
8. Challenge	8. Overemphasis on the Status Quo (reluctance to change ways of doing things, unwillingness to take risks)
9. Pressure	9. Competition

While eliminating these barriers is beyond the scope of action of designers, public sector managers might be able to make room for the application of design, especially in exploratory initiatives such as pathfinder projects or learning environments. Removing some of the most direct and pressing barriers such as making decisions on qualitative data, speed in solution provision, or autonomy, can have a great impact of both the success of the projects and public sector professionals.

Bringing awareness to the environmental conditions that will support the successful learning and application of design strategies and methods is designers’ remit. Both designers and organisations promoting design in the public sector can increase awareness among

senior management regarding the promoters and inhibitors that they can influence to foster a smoother exploration and application of design strategies and methods. This overlaps strongly with Bailey's (2012) concept of 'design readiness', the organisation's capacity to absorb design strategies and methods, discussed in more detail later (p.293).

Tailoring first encounters with design

As this research has shown, public sector professionals' first experiences of using design strategies and methods are crucial to their uptake of design-led innovation approaches. These first encounters will define their understanding of design's contribution and determine whether or not they continue to explore and apply these approaches. Given the relevance of these first experiences and the impact of contextual factors on design uptake, this research proposes to tailor public sector professionals' first encounters with design.

Firstly, some types of projects may be more suitable than others for learning design, and thus the project choice can enhance (or inhibit) public sector professionals' learning and exploration of design-led innovation approaches. Some research participants felt that their projects were too big or complex for design. In other studies, public sector professionals using design for the first time reported that they would have preferred to undertake 'smaller scale or less complex projects' (Swiatek, 2016, p.39). Nonetheless, due to the high cost of design consultancy, public sector professionals are advised to procure design 'for the projects that are extremely important, or too extensive or complex to tackle on your own' (Thoelen et al., 2016, p.30).

Secondly, some types of projects and contexts require different degrees of mentoring and types of support, and thus tailoring capacity building activities can help with navigating organisational and contextual barriers in first encounters. The research findings showed that contextual complexities and the type of project conditioned public sector professionals' learning experiences and evaluation criteria. Designers may be able to navigate some contextual constraints by accentuating support in particular areas. For instance, in cross-institutional projects where collaboration dynamics get in the way, public sector

professionals may benefit from greater support in designing and facilitating collaborative activities.

Thirdly, in public sector contexts, design cannot always rely on ‘learning by doing’ strategies. Working in the public sector always entails significant social, ethical and economic responsibilities. However, this research shows that some types of contexts and projects accentuated public sector professionals’ risk management strategies, which resulted in participants refraining from the practical exploration of design methods and disrupted learning. These kinds of contexts cannot accommodate design’s ‘just go and do it’ attitude.

In first encounters in these kinds of contexts, design cannot rely on public sector professionals’ appreciation of design’s contribution once they have seen those methods in practice, as they may not reach practical exploration. In such contexts, designers can tailor training to provide greater evidence of how design operates in similar contexts.

6.2.6 Concluding remarks

These findings identify gaps and offer strategies for enhancing public sector professionals’ uptake of design-led innovation approaches by tailoring public sector professionals’ interactions with design practice and practitioners. These strategies can be summarised into two overarching strategies:

- **Building the comprehensibility and credibility of design-led innovation approaches by developing descriptions and representations of design specifically targeted to public sector professionals:**

This area of action is where this research makes a the greatest contribution to the field. These research insights into design communication supports the argument for abandoning the one-size-fits-all design discourse in favour of developing a contextualised, public sector specific design discourse. These insights have developed into actionable strategies for enhancing design’s credibility and comprehensibility and the procurement ladder, visualising some of the roles or relationships of design and designers with public sector contexts.

- **Navigating existing organisational and contextual barriers by tailoring public sector professionals' learning experiences of design:**

Research insights into public sector professionals' learning experiences in relation to both training and setting, suggest some ideas for navigating organisational and contextual barriers with capacity-building purposes. Some of these ideas have developed into actionable strategies for tailoring capacity-building activities to public sector contexts, and others into future research trajectories discussed in the next chapter.

6.3 Discussion of Findings

The previous section has presented strategies for enhancing design uptake drawing on both the relevant literature and empirical findings. This section discusses the meaning and implications of research findings for the field and advances debates in three areas: (1) the characteristics and value of emerging design practices; (2) the incorporation of design innovation practices in [public sector] organisations; and (3) the democratisation of design. It also offers a broader discussion on the incorporation of design-led innovation approaches within the particular context of the Scottish public sector.

The section begins by examining what research findings reveal about the emerging roles of design and designers and the common ingredients and contribution of design-led innovation practices in public sector contexts. Secondly, the discussion contrasts research insights into the public sector evaluation ecosystem (p.262) with the concepts of design readiness and design legacies. In particular, it discusses how these concepts address designers' impact and scope of action and the kinds of strategies they trigger. Thirdly, the discussion addresses tensions between the democratisation of design, emerging design practices, and the need for contextualising discourse. The final section discusses how the particularities of the Scottish public sector may impact its design readiness and legacies.

6.3.1 The incorporation of design in [public sector] organisations: design readiness versus design legacies

This section discusses research findings and propositions by contrasting the concepts of 'design readiness' (Bailey, 2012) and 'design legacies' (Junginger, 2014). Design readiness (Bailey, 2012, p. 33) is the organisation's capacity to absorb design strategies and methods. Design legacies (Junginger, 2014, p. 165) are the existing principles, processes and methods for improvement, innovation or decision-making that are already ingrained within the organisation. The design readiness of a public sector organisation can be understood as the alignment of its design legacies with design-led innovation methodologies. This section goes on to discuss the implications of these two conceptualisations – representing two different

ways of looking at organisations – as places of both promoters and inhibitors of design (design readiness) or as places with embedded design practices (design legacies).

By studying what shapes public sector professionals' decisions on design's suitability, this research has demonstrated: (1) the impact of design legacies on learning and uptake; (2) how these legacies manifest at different layers of social interaction (from individuals' knowledge to policy); and (3) an operational gap (p.288) in terms of design readiness. This research also established (p.268) two distinct areas of impact and action in the incorporation of design in the public sector: (1) the characteristics of the setting; and (2) design discourse and artefacts. In doing so, this research shows the simultaneous impact that design legacies and discourse have on public sector professionals' conceptualisations, decisions and uptake.

Research into 'design readiness' (Bailey, 2012) and the conditions for design impact (Warwick et al., 2014; Amabile, 1988; Amabile, 1996; Bailey, 2012; Yee & White, 2016) has dominated the field, while research around design communication and capacity building has been overlooked (Mager, 2016, p.68). It could be argued that, by focusing on how organisations need to change, the field places the responsibility for uptake on the organisation, and in doing so, disregards or underestimate the impact of designers. On the contrary, the concept of design legacies (Junginger, 2014) recognises the impact of both the setting and the designers and in doing so, it shifts the paradigm from seeking *design readiness by transforming the setting* to seeking *strategies that build upon existing design legacies*.

Design readiness versus capacity building: externalising responsibility

From the perspective of design readiness (Bailey, 2012), the organisational setting prevents designers' work (Warwick et al., 2014, p.9) or 'suffocates any attempt at innovation and change' (Junginger, 2014, p.166). This perspective considers the characteristics of the setting as promoters and inhibitors of design uptake and can trigger strategies to remove (Yee et al. 2016, P. 7; Amabile, 1996, p.163) or navigate the barriers (p.288). However, this perspective can also lead to inaction, as it places the responsibility beyond the scope of action of

designers, either on public sector institutions (to accommodate these practices) or on public sector professionals (to understand design).

Much of the literature, both in design and in public sector, looking at the incorporation of the public value framework, design innovation or other user-centric and participatory approaches in the public sector, emphasise how the public sector *needs to change* in order to accommodate these approaches and practices. As seen in the scope of context, according to the literature, these approaches demand institutional changes within Government (Coats & Passmore, 2008; Tapscott & Williams, 2006), as they are not ‘sufficiently porous’ (Shaw, 2013, p.485) to allow the incorporation of citizens’ contribution, primarily due to (1) complex accountability structures (Podger, 2012, p.85; Coats & Passmore, 2008, pp.21, 24); (2) gaps in skills and frameworks for understanding and engaging users (Hung, 2012, pp.252–253; Bason, 2013, p.17; Podger et al., 2012, p.109; Yee & Choukeir, 2016); and (3) attitudes and established ways of working that hinder these practices (Kotamraju & van der Geest, 2012b, p.262; Bradwell & Marr, 2008, p.38, 42; McDonald, 2017, pp.312, 323; TCS & Civil Service World, 2015, p.3-4). While it can be assumed that these cultural and structural hindrances will continue to exist in the near future, as traditional and new ways of working coexist (Stoker, 2006, pp.42–43; Shaw, 2013, pp.486–487), such institutional changes are beyond designers’ scope of action, and thus can lead to inaction.

On the other hand, seeing organisations as places of promoters and inhibitors can lead to placing the responsibility of learning design on public sector professionals, disregarding designers’ input. For instance, Warwick, Young and Lievesley’s (2014) research identifies five key inhibitors to the incorporation of design in the Voluntary Community sector: (1) capacity to change; (2) permission to change; (3) resources available to support change; (4) type of change; and (5) understanding what design can offer. From the perspective of the evaluation ecosystem (p.262), while the first four inhibitors would fall within contextual and organisational factors (p.264-265), public sector professionals’ understanding of what design can offer is shaped by two complementary aspects: (1) design communication and training on behalf of designers; and (2) interpretation and understanding on behalf of public sector

professionals. By looking at processes of meaning construction rather than outputs, this research disaggregates individuals' resulting conceptualisations and decisions of design's suitability into two interacting components. This subtle difference makes explicit the interdependencies between (1) how design is portrayed; (2) the impact of the setting (or design legacies) on public sector professionals' learning; and (3) design uptake. In doing so, it delineates designers' responsibility and scope of action in public sector professionals' learning and the uptake of design-led innovation practices, which has often been neglected in the literature in favour of understanding the organisational characteristics that inhibit or enable the incorporation of design practices.

Design legacies and discourse: placing responsibility on designers

Research findings reinforce Junginger's argument (2014, p. 164, 166, 171) that the incorporation of design-led innovation approaches in [public sector] organisations is being hindered by designers' lack of consideration, understanding and articulation of their existing organisational design legacies. This research makes explicit the impact of organisational legacies on design learning and evaluation, as well as the potential for harnessing these legacies to enhance comprehension and credibility. Firstly, findings showed that public sector professionals conceptualised, articulated and evaluated design in association with existing legacies from policy and organisational rules to other methods and 'their normal ways of doing'. Secondly, findings also suggest that building design discourse on existing legacies can support public sector professionals to develop more accurate conceptualisations and expectations of design and designers. Although this research reflects more explicitly on the dimension of discourse, Junginger (2014, p. 165) also emphasises the need for designers to acknowledge organisational legacies to lower resistance and 're-position' design into familiar territory. This notion of familiarity resonates with the communication strategies proposed in this research (p.270,272,275) for tailoring discourse to public sector professionals' realities and knowledge.

The concept of design legacies, understood as public sector professionals' mental models on which they make decisions, can be linked to discourse through relevant theory on organisational learning. Barrett, Thomas, and Hocevar (1995, p.353) place discourse at the core of large-scale change processes. The incorporation of design-led innovation approaches in the public sector requires public sector professionals to alter their cognitive schemas for understanding and responding to organisational events (Gioia & Chittipeddi, 1991; Poole et al., 1989). Design communication and capacity building strategies are crucial for the expansion of design-led innovation approaches in the public sector (Barrett et al., 1995, p.353), and are the responsibility of designers.

Other design practitioners and researchers (Bason, 20013, p.17; Young, 2013, p.187; Kimbel, 2013, p.207; Han, 2010) have noted the need for designers working in emerging areas of practice to confidently articulate design, its value and roles. However, even though design learning has been identified as key to the sustainable uptake and impact of design approaches (Warwick et al., 2014; Burns et al., 2006), how design communication and capacity building play out in the public sector is rarely discussed in the design literature (Mager, 2016, p.68). An exception to this has been Bailey's work (2012, p.33-34) with Skills Development Scotland (SDS). The SDS project used a variety of strategies to embed design capacity, such as involving public sector professionals in design projects and workshops, shadowing and mentoring, and using communal spaces to raise awareness of the design work and encourage debate (Bailey, 2012, p.35). However, more detail on how these approaches to capacity building played out would support further development and improvement of design discourse and training in public sector contexts.

Jurginger argues (2014, p. 165) that the acknowledgement of *organisational* design legacies also requires designers 'to come to terms' with their own legacies. These *professional design legacies* can be understood as the principles, processes and methods driving designers' practice. The scope of context situated the researcher's practice and explored the shared characteristics of design-led innovation practices. The next section discusses these characteristics in relation to research findings.

6.3.2 Emerging design practices vs expectations: the characteristics and value of design innovation approaches

Some research findings are intrinsically linked to the characteristics of design-led innovation approaches and, in practice-based cases, to the researchers' approach to design practice (p.50). This section addresses on-going debates on the emerging roles and contributions of design and designers, and in so doing deliberates some of the shared characteristics of design-led innovation practices.

It is worthy of reminding that this research adopted an inclusive understanding of design-led innovation approaches to cover a variety of approaches that 'use similar ingredients, in different configurations' (Yee et al., 2015a). While the shared characteristics of these practices are under debate, this research defined design-led innovation approaches by emphasising the emerging roles of design and designers and in contrast with more traditional conceptions of design (p.36). This definition highlighted design's increasing **immateriality** and the **shifting roles of making** (Young, 2013, p.187; Lawson & Dorst, 2013, p.94; Bjögvinnsson et al., 2012, p.106; Kimbell, 2009a, p.6), its **increasing inclusiveness** (Brown & Katz, 2009, p.8; Chick & Micklethwaite, 2011, p.35; Siodmok, 2014, pp.28–29; Cross, 1972, p.11; Lawson, 2006, p.125) and **democratisation** (Burns et al., 2006, p.23; Brown & Katz, 2009, p.28; Buchanan & Margolin, 1995, p.introduction), and its greater **focus on context** (Bernsen, 1986; Friedman, 2003, pp.511–512; Papanek, 1972) and subsequent expansion of the process to **include problem definition** (Sanders & Stappers, 2008, p.6; Design Council, 2007, p.10; Koen et al., 2002, p.5).

Some of these characteristics are reflected in the conflicting views of design's approach, role, and contribution that emerged in the research, such as associations of design with implementation (p.202), expectations of designers to be the 'experts that go away and come back with solutions' (p.204), or designers' perceptions around late procurements (p.201). Firstly, the notion of late procurement is a direct consequence of design's *desire* to engage in the early stages of the process to contribute and impact problem definition, strategy

development and innovation (Koen et al., 2002, p.5). Therefore, public sector professionals' associations of design with implementation become problematic only if the design approach seeks to engage in problem definition instead of focusing on the 'end product' (Durling, 2002; Design Council, 2007). Similarly, expectations of designers to be sole problem-solvers (p.204) are at odds with design approaches that advocate for collaborative problem solving. These shared ingredients (Yee et al., 2015a) – seeking involvement at early stages and favouring inclusive problem solving – speak of the motives and intentions behind design practice, and are part of practitioners' *professional design legacies* (Jurginger, 2014, p. 165). It had been argued that these legacies are at odds with the public sector's expert culture (p.264); but similar conflicts also exist within the field of design, as not all of the innovation designers practising in the public sector share the same approach. While co-design epistemologies consider that those closest to the problem have the knowledge and motivation to solve it (Think Place Global, n.d.), as seen in p.205, some innovation designers considered that employees did not hold valuable knowledge for the design of an organisational system because they did not understand the technology behind it.

Therefore, it is relevant to acknowledge that there are conflicting professional design legacies being used and promoted in the public sector under the same terminology (ie. service design, design thinking or design innovation). This research (p.280) has critiqued design texts that neglect the emerging roles of designers as they move away from *producing*, and into *leading* and *facilitating* (Han, 2010, p.201); and argued that a lack of clarity in the alternative roles that design and designers can play in public sector contexts can inhibit procurement (p. 275). Therefore, there is a need for articulating the different approaches that designers can take and their implications for public sector professionals. Furthermore, insights suggest that design's contributions also need to be linked to the characteristics of the approach. Some contributions made by design rely on the designers' skills, such as facilitation, synthesis and visualisation (p.392); while others depend on the context and application (p.201). But there are some contributions that can be traced back to the characteristics of the approach. For instance, design's expected contribution of 'integrating

multiple perspectives' (Swiatek, 2016, p.39, Yee et al., 2015a, pp.13–14) is contingent upon access and involvement of diverse stakeholders. Design discourse needs to be more explicit about how different design approaches used and promoted in the public sector may entail different challenges and contributions.

6.3.3 Democratisation versus contextualisation: beyond the one-size-fits-all design discourse

The scope of context (p.36,45,46) discussed how design's expansion into new areas of application and its increasing inclusiveness and democratisation had fostered the need for communicating design approaches outside disciplinary circles (Kimbell, 2009, 2013; Christensen, 2014; Banerjee in Yee et al., 2013; Banerjee, 2013) in a way that (a) users and stakeholders can understand (p.48), and (b) builds different expectations of design and designers (Inns, 2013a, Design Council, 2007). It was also noted (p.36,48) that the homogenisation of design discourse fostered by the blurring of disciplinary boundaries (p.37), similarities across design approaches (p.38), and the dissemination of design thinking (p. 40,45,50) had been criticised for over-simplifying design approaches (Christensen, 2014; Banerjee, 2013; Björgvinsson et al., 2010; Kimbell, 2011a). This section discusses the implications of research findings for the democratisation of design in the public sector and its discourse.

The complexity of articulating design-led innovation practices

This research argues that, in order to build the comprehensibility and credibility of design-led innovation approaches in the public sector, it is necessary to develop a design discourse targeted to public sector professionals. By discourse, this research refers to everything that designers do to create meaning for public sector professionals. This contextualisation of discourse implies developing targeted *descriptions, representations and exemplars* of design *methods, strategies, processes, applications, roles and contributions*, that acknowledge public sector design legacies and build on *existing language and terminology*,

the methodologies and standards of practice already in place, and how design has traditionally been conceived and procured in the public sector. Additionally, this research has shown that these design legacies may vary depending on the *socio-political region, the area of public sector work, the nature and complexities of the project, and the organisational culture and structure.*

The challenges for contextualising discourse are: (1) design's versatility, as it 'can do many things' (Xiangyang, 2013, p.225); (2) its adaptability, as it behaves differently depending on the purpose and context (Bradwell & Marr, 2008, p.31); and (3) the existence of multiple, sometimes conflicting, professional design legacies, as different innovation designers may take radically different approaches in the same situation (p.205,299). The versatility and adaptability of design-led innovation approaches complicates the articulation of its roles, processes and contributions. But it becomes particularly complex in context-driven approaches, where designers' expertise centres on navigating a fuzzy process (Sanders & Stappers, 2008, pp.15–16) and the outputs are initially uncertain and emergent (Chick & Micklethwaite, 2011, p.35). In addition, the existence of conflicting *professional design legacies* being used and promoted in the public sector under the similar terminology (p. 299) can be detrimental to public sector professionals' understanding.

Regardless of this complexity, accurately communicating design's applications is crucial in public sector professionals' procurement and uptake. Ultimately, for public sector professionals to procure and use design approaches, they need to understand what design can do for them and in what kinds of situations it is best suited. To do so, the field needs to acknowledge the *diversity of approaches* used and promoted in the public sector (p. 299), and clarify how these *operate and contribute* value in different public sector contexts and types of projects (p.271,272). The procurement ladder (p.275) explored the potential of articulating design's applications attending to how design and designers fit in public sector professionals' work. However, this research recommends further investigation (p.324) to develop a more nuanced understanding of how different design approaches operate and contribute in the public sector.

Homogenisation versus complexity in the democratisation of design

The versatility of design in terms of purpose and diversity of approach has led to its conception as an overarching framework for innovation (p.49), often represented by a series of principles or characteristics and its processes. The caveat here is that this overarching framework needs to be adapted and almost re-designed to attend to the particularities of the design situation (p.49), and public sector professionals cannot be expected to have the proficiency in design to translate how these would apply in their particular contexts (p.271). On the contrary, research findings suggest that such simplifications inhibit public sector professionals' uptake, as they need more accurate information on how design fits and behaves in different public sector contexts. The balance between democratisation and simplification of design discourse (p.48) is a debate relevant to the expansion of design in the public sector. Research findings suggest that the strategy that can enhance the discipline's comprehensibility and credibility is the specialisation rather than homogenisation of design discourse; and build the argument for abandoning the one-size-fits-all design discourse in favour of developing a contextualised, public sector specific design discourse. This research would argue that an effective democratisation is one that fosters understanding and uptake of design strategies and methods while maintaining the complexities that contribute value. Although the design literature has not discussed in detail the communication of design in public sector contexts, design researchers and authors have recognised the need to further develop design discourse due to the emergence of new approaches and its expansion into new sectors (Bason, 2013; Young, 2013; Kimbell, 2013). Bason argues (2013, p.17) that 'designers need to learn how to interact more effectively with government'. Young (2013, p.186) and Kimbell (2013, p.207) speak of the need for increasing design's credibility by confidently articulating design practices, its contributions, and roles.

It is important to note that, when this research proposes developing representations of design targeted to public sector professionals, it is not intended as a means of persuasion. As the next section discusses in the context of the Scottish public sector, design approaches

sound compelling enough to get public sector professionals interested. But that is not the objective. On the contrary, the aim is to ensure that public sector professionals receive the information and support they need as they progress in learning and evaluating design-led innovation approaches. Moving public sector professionals from interest to sustained uptake of design-led innovation approaches is easier said than done. However, the evidence gathered on public sector professionals' sense-making processes of design suggests that the way in which designers portray design is not contributing. Nonetheless, research insights open up opportunities and contribute to the development of a design discourse that enhances uptake.

6.3.4 The Scottish Context: devolution, design readiness and geo-located discourse

It is important to note that the research has only included Scottish organisations and does not offer the basis for comparison with other contexts. Nonetheless, building on the literature and some anecdotal insights, it is possible to speculate the impact of some of Scotland's particularities. As discussed in the scope of context, when compared to the UK, it would be sensible to expect that Scotland's devolution of power and the alignment of its public service reform with citizen-centric and participatory design discourse would enhance public sector professionals' uptake of design approaches. However, the training programme studied in the main case study scored lower in Scotland than in the rest of the UK (p.238).

This research observed that, in principle, research participants embraced the social and democratising values of design approaches. Research participants (Sheila, designer; Paul, public sector professional; CS3, I) and the literature (Escobar, 2010, p.11; Pieczka et al., 2010, p.19) have linked this to Scotland's culture of collaboration and solidarity. However, problems emerged in the implementation of these practices. When abstract notions of participation, such as *including citizens' voices* or taking an *evidence-based approach*, had to be translated into actual project strategies; these were confronted with organisational and contextual barriers, such as time and resource constraints or the expert culture. While public

sector professionals in Scotland may be entitled and encouraged to engage citizens and communities to make decisions, they lack the organisational infrastructure and resources required to make public involvement happen. More so, public sector work is still subject to standards of quality and practice that are at odds with these practices. It is worth pointing out that, although Scotland's devolved context will instil certain particularities, the organisational challenges identified in this research are shared across international literature, which suggests that the Scottish public sector is more similar than different in the way it operates to the UK and other countries.

However, policy connected with the public service reform had a more explicit impact on design uptake. The Scottish governments' encouragement of community participation and asset-based approaches (p.65) had an impact on the types of projects pursued (p.265). It can also have an impact on public sector professionals' knowledge-base and expectations, as Scottish professionals may be more likely to be literate in similar methodologies. Participants associated design's context-driven approach with the prevention agenda (p. 201), and its participatory nature and flexible process with co-production (p.243). Design discourse can learn from how these approaches are being communicated to public sector professionals. For instance, Paul (CS3, I2) explained how co-production processes could not be replicated, as they required flexibility to adapt to the specific experiences of the citizens involved. This suggests that design discourse can also harness geo-located knowledge of design legacies in the public sector, or socio-political design legacies.

6.4 Research Conclusions

This research treated public sector professionals' evaluation of design-led innovation approaches as a situated and dynamic process of meaning construction. This inquiry has offered a holistic understanding of their learning and decision-making processes, as well as insights into their evaluative questions and criteria for determining whether or not design approaches, strategies and methods are suitable in their work. Most importantly, this holistic and situated approach and the comparison across six different projects working in different contexts and organisations have served to identify patterns in what social factors play a role in shaping their views and decisions about design's suitability.

Research findings evidence that public sector professionals conceptualise and evaluate design building on their interactions with both the public sector setting on the one hand and design practice and practitioners on the other hand. These findings draw attention to the interplay between (1) the impact of design legacies in public sector professionals' learning and evaluation of design; and (2) how design is communicated and taught in public sector contexts. The main conclusion drawn from research findings is that it is possible to tailor design communication and capacity building to enhance the discipline's comprehensibility and credibility, and ultimately its uptake. This conclusion is two-fold and has implications for both design practice and research. Firstly, **design researchers and practitioners need to acknowledge and harness the impact that communication** and capacity-building strategies have on the uptake of design-led innovation approaches in public sector organisations. This research recommends tailoring design discourse and training to the needs, knowledge and expectations of public sector professionals. Secondly, **design research needs to expand beyond its current focus on outputs and impact**, to consider the interactions between designers and public sector professionals and evaluate design communication and capacity building strategies.

Designers' responsibility and discourse

As discussed earlier (p.293), the literature often emphasises how the public sector needs to change in order to accommodate design-led innovation approaches and practices (Bridge, 2012; Coats & Passmore, 2008; Tapscott & Williams, 2006; Shaw, 2013; Podger, 2012). While these changes require a slow transformation, as argued earlier (p.268,293), when the focus shifts towards designers' scope of action, it is possible to identify specific gaps and opportunities for enhancing design uptake under the current landscape. More specifically, this research has identified gaps in design communication and training as well as opportunities for enhancing the comprehensibility and credibility of these approaches.

This research shows that design legacies not only have an impact on public sector professionals' decisions regarding the application of design, but also on their understanding of design approaches, strategies and methods. The growth of design in the public sector is bound to our ability to communicate it effectively. This research advocates for tailoring communication and training strategies to public sector professionals' knowledge, expectations and realities; and proposes a variety of strategies to do so. This research shows the potential of harnessing existing design legacies, such as terminology and knowledge of similar methodologies, for enhancing or at least not to inhibiting the comprehensibility and credibility of design discourse. Furthermore, to build credibility, design discourse needs to acknowledge the complexities and challenges of operating in the public sector. This research has also discussed the disadvantages of presenting design as an overarching framework for innovation and advocates for the development of more explicit articulations of how design and designers fit within public sector organisations and work.

Design research beyond impact and outputs

Research conclusions also have implications for design research. As argued (p.293,300), although design practitioners and researchers have noted the relevance of building design capacity to the sustainable uptake and impact of design approaches in [public sector] organisations (Bailey, 2012; Mager, 2016; Warwick et al., 2014; Burns et al., 2006), and the need for designers working in emerging areas of practice to confidently and clearly articulate design (Bason, 20013, p.17; Young, 2013, p.187; Kimbel, 2013, p.207; Han, 2010); neither design communication nor capacity building in the public sector has been widely studied or discussed. This research has argued (p.72-89,293) that the field's need to demonstrate its contribution in public sector contexts has potentially led design research to have an excessive focus on outputs and impact. This research would argue that focusing on design's tangible impact overlooks useful insights for enhancing public sector professionals' uptake of design; which is the ultimate goal of demonstrating its value. By contrast, this empirical research demonstrates that focusing on interactions and processes of meaning construction can offer relevant insights for improving design discourse and training; as it allows to identify gaps, challenges, and opportunities for enhancing understanding, evaluation, and uptake. Gathering evidence of design's contribution will not be sufficient to build design's comprehensibility and credibility in public sector contexts. Design research needs to understand the kinds of information that public sector professionals require to understand and evaluate the suitability of design-led innovation approaches. Therefore, greater emphasis has to be placed on public sector professionals' interactions with design practice and practitioners as they conceptualise design strategies and methods and decide whether or not to apply them, as these offer untapped insights to enhance uptake.

In conclusion, this research would like to call for further research on design communication and capacity building in the public sector as well as a focus on designers' interactions with public sector professionals; as these hold essential clues for the development of the discipline and its expansion or democratisation in public sector contexts.

Chapter 7

CONTRIBUTIONS, LIMITATIONS AND FUTURE RESEARCH

This research set out to understand how public sector professionals evaluate the suitability of design-led innovation approaches in their work. This final chapter reviews the contributions to knowledge made by this research, discusses its limitations and proposes directions for future research.

7.1 Discussion of contributions

The research set out to contribute to the gap identified in the literature (p.25,72,89) by providing a better understanding of the decision-making processes that lead to public sector professionals' uptake or rejection of design approaches; and has demonstrated that focusing on interactions and meaning construction, rather than outputs and impact, can offer valuable insights for enhancing design uptake in the public sector.

The research contributes to the field in three ways: (1) it expands current knowledge on the incorporation of design-led innovation approaches in the public sector; (2) it offers concrete communication strategies and devices that can enhance the credibility and comprehensibility of design in public sector contexts; and (3) it identifies gaps in the literature relevant to the growth of design in the public sector.

The public sector ecosystem

Firstly, it is worth of note that most of the public sector design legacies identified in this research are not new knowledge. Some of them were discussed in the literature review on the challenges that design faces in the public sector, such as a lack of user-centredness (Hung, 2012, pp.252–253; Podger et al., 2012, p.109; Yee & Choukeir, 2016; Bason, 2013, p.17), disregard for qualitative research methods (Bradwell & Marr, 2008, p.38; McDonald, 2017, pp.312, 323), hierarchical accountability (Shaw, 2013, p.491; Stoker, 2006, p.56; Podger et al.,

2012, p.109), or a lack of collaborative culture in favour of expert-led decision processes (Hung, 2012, pp.249–250; Siodmok, 2014, p.26; Bason, 2013, p.17; Hopiavuori & Alonso, 2016, p.75). However, this research has gained a more holistic understanding of the public sector ecosystem and a more comprehensive account of the aspects intervening in decision-making. Additionally, as seen in the discussion (p.293,303), the research expands the field's knowledge on public sector design legacies and readiness, specifically in Scotland; and contributes to on-going debates on the incorporation and democratisation of design in [public sector] organisations.

Design communication and capacity building

The research also makes relevant contributions to the communication and promotion of design-led innovation approaches in public sector contexts, one of the literature gaps identified by Flood and Lambert's (2012, p. 5-6) in their scoping study for the AHRC. The research contributes to design discourse by: (1) identifying gaps and ineffective representations of design; and (2) developing communication strategies and devices that can enhance comprehension and credibility by catering to how public sector professionals learn and evaluate design.

The overall conclusion drawn from this research– *the need for tailoring design communication and capacity building strategies to how public sector professionals' learn and evaluate design* – contributes to discussions around the articulation and democratisation of design innovation approaches (p.300), including the incorporation of organisational design legacies in design discourse. Additionally, the gaps in design communication and learning identified suggests concrete strategies (p.268) for improving design communication and training, and navigating existing constraints. Regarding the strategies and devices proposed, the research would highlight the contribution made by the *procurement ladder* (p.300). While not representing a major contribution, this conceptual model still expands on current representations, and opens up questions around how to communicate to public sector professionals how design and designers fit in their work.

The *Public Sector Ladder* (p. 78) appears to be the only public sector specific representation of how design fits in the public sector, and was intended as a ‘diagnosis tool and roadmap for progression’ for public sector organisations to assess their use of design (Design Council, 2013). While this model has been used by relevant organisations, such as Design for Europe (Whicher, 2015), as a means to communicate how design can contribute to the public sector; this research would argue that it fails to support public sector professionals in envisioning how design fits in their organisations and work. Firstly, it fails as a roadmap for progression because different steps of the ladder (Figure 47) represent different aspects of the relationship between design and the public sector. While the first two steps (*design for discrete problems* and *design as capability*) are concerned with the organisation’s commissioning model and design capacity, and entail progression from ‘one-off design interventions’ towards embedding design in the organisational culture. However, the last step (*design for policy*) relates to the purpose or area of application, as taking a design-led approach to strategy and policy-making does not necessarily imply that the approach is culturally embedded in the organisation. Secondly, the public sector ladder does not offer enough detail on how design can be applied in the public sector, since the only distinct application is policy-making. Although the *Procurement Ladder* developed in this research still requires further development, it disaggregates and expands these two dimensions; and in doing so, already offers a more comprehensive description for public sector professionals of how design and designers can fit in their projects and organisations.

Demonstrating the relevance of design communication and capacity building

Finally, research insights not only offer a better understanding of how public sector professionals learn design; they also expose relevant gaps in the literature. By demonstrating the impact that design communication and capacity building have on public sector professionals’ uptake of design approaches, this research exposes gaps in design knowledge. As discussed (p.293), while the relevance of communication and capacity building in design uptake is often acknowledged in the literature, research into these areas has been overshadowed by the field’s interest in design readiness. Design research has placed a greater

emphasis on studying the environmental factors that promote and inhibit design uptake (Warwick et al., 2014; Amabile, 1988; Amabile, 1996; Bailey, 2012; Yee & White, 2016), and examining how organisations need to change to accommodate these practices (Coats & Passmore, 2008; Tapscott & Williams, 2006; Shaw, 2013; Podger, 2012). This perspective is incongruent with research findings, and thus this research critiques (p.293) the field's excessive focus on aspects that are beyond the scope of action of designers, and literature that neglects the impact of designers by externalising the responsibility of uptake towards the individuals or organisation learning and evaluating design.

7.2 Limitations of research findings

It is worth noting here that this research does not claim that its findings are generalisable. As clarified in the methodology chapter, the propositions developed in this research are to be taken as reasoned judgement (Paul, 1993, p.313), that is, as the researcher's reconstruction of reality in relation to empirical and experiential materials and the literature. Nor does this research claim the organisational traits identified to be pervasive in the Scottish public sector based on participants' statements. The validity of these insights does not even rely on whether those organisational traits are real. Instead, based on the Thomas theorem (Kvale, 1995, p.29), this research argues that whether those organisational traits are real or not, participants' perceptions of them have real consequences. That is, if public sector professionals believe that they do not have the autonomy to undertake design activities, their uptake and consequently their learning of the approach will be conditioned by that belief, whether or not they actually have such autonomy. Thus, validity here is not judged by the veracity of participant's statements, but on the effects that their perceptions of the public sector and design can have on learning and uptake.

When evaluating research findings, it is worth bearing in mind the particularities of the studies undertaken to understand its weaknesses and strengths:

- The condition of the researcher as a design practitioner brings with it a particular vision of design aligned with a culture of social design, and her mixed background implies a particular understanding of the experience of learning design.
- The research has been limited to the Scottish public sector, which will have its particularities. For instance, according to the organisation providing the design training, their programme had received a significant lower punctuation in this first cohort in Scotland than in all the previous ones in England. However, the research insights have overlaps with studies undertaken elsewhere nationally and internationally.
- In relation to the projects, this research has looked into a fair variety of contexts, but does not include policy and community engagement. It is also worth noting that the

researcher mainly interacted with middle management and civil servants but had little engagement with senior management.

- The research has had a particular emphasis on tensions, such as conflicting views of design or participants' scepticism. The research does not argue that these are pervasive, but rather they were highlighted for their relevance in identifying what may be limiting the adoption of design approaches in the public sector.

The main argument of this research is that design discourse and capacity building would benefit from understanding the public sector better. This argument builds on a variety of insights that in isolation, due to the size of the study, could be considered as anecdotal evidence. But when regarded collectively and in the light of other recent studies, these findings support the researcher's reasoned proposition for the development of a design discourse targeted to public sector audiences that relates specifically to the reality and knowledge of the public sector in order to build credibility and understanding of design-led approaches.

Despite its limitations, this research has effectively identified both convergences and divergences between designers' and public sector professionals' perceptions of design, its role and contribution, as well as tensions and commonalities within design itself. Design practitioners, especially those who are new to working with the public sector, may find useful some of the insights gained in this research, regarding both the ways in which public sector professionals make sense of design, and the complexities and hindrances existing in its implementation.

Identifying causality between particular aspects is beyond the scope of this study, but it does aim to identify at least some of the elements that are present when design thrives or which may be limiting the degree to which design approaches can be applied. The rationale for doing this is that, although not all, some of those elements might be susceptible to being influenced by organisations in order to nourish the environment in a way that makes more effective use of design input.

Note that due to the nature of the data gathered, the qualities and skills of individuals are not taken into consideration when analysing what elements may affect design adoption. The reason for this is that such aspects could only be speculated from the researcher's observations and interactions with participants. This does not imply the presumption that these factors are not relevant, as they are. But as Amabile argued (1988, p. 128) even though 'general intelligence, experience in the field, and ability to think creatively are major influences on output of creative ideas', it could be assumed that 'hiring practices [in public sector] select individuals who exhibit relatively high levels of these personal qualities'. Furthermore, projects have been undertaken by teams and not individuals alone, which should provide a greater base of knowledge and skills.

Finally, due to the exploratory nature of the research and its constructivist research approach, the focus of the research was iteratively defined, which had an impact on the quality of data gathered, as discussed in the methodology chapter (p. 131). To mitigate the initial lack of focus, the researcher tried to gather as much data as possible. But the different nature of public sector professionals' relationships with design and designers in each of the case studies (consultation, collaboration, training), implied different degrees and types of interactions and learning of design on behalf of public sector professionals. This reduced comparability of decision-making process across case studies. This is why the analysis built first sought for similarities across the four projects included in the main case study, and then triangulated these with insights from the scoping and immersive case studies. Different cases also recorded decision-making at different project stages. For instance, the practice-based studies recorded negotiations during procurement, while the main case study did not. This has been pointed out in the findings chapter, by assuming a lower degree of robustness of these findings. But these limitations also suggest new trajectories and approaches to design research in the public sector, described next.

7.3 Future research

The study of public sector professionals' decision-making processes has opened up questions around how to communicate and teach design to public sector audiences in a way that enhances understanding, credibility and uptake. This section explores emerging questions, identifies gaps in design knowledge, and proposes research trajectories that would contribute to the field's capacity to communicate effectively in public sector contexts.

Table 24 (below) groups future research trajectories thematically into three categories: (1) design communication; (2) public sector design legacies; and (3) design behaviour in the public sector. Firstly, further research is needed to understand existing gaps in design communication and learning, and to develop effective communication strategies and devices. As research findings show, the study of how public sector professionals and designers interact, understand, and articulate design practices can offer valuable insights for enhancing design's credibility and comprehensibility. This section makes an emphasis on three research trajectories:

- Co-creating design discourse: how can empirical insights on learning be used to generate effective ways of communicating design?
- The construction of design discourse and professionals design legacies: How do designers articulate design and why?
- Communication in action: the study of interactions with an emphasis on the procurement stages

Secondly, this thesis has argued that an effective contextualisation of design discourse requires the field to develop a more nuanced understanding of the public sector and its design legacies. It is worth of note that these legacies include a myriad of aspects, *from use of language, to methodologies and standards of practice, to preconceptions and expectations of public sector work and of design procurement*; and these may vary depending on the *socio-political region, public sector area, nature and complexities of the project, and organisational culture and structure*. Therefore, these are all dimensions worth considering in future research. This section makes an emphasis on two research trajectories:

- **Comparability:** Since public sector professionals understand and evaluate design strategies and methods in relation to other methodologies already established in their area of work, it is essential for design to understand how it compares to these other approaches.
- **Public sector contexts:** How do different public sector contexts condition public sector professionals’ predisposition, expectations, understanding, and evaluation criteria with regards to design strategies and methods?

Finally, this thesis has also argued that the field needs a more effective articulation of how design fits in public sector work to enhance procurement. Subsequently, it proposes further study into the behaviour, processes, and contributions of design innovation practices in the public sector; and how these may vary depending on the type of project or area of work.

Table 23 Future research: themes and trajectories

THEMES	TRAJECTORIES
Design Communication	Co-creating design discourse
	The construction of design discourse and professionals design legacies
	Communication in Action: the study of interactions (emphasis on procurement)
Public Sector Design Legacies	Comparability
	Public sector contexts
Design Behaviour in the Public Sector	Design Approaches, applications and contributions in public sector contexts

Co-creating design discourse

One of the questions that remain unexplored is how we can best utilise our knowledge of public sector design legacies to develop an effective design discourse. The development of the procurement ladder and the introductory videos can be seen as a first step towards exploring the potential of translating research insights into discourse. However, these were

envisioned as analytical devices rather than communication devices. Therefore, although they build on the literature and empirical insights into how public sector professionals conceptualise and evaluate design, they lack empirical robustness. To explore the practical application of empirical findings on design learning and communication gaps, the next research phase should focus on generating and testing alternative communication devices, and would benefit from engaging both public sector professionals and designers.

This research proposes a participatory action research approach (Whyte, 1989), where designers and public sector professionals collectively and iteratively develop alternative communication devices and evaluate their comprehensibility and credibility in public sector contexts. Its objectives would be:

- to co-create and test alternative, more effective ways of communicating design;
- to deepen the field's knowledge of communication gaps and how professional and organisational design legacies (p.293,299) impact discourse, comprehensibility and credibility ; and
- to explore, more generally, how research insights into design legacies and communication gaps can be translated into effective discourse.

There are several dimensions to take into consideration in the research design. Firstly, it would be beneficial to engage public sector professionals with different degrees of design awareness, as they can offer different kinds of relevant insights. While participants that are unfamiliar with design innovation can offer greater insight into existing preconceptions and expectations of design, public sector professionals that are pioneering the incorporation of design in their organisation might have already tailored design discourse to their contexts and needs. Similarly, the recruitment of designers may present similar differences, as designers with greater experience in the public sector may have developed a more a nuanced understanding of how public sector professionals' respond to different descriptions and representations, and adapted their discourse accordingly. Finally, to narrow the scope, such studies can focus on specific aspects of design (i.e. its process, role, or contribution); particular methods or strategies; or a specific area of public sector work or type of project.

The construction of design discourse: professional design legacies and the tacit knowledge of design practitioners

Examining how public sector professionals constructed meaning from design discourse has prompted questions around how designers construct meaning for public sector professionals. The research has offered some insight into how different designers understand and communicate their practice differently (p.205,280), but much could be learnt from examining how designers communicate design and why they do it that way.

The divergences found across designers in this research sparked questions around the diversity of design approaches being used and promoted in the public sector; and how, while some of their characteristics are driven by context, others respond to different professional design legacies (p. 299). Studying how these characteristics and legacies manifest in discourse can support a better articulation of different design innovation practices. Furthermore, studying designers' choice of discourse can reveal practitioners' tacit knowledge on what makes an effective discourse depending on the specific situation.

- How do designers make decisions regarding how to introduce and communicate their design practice to public sector professionals?
- Do designers' articulations of design adapt to the specific situation, and if so, how?
- What shapes their decisions on how to communicate design? (i.e. contemporary design discourse, previous experiences practising design inside and outside the public sector, the specific characteristics of the project / context / interlocutors)
- Do different articulations of design represent alternative professional design legacies or identities?

Exploration of these questions relies on designers' reflections and deconstruction of their decisions and discourse, but would benefit from observation to identify communication devices and strategies to reflect upon. These reflections could be elicited through interviews. A constructivist grounded theory approach (Charmaz, 2006) would allow a close study of language and meaning construction (ibis, p.184), but other qualitative approaches could be used. Such study could compare across designers practising in different (or specific) areas of

the public sector, or across designers with similar (or different) approaches or understandings of design.

These questions are in line with Junginger's (2014, p. 309) argument regarding the need of designers to examine how their professional legacies manifest in their discourse and practice. Further questions around diverging approaches to design practice and professional design legacies lead to the exploration of design behaviour in the public sector (p.324).

Communication in action: the study of interactions

This research argued (p.73) that contemporary design research has an excessive focus on outputs and impact while disregarding interactions, and that the study of the interactions between designers and public sector professionals is essential to identify gaps in design communication and learning (p.307). The study of interactions, as explained in the methodology (p.101), requires a naturalistic approach by engaging in the observation of actual projects and capacity building. Such study could focus on or compare across a variety of aspects such as different stages of a project, design applications or contexts, or capacity building strategies. While all of these would offer relevant insights into design communication, this research would like to make a special emphasis on the relevance of studying design procurement for three reasons. It is at this stage that (1) preconceptions have a greater impact; (2) the characteristics of the approach are established; and (3) project expectations are set.

This research has shown that public sector professionals' preconceptions of design determine their expectations of design and designers' roles and can limit the incorporation of design-led innovation approaches. Although some research has been done into the procurement of interaction design for the development of information technologies (Lantz & Holmlid, 2010), design procurement in the public sector lacks exploration.

This research proposes the study of public sector professionals' and designers' interactions at procurement stages, aiming to understand: (1) when, why and how public sector professionals seek design support; and (2) how design's approach, role and

contributions are negotiated at procurement stages. Insights from this research suggest some questions for data gathering:

- When and why do public sector professionals seek design support?
- How do design practitioners pitch and negotiate design's role and contribution?
- Do public sector professionals hold any expectations of design that do not match designers' practice? If so, how do designers navigate those expectations?
- Do public sector professionals or designers ask for clarification of terms, concepts or methods?
- After those interactions, do both parties share the same understanding of the procured interventions?

A better understanding of when, why and how public sector professionals seek design support and how design's role and contributions are negotiated at procurement stages would contribute to diagnosing and improving the communication and promotion of design-led innovation approaches in public sector contexts. For instance, identifying gaps in public sector professionals' awareness of the potential applications of design in public sector contexts could inform the development of awareness campaigns. Most importantly, understanding how design's role is negotiated could support identifying ways of communicating design's role and applications that support public sector professionals understanding, engagement and evaluation of design-led innovation approaches.

Communication in action: the study of interactions

This research (p.307) argued for the need to study the interactions between designers and public sector professionals in order to identify gaps in design learning and evaluation and improve design communication and capacity building. These kinds of studies could focus on or compare across a variety of aspects such as different stages of a project, design applications or contexts, or capacity building strategies. This research would suggest a naturalistic study (p.101) to observe how interactions, conceptualisations, and decisions develop in real projects and capacity building activities. However, it is worth mentioning that, for the purposes of studying conceptualisation, such studies could use an experimental

approach with simulated training activities (p.103), since the specific characteristics of participants' contexts and projects seemed to have a greater impact on their evaluation criteria and decisions regarding application than on how they conceptualised design strategies and methods. Instead, their conceptualisations were closely connected with their area of work and expertise.

While research into the interactions between public sector professionals and designers can take place in different settings, this research would like to make a special emphasis on the relevance of studying procurement for three reasons: it is at this stage that (1) preconceptions have a greater impact; (2) the characteristics of the approach are established; and (3) project expectations are set.

Understanding design compared to other methods used in the public sector

This research has found that public sector professionals conceptualised, evaluated and articulated design-led innovation approaches, strategies and methods, through association and comparison with 'their normal ways of doing' and other approaches and methods more established in the public sector (p.208,242). This research suggests the following questions to explore how design relates to other methodologies:

- What methodologies used in the public sector overlap with design? How would public sector professionals behave if they were not undertaking a design-led innovation approach?
- How does design differ from other methodologies used in the public sector?
- How does the knowledge of other methods and approaches support or weaken public sector professionals' understanding of design strategies and methods?
- Where does design outperform or complement other methodologies used in the public sector?

Understanding how design relates other methodologies used in the public sector would allow design to: (1) harness public sector professionals' knowledge of other methodologies to enhance their understanding of design strategies and methods; and (2) identify design's

unique selling points in public sector contexts which would help public sector professionals to evaluate design strategies and methods.

As already discussed, it would be expected that these methodologies vary attending to the socio-political context, the type of project, and the area of work.

A more nuanced understanding of public sector contexts

Taking root in contemporary design literature (Mulgan, 2014; Yee et al., 2015; Design Council, 2013), this thesis has discussed the incorporation of design in the public sector using a broad definition of public sector work and with no emphasis on public sector professionals' skillset, area of work, or role within the organisation's hierarchy (p.301). However, while the research found consistencies across contexts regarding public sector professionals' evaluative questions (p.260-260) and organisational design legacies (p.264, 289,303), their conceptualisations of design and evaluation criteria were context-dependent (p.265). As seen, the type of project, area of work, or nature of the relationships with users and stakeholders can condition public sector professionals' predisposition, expectations, understanding, and evaluation criteria with regards to design strategies and methods. Therefore, further study is needed to understand how design legacies vary within public sector work, and how they condition uptake.

Building on empirical findings, more concrete research questions could be:

- How do public sector professionals with different skillsets and roles within the organisation relate to different representations of design?
- How does public sector professionals' area of work influence their predisposition, expectations and understanding of design strategies and methods?
- How do the specific characteristics of the project and context condition public sector professionals' evaluation criteria?

A more nuanced understanding of public sector contexts can support the development of more targeted design discourse that addresses the specific characteristics of the design situation, and the needs and knowledge of the professionals' involved. Answering such questions require comparative studies to understand the differences between the dimensions

studied (i.e. individuals' skillsets, area of work, project contexts, or organisations) and their effect on design uptake. Although observation would offer insight into first reactions, an interview study would be less time consuming and give greater insight into public sector professionals' rationalisations behind their impressions and decisions. How different public sector contexts may condition design uptake can be studied in connection with variations in design behaviour, the topic discussed in the next research trajectory.

Studying design's applications, behaviours, and contributions in public sector contexts

This thesis argued (p. 299) that the field of design needs to acknowledge the diversity of design approaches promoted and used in the public sector, and clarify how these operate and contribute in different situations. This requires further research into how the design situation, the approach and its contributions are interconnected. Research insights suggest some questions that would support public sector professionals' evaluation of design's suitability:

- What are the different kinds of projects or applications that design can have in the public sector?
- What are the characteristics, benefits and challenges of using different approaches to design in a particular kind of project/context?
- What value do different aspects of design practice contribute, and in what situations?
- How are different contributions of design enabled or constraint by the characteristics of the approach (i.e. involvement of designer/organisation, epistemology)?
- How are different contributions of design enabled or constraint by the characteristics of the context?

Research in this respect may benefit from theoretical investigation and the analysis of secondary data. As discussed in the scope of context (p.72), there is a robust literature of single case studies describing design projects in the public sector. Analysing these can

contribute to conceptualising how design and designers may behave differently depending on the design situation; and profiling case-scenarios of how design can be applied and contributes to different areas of work in the public sector. Some contemporary research on design's contribution in the public sector (McDonald, 2017; Yee et al., 2015b; Yee et al., 2015a) has already moved beyond questioning *what value contributes design* to explore *how design (and designers) contribute value*; and in doing so, they have begun to contextualise design and designers' contributions attending to the context of application, purpose, and approach.

7.4 Concluding remarks

Research questions emerged from practice and responded to gaps in the literature regarding how public sector professionals make decisions on the application of design approaches, strategies, and methods in their work. To understand what shapes their decisions, the research focused on studying interactions and meaning construction; and has provided a more holistic understanding of the many aspects intervening in decision-making, and how these impact uptake. Most importantly, research findings have triggered questions around contemporary design discourse and its effectiveness to communicate and evidence design's contributions, roles, strategies, and methods. This research reveals communication and capacity building strategies that are ineffective in building the comprehensibility and credibility of design approaches in the public sector because they are not context specific, and thus fail to address public sector professionals' needs, expectations, knowledge, and aspirations when learning and evaluating design. Research results challenge the notion of the one-size-fits-all discourse, and infer the need for design to take a user-centred approach to the development of design discourse and training.

If we fail to communicate design in a way that supports public sector professionals' understanding and evaluation, design discourse becomes one of the main inhibitors for embedding design practices in the public sector. Subsequently, research findings also trigger questions around the focus and relevance of contemporary design research. The field's focus on design readiness and how organisations need to change to accommodate innovation or participatory practices is incongruent with designers' scope of action, and can be rendered excessive when considering the lack of research on design communication and capacity building. Similarly, the field's emphasis on demonstrating design's contribution and impact has left unquestioned public sector professionals' needs and expectations from that evidence.

This research encourages further research and debate concerning: (1) how design behaves and contributes in different public sector contexts; (2) what information public sector professionals need to understand, evaluate, and trust design strategies and methods; and (3) how public sector professionals' knowledge can be harnessed in design communication.

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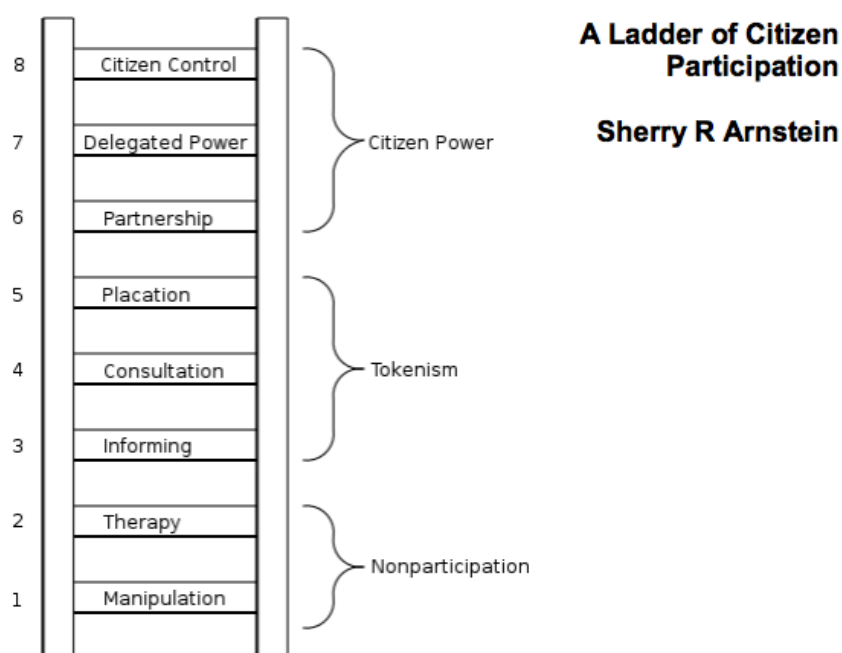
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Appendix A

Arnstein's ladder of citizen participation

As part of the 'Better Community Engagement Programme', the Scottish Government provides Arnstein's ladder of participation as a learning resource (Figure below).



The bottom rungs of the ladder are (1) Manipulation and (2) Therapy. These two rungs describe levels of "non-participation" that have been contrived by some to substitute for genuine participation. Their real objective is not to enable people to participate in planning or conducting programs, but to enable powerholders to "educate" or "cure" the participants. Rungs 3 and 4 progress to levels of "tokenism" that allow the have-nots to hear and to have a voice: (3) Informing and (4) Consultation. When they are proffered by powerholders as the total extent of participation, citizens may indeed hear and be heard. But under these conditions they lack the power to insure that their views will be heeded by the powerful. When participation is restricted to these levels, there is no follow-through, no "muscle," hence no assurance of changing the status quo. Rung (5) Placation is simply a higher level tokenism because the ground rules allow have-nots to advise, but retain for the powerholders the continued right to decide.

Further up the ladder are levels of citizen power with increasing degrees of decision-making clout. Citizens can enter into a (6) Partnership that enables them to negotiate and engage in trade-offs with traditional power holders. At the topmost rungs, (7) Delegated Power and (8) Citizen Control, have-not citizens obtain the majority of decision-making seats, or full managerial power.

Obviously, the eight-rung ladder is a simplification, but it helps to illustrate the point that so many have missed - that there are significant gradations of citizen participation. Knowing these gradations makes it possible to cut through the hyperbole to understand the increasingly strident demands for participation from the have-nots as well as the gamut of confusing responses from the powerholders

Figure 49 Scottish Governments' introduction to Arnstein's (1971) Ladder of Citizen Participation (<http://www.gov.scot/resource/doc/49303/0122794.pdf>)

Appendix B

Literature review: Design in the public sector

This appendix addresses the procedure, sources (Table 24), and search terms (Table 25) used to review the literature specific to design-led innovation practices in the public sector.

The literature review began through journals and conference archives known to the researcher, university library catalogues available to the researcher, as well as general Internet searches for reports, white papers, news, and articles. Through reading the researcher organically identified relevant papers, journals, reports, authors and institutions working in the area, which were further explored. Following the references of papers and reports and exploring the work of relevant institutions and authors also led to relevant literature and initiatives.

Regarding the search terms used (Table 25), general searches included a variety of design disciplines to ensure relevant materials were not missed because of terminology.

Table 24 Design Literature Sources Systematically Reviewed

Sources Systematically Searched	
Known Journals	Co-Design, Design Issues
Conference Archives	ServDes (2009, 2010, 2012, 2014, 2016)
Library Catalogues	University of Glasgow, Glasgow School of Art, Edinburgh College of Art, University of Edinburgh
Institutions and Projects (Reports, papers and case studies)	Design Council, Nesta, Design Commission, Arts Research and Humanities Council (AHRC), SPIDER project
Other Journals	Australian Journal of Public Administration, The Design Journal

Table 25 Search terms in the design literature review

Search Terms	
Design disciplines	Service design, co-design, co-creation, design thinking, design (led) innovation, participatory design, social design
Empirical Context	Public sector, public service(s), government, policy
Design Learning	(design) learning, training, capability, capacity building

Appendix C

Evolution of research questions

Due to the exploratory, inductive and practice-based initial approach of this research, research questions evolved (MacIntosh et al., 2016, p.58) as the researcher gained a greater understanding of the empirical context. Research questions developed from the dynamic interaction (MacIntosh et al., 2016, p.77) between (1) the empirical and reflexive materials gathered through the researcher's engagement as practitioner-researcher in real projects, (2) the researchers' conceptualisations of what was happening aided by the literature, and (3) the researcher's interests informed by existing design research in the area.

To explain how research questions were constructed, it is useful to differentiate between the processes of refining and reframing questions (MacIntosh et al., 2016, p. 59-60).

- Refinement involves adjusting the focus of a research question driven by empirical insights but maintains the original intention of the research. This refinement process involves minor changes which iteratively fine-tune questions to be more focused, relevant and feasible as they reflect the researcher's better understanding of the challenges and constraints imposed by the setting.
- Reframing, on the other hand, involves a substantive and potentially discontinuous shift in the focus or nature of the research question. Reframing is likely to occur when, either on entering the research setting or at some point during the study, the original research design is rendered unworkable. In these circumstances, researchers can either choose to abandon the study or reframe their original research question.

This research's original proposal had an interest in exploring the contribution of service design (visual) methods in complex collaborative projects. It is worth noting that before the scoping case study described in this thesis, the researcher engaged in other projects and contexts, where design methods were used for collaborative purposes. However, these did not fulfil the researcher's interest in understanding how these methods could

contribute to navigate complex collaborative dynamics. The scoping case study, however, did present complex collaborative dynamics as a result of the structural changes undergone by the organisation. Design methods were used to support teams navigating these changes and facilitating complex team discussions.

Early interactions for scoping this project, completely reframed the research. Designers and public sector professionals held different views of design's potential role and contribution, and these perceptions had an impact on procurement, with designers' feeling they were called in too late, or their practice did not match what they were asked to do. These conflicting perceptions of design called the researcher's interest. Also, the data gathered during and after the design workshops undertaken in the project suggested that design's role in navigating these collaborations relied strongly on the designers' facilitation skills, although public sector professionals also appreciated the value of visual methods. This shift in focus reframed research questions from 'how do design methods support complex collaborations?' to 'how do public sector professionals perceive design's role and contribution in their work?' This new question also built on the design literature and the field's need to demonstrate its value in public sector contexts. But the researcher was not only interested in their perceptions of design, but on how those perceptions came from, how these were shaped. This question was influenced by the researcher's literature review on the nature of knowledge and reality to define her research methodology, as she began to align with constructivism, social constructionism and complexity theory, This general question around public sector professionals' perceptions of design's role and value in their work continued to be refined during the conceptualisation research phase. The immersive case study, which explored alternative ways of publishing statistical data, allowed the researcher to engage in a more collaborative relationship with public sector professionals. She was able to participate in public sector professionals' decision-making processes as they evaluated different design methods and strategies, as well as to conceptualise what elements had a role in shaping their views and decisions. Together with the meaning construction literature, these led to refining the focus of research questions

from perceptions or views to evaluation as a process of meaning construction. This refinement was also paired with the researcher's realisation that a significant proportion of the design research had a focus on outputs rather than interactions and decision-making processes.

Appendix D

Research participants

Table 26 Research participants – Scoping Case Study: Organisational Change

GK = Gatekeeper KI= Key Informant TM = Team Manager Tm = Team member WP = Workshop Participants		Description	
Group	Name	Role	Interactions
Gatekeepers	Helen	GK, KI	Definition and evaluation of project scope and activities Interview
	Claire	GK	Scoping project (phone call)
	Susan Emily Sarah	WP	Workshop participants
Change Team	Nicole	GK, Tm	Workshop participant
	Leon	TM	Workshop participant
Team 1	7 people	Tm	Workshop participants
	Hilary Cleo	GK, TM, KI Tm, KI	Scoping meeting, meetings and email discussions to define design activities
Team 2	11 people	Tm	Workshops participants

Table 27 Research participants – Immersive Case Study: Redesigning Statistical Outputs

GK = Gatekeeper KI= Key Informant TM = Team Manager Tm = Team member WP = Workshop Participants	
Group	Description
Core Team	<p>Project manager of the statistical publication, he agreed to take a user-centred design approach to the project, but was still figuring out what that meant. His plan to improve the cost-effectiveness of his department got absorbed by a wider exploratory project on the digitisation of statistical information. He truly appreciated the researcher’s support in orienting the project, but felt he had no time to devote to development work. Eventually, he re-scoped the project to deal with the efficiencies in his department and disassociated his publication from the pathfinder project</p>
	<p>Both strived to innovate the way public sector statistics are published. Gary had initiated the pathfinder project, and had been advised by the creative department to take a user-centric approach to this exploration. While he sought design support, he did not really know what that entailed. Both met with the researcher first to scope the project, and remained actively engaged in meetings and email discussions.</p>
	<p>Susanne had vast experience in innovation in their area, and was asked to join the team as an adviser.</p>
	<p>Professionals from inside and outside the organisation, who had different roles in the collection, analysis, interpretation, and publication of their statistical data.</p>
	<p>Regular core-team meetings, workshops, email and phone discussions Interview</p>
	<p>Scoping project, regular core-team meetings, workshops, email discussions Scoping project, regular core-team meetings, workshops, email discussions</p>
	<p>Role</p>
Anthony	TM, KI
Gary	GK, Tm
Tom	Tm
Susanne	Tm
16 people	WP
Lead-Analysts Workshop	

Table 28 Research participants – Main Case Study: Design Training

DM = Design Mentors O = Observers GK = Gatekeeper KI = Key Informant TP = Training Participants SM = Senior Manager				
Group	Name	Role	Interactions	Description
Training Facilitators	Marlene	GK, KI, DM	Scoping researcher's involvement, purpose and access; informal conversations at training sessions; interviewed	Co-designer and project manager of the training programme. She had been working within the public sector for twenty years, specialising in innovation.
	Nathan	DM		Professional focus in product and digital design. Training participants spoke highly of him.
Visiting Designers	4 people	DM	Informal conversations at training sessions	Professional designers and data analysts invited as guest speakers
	Jack and Mary	O		They were the designers evaluating the programme, and were sceptic of user-centred and participatory design methods
Team A	Lee	TP	Attended all training sessions, Interviewed	He worked in the Council's innovation team and became very interested in how some design methods could contribute to his work. Although with help from colleagues, he led most of the project on his own. He reported to senior management on the evolution of the project, but had high autonomy and did not require prior agreement to explore design methods.
	Martha	TP, SM	Interviewed	
	Other Colleagues	TP	Attended some training sessions.	Supported Lee in the development of the project
Team B	Peter	SM	Interviewed	Enthusiastic about innovating in his sector and interested in the possibilities that design could offer. His team felt very supported and encouraged.
	Paul	TP	Attended all training sessions, Interviewed	Both were new to their organisations but experts in their sector. They showed a reflexive and critical approach to learning design, questioning and

	Laura	TP	Attended all training sessions, Interviewed	evaluating the tools and strategies they used at every step, and going beyond training materials to explore design’s applications and success in public sector contexts. Paul put more time into the project, but both became very knowledgeable and critical of design, and of their organisation’s front-end and back-end processes and gaps.
Team C	Lidia	SM	Attended all training sessions, Interviewed	Neil led the Council’s project under Lidia’s supervision. Both were very knowledgeable of their field of practice but sceptical about what design had to offer. All team members responded to their respective organisations but had a high degree of autonomy to explore design methods and strategies. They became frustrated due to the complex dynamics between stakeholders. Neil and Mark were among the most outspoken participants in the training.
	Neil	TP	Attended all training sessions, Interviewed	
	Mark	TP	Attended all training sessions,	
	Michelle	TP	Attended all training sessions,	
	Eric	TP	Attended all training sessions, Interviewed	
Team D	Shona	TP	Attended some training sessions	Eric and Shona worked in different organisations but shared a deep concern for the wellbeing of users. They were overwhelmed by the dimensions of the project and institutional enmities, and were willing to absorb anything that could help them to navigate these complexities. Although both were committed to design’s user-centred approach, they had no autonomy to direct the project and became frustrated. Instead, decisions had to be agreed upon by a committee representing the three institutions involved.

Appendix E

Data gathering

Table 29 Summary of data gathered and process (Scoping Case Study: Organisational Change)

SCOPING CASE STUDY (CS1): Organisational Change		
Empirical Materials		
<p>Purpose</p> <ol style="list-style-type: none"> 1. Gathering participants' experiences and perceptions of design and its role and contribution to their contexts/work 2. Understanding the project / situation / context, and participants' perceptions of them 3. Identifying research trajectories and developing research questions and aims 		
Data Source	Data Gathered	Data Gathering Process
Practice-based Interactions	<ul style="list-style-type: none"> - Observations - Meeting notes - Emails <p>NOTE: workshops elicited the researcher's interactions and observations, but workshop outputs were mainly produced by designers and did not provide additional data.</p>	<ul style="list-style-type: none"> - During interactions: written notes & observations - After interactions: audio-recorded observations & interpretations - Design methods described on case studies
Extant Documents	<ul style="list-style-type: none"> - Org. Change Diagram - Common Ground Sessions' findings report 	
Questionnaires	<p>6 open questions, 2 groups</p> <ul style="list-style-type: none"> - Q1: First team (responses: 5/9) - Q2: Second team (responses: 8/9) 	<ul style="list-style-type: none"> - Online (through SurveyMonkey) after workshops - Sent to participants by each team's gatekeeper
Interviews	<p>1 Interview - gatekeeper</p> <p>Interviewee's role: Gatekeeper</p> <p>Duration: 1h 10min</p> <p>Location: café</p> <p>Date: 19/11/2014</p>	<ul style="list-style-type: none"> - Quasi-unstructured, at points conversational - Note: participant mostly spoke about a project the researcher was not involved in.
Reflexive Materials		
<p>Purpose</p> <ol style="list-style-type: none"> 1. Values and assumptions guiding the researcher's practice and understanding of design 2. Finding research leads and shaping research questions 		
Reflexive Auto-Interviews	4 Auto Interviews	Before and after workshops

Table 30 Summary of data gathering questions (Scoping Case Study: Organisational Change)

IMMERSIVE CASE STUDY (CS2): Redesigning Statistical Outputs	
DATA GATHERING QUESTIONS	
Observations	<p>What is happening? Is there anything particularly interesting or unexpected?</p> <p>How do participants' perceive the situation/problem?</p> <p>What did participants' expect of design?</p> <p>How do participants' perceive the (potential) role and contribution of design in this situation?</p> <p>Are there any challenges in the uptake/implementation of design approaches/methods?</p>
Questionnaire	<p>EXPECTATIONS / VALUE</p> <ol style="list-style-type: none"> 1. What were you expecting to get out of the session? 2. Were your expectations met? And why or why not? <p>EXPERIENCE / VALUE</p> <ol style="list-style-type: none"> 3. How would you describe your experience of the session? How did you feel? 4. In hindsight, how do you think the session and your experience of it could have been different? <p>ROLE DESIGN ARTEFACTS AND DESIGNERS</p> <ol style="list-style-type: none"> 5. Do you think the designed artefacts and activities influenced the course and outcomes of the session? How, and why or why not? 6. How did the designers contribute to the success/failure of the session?
Interview	Guiding topics see Figure 50
Reflexive Auto-Interviews	<p>EXPECTATIONS / VALUE</p> <p>What were you expecting to get out of the session?</p> <p>Were your expectations met? And why or why not?</p> <p>EXPERIENCE / VALUE</p> <p>How would you describe your experience of the session? How did you feel?</p> <p>In hindsight, how do you think the session and your experience of it could have been different?</p> <p>ROLE DESIGN ARTEFACTS AND DESIGNERS</p> <p>Do you think the designed artifacts and activities influenced the course and outcomes of the session? How, and why or why not?</p> <p>How did the designers contribute to the success/failure of the session?</p> <p>Example see Figure 51</p>
General Reflexions	<p>What do I believe or feel about this research situation/event/data gathered?</p> <p>Why do I think that? What is my understanding based on?</p> <p>How does my understanding affect the research/practice?</p>

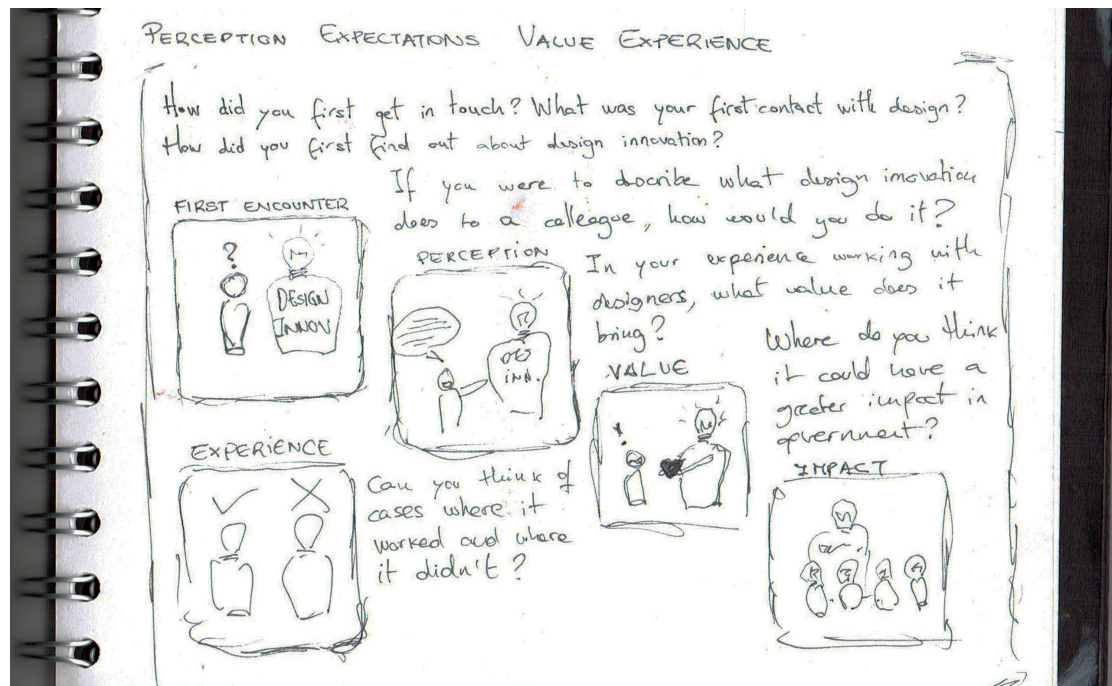


Figure 50 Topic Guide for unstructured interviews

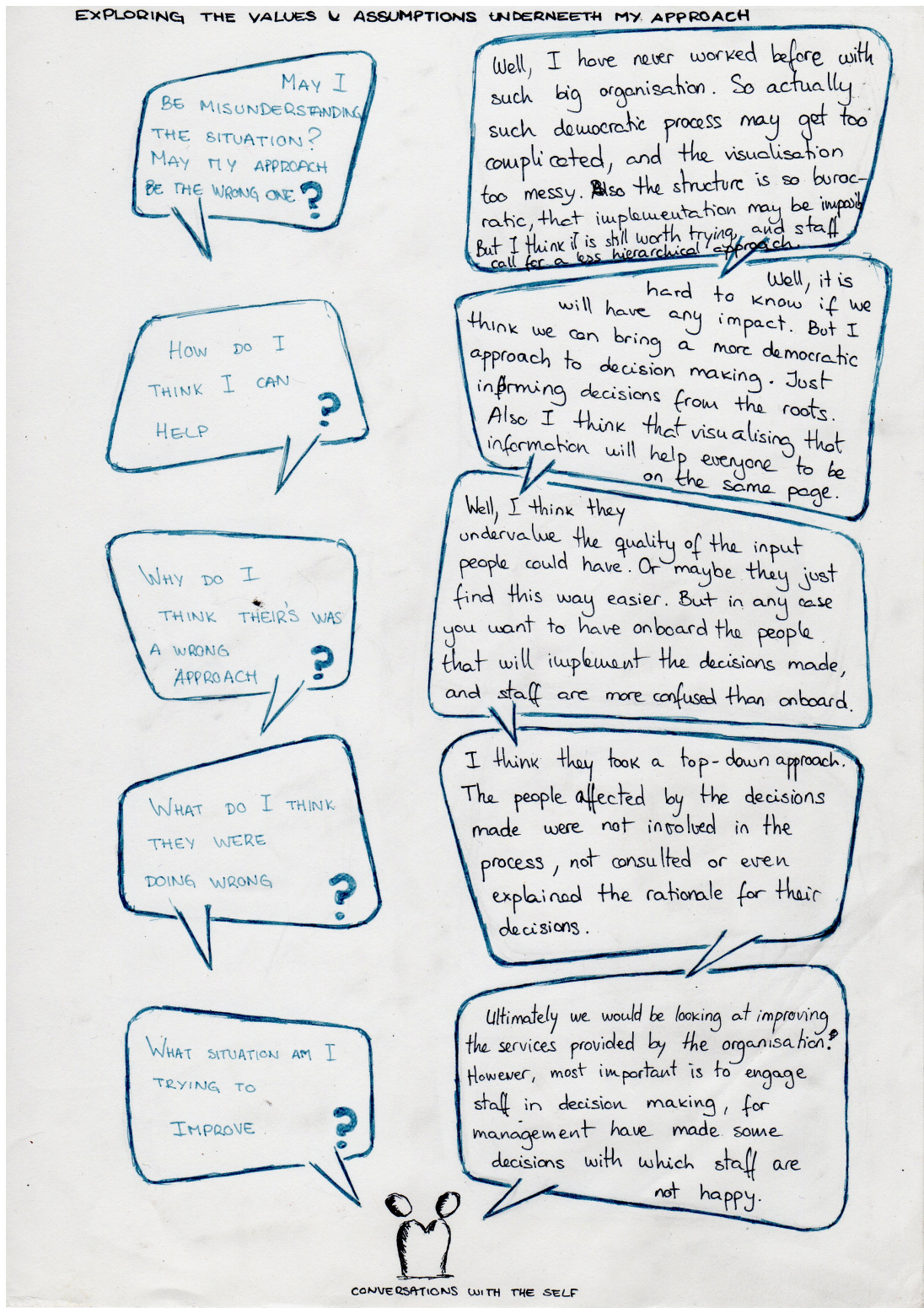


Figure 51 Example of reflexive auto-interview (Author, 2018)

Table 31 Summary of data gathered and process (Immersive Case Study: Redesigning Statistical Outputs)

IMMERSIVE CASE STUDY (CS2): Redesigning Statistical Outputs		
Empirical Materials		
<p>Purpose</p> <ol style="list-style-type: none"> 1. Gathering participants' perceptions of design and their processes evaluating the suitability of design strategies and methods 2. Understanding the project / situation / context, and participants' perceptions of them 3. Identifying what factors may be influencing public sector professionals' decisions 		
Data Source	Data Gathered	Data Gathering Process
Practice-based Interactions	<ul style="list-style-type: none"> - Observations - Meeting notes - Emails - Workshops not only elicited relevant observations and interactions. Workshop activities also gathered participants' perceptions of the projects and contexts. 	<ul style="list-style-type: none"> - During interactions: written notes & observations - After interactions: audio-recorded observations & interpretations - Design methods described on case studies
Extant Documents	<ul style="list-style-type: none"> - Project initiation document (PIC) - 2 user profiling documents (national / departmental) - Web analytics - Publication to be re-designed 	
Questionnaires	<p>6 open questions, 2 groups</p> <p>Q1: Scoping session core team (responses: 2/4)</p> <p>Q2: Workshop lead-analysts (responses: 7/20)</p>	<ul style="list-style-type: none"> - Online (through SurveyMonkey) after workshops - Q1: Sent to core team directly - Q2: Sent to workshop participants by gatekeepers
Interviews	<p>1 Interview</p> <p>Role: Project leader</p> <p>Duration: 1h 28min</p> <p>Location: café</p> <p>Date: 18/06/2015</p>	<ul style="list-style-type: none"> - Unstructured, conversational - Note: participant led the interview. Similar to a reflexive debrief session after the project's closure
Reflexive Materials		
<p>Purpose</p> <ol style="list-style-type: none"> 1. Values and assumptions guiding the researcher's practice and understanding of design 2. Finding research leads and shaping research questions 		
Reflexive Auto-Interviews	7 Auto Interviews	<p>After scoping meeting, before and after: scoping session with core team, planning meeting, workshop with lead-analysts</p>

Table 32 Summary of data gathering questions (Immersive Case Study: Redesigning Statistical Outputs)

IMMERSIVE CASE STUDY (CS2): Redesigning Statistical Outputs	
DATA GATHERING QUESTIONS	
Observations	<p>What is happening? Is there anything particularly interesting or unexpected?</p> <p>How do participants' perceive the situation/problem?</p> <p>How do participants' perceive the (potential) role and contribution of design in this situation?</p> <p>How do they judge whether to apply or not to apply design methods and strategies?</p> <p>Are there any challenges in the uptake/implementation of design approaches/methods?</p>
Questionnaire	<p>EXPECTATIONS / VALUE</p> <p>1. What were you expecting to get out of the session?</p> <p>2. Were your expectations met? And why or why not?</p> <p>EXPERIENCE / VALUE</p> <p>3. How would you describe your experience of the session? How did you feel?</p> <p>4. In hindsight, how do you think the session and your experience of it could have been different?</p> <p>ROLE DESIGN ARTEFACTS AND DESIGNERS</p> <p>5. Do you think the designed artefacts and activities influenced the course and outcomes of the session? How, and why or why not?</p> <p>6. How did the designers contribute to the success/failure of the session?</p>
Interview	<p>Examples of Follow-up/Probe questions:</p> <ul style="list-style-type: none"> - How would you explain ' what I do'? - Do you think you needed to have someone in the team who could make decisions? - Was the design approach clear enough for you? - Discussion on the interviewee's sense of guilt in relation to the work undertaken by the researcher
Reflexive Auto-Interviews	<p>EXPECTATIONS / VALUE</p> <p>1. What were you expecting to get out of the session?</p> <p>2. Were your expectations met? And why or why not?</p> <p>EXPERIENCE / VALUE</p> <p>3. How would you describe your experience of the session? How did you feel?</p>

	<p>4. In hindsight, how do you think the session and your experience of it could have been different ?</p> <p>ROLE DESIGN ARTEFACTS AND DESIGNERS</p> <p>5. Do you think the designed artifacts and activities influenced the course and outcomes of the session ? How, and why or why not ?</p> <p>6. How did the designers contribute to the success/failure of the session ?</p> <p>PROJECT SPECIFIC QUESTIONS (Added in questionnaire for workshop with lead-analysts)</p> <p>7. How / where do you see the contribution of design to this project ?</p> <p>8. How / where do you see your own involvement and contribution to this project ?</p>
<p>General Reflexions</p>	<p>What do I believe or feel about this research situation/event/data gathered ?</p> <p>Why do I think that ? What is my understanding based on ?</p> <p>How does my understanding affect the research/practice ?</p>

Table 33 Summary of data gathered and process (Main Case Study: Design Training)

MAIN CASE STUDY (CS3): Design Training for the Public Sector		
Empirical Materials		
<p>Purpose</p> <ol style="list-style-type: none"> 1. Gathering participants’ experiences of learning, using and evaluating design-led innovation approaches, and their understanding and perceptions of suitability of design strategies and methods 2. Gathering data on participating projects, their contexts and organisations 3. Gathering data on how designers communicated design-led innovation approaches to public sector professionals’ 		
Data Source	Data Gathered	Data Gathering Process
Participation in the Training	- Observations: 5 days of training and networking dinner	<ul style="list-style-type: none"> - Training presentations and group discussions: At beginning by hand, after third session directly on laptop. - Design activities and informal conversations: hand-notes were taken during interactions, and further elaborated afterwards
Extant Documents	<ul style="list-style-type: none"> - Programme Brochure - Participants’ application to training - Training slides and materials - Project descriptions, presentations and participants’ blogposts 	
Interviews	<p>9 Interviews undertaken after the 4th training session</p> <p>Participants: 4 Interviews, 6 Interviewees</p> <p>Average Duration: 1h</p> <p>Location: their organisations</p> <p>Senior Management: 2 interviews</p> <p>Average Duration: 1h</p> <p>Location: organisation / café</p> <p>Designers: 2 interviews</p> <p>Average Duration: 1h</p> <p>Location: phone / café</p>	- Semi-structured

Table 34 Summary of data gathering questions (Main Case Study: Design Training)

MAIN CASE STUDY (CS3): Design Training for the Public Sector	
DATA GATHERING QUESTIONS	
Observations	<p>How do design facilitators communicate / explain design to public sector professionals?</p> <p>How do PS professionals' make sense of design? perceive, comprehend and value design?</p> <p>What value do PS prof perceive? Do they face any challenges in its implementation?</p>
Interview (Training Participants)	<ul style="list-style-type: none"> • Imagine I am a colleague of yours, how would you describe this project to me? • Could you draw out to me the project journey and talk me through it as you do? <p>Identify and discuss</p> <ol style="list-style-type: none"> a. When and how design methods have been used b. What has worked and what hasn't (tools, strategies, approaches) c. Shifts in the process and causes for those shifts d. Barriers and challenges encountered: within the organisation, in their external engagement, in their use of design e. Did you seek external support from agencies? If so, when and why? What benefits and/or challenges has this brought? <ul style="list-style-type: none"> • Please would you describe your experience of being a design advocate in your organisation? How has design been received by your organisation? How comfortable do you feel in leading the design process? • What are the main challenges you face as your project develop, and how do you think you will you overcome these? Will you seek support – where and how? • Within this process, what have you enjoyed the most, and what have you found most challenging? • To what extent do you think design has influenced your perception of the project and the way you are tackling it? • Where do you think the contribution of design is being most valuable? • Are you evaluating the success of the project and measuring the impact of using design? If so, how? • Do you think you will start doing anything differently as a result of this programme?
Interview (Senior Management)	<ul style="list-style-type: none"> • How did you first learn about design being used in these contexts? • Do you have previous experiences using this type of design approaches in your organisation? How where those experiences? Can you give me some insight into what worked and what didn't? • Why did you decide to enter the Design Council programme? • Are you evaluating the success of the project and measuring the impact of using design? If so, how? • What challenges do you think design approaches encounter in public sector

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	<p>organisations?</p> <ul style="list-style-type: none"> • How would you describe what design can do for your organisation? Where do you think its contribution can be most valuable? • Do you think the organisation will start doing anything differently as a result of this programme? And if so, what changes do you foresee and how are you planning to support them?
<p>Interview (Designers)</p>	<ul style="list-style-type: none"> • Their experience of using design in public sector • Potential contributions and value of design to the public sector • Challenges and barriers in embedding design in PS organisations • Views on the training programme • Where they see their contribution to embedding design to the public sector in Scotland <p>+ Specific questions depending on Designer's role in the training programme: facilitator, funding organisation, invited speaker</p>

Appendix F

Consent form

RESEARCH CONSENT FORM

Through this project you are being invited to take part in a PhD research. Please read the information provided before deciding to take part. Feel free to discuss it with others and ask questions to the researcher if anything is unclear. Note that you will be able to withdraw from the research at any time and without providing any reason.

THE PROJECT: The role of design in the public sector

WHAT: This research looks at the potential role of design approaches in supporting organisational development within the public sector. The research focuses on exploring the process and emerging challenges of embedding design in these contexts, understanding participants' experiences and perceived value of using design, and tracking its impact.

WHY: It is believed that involving both professionals and users in the design and decision making processes can lead to better quality outcomes, and that the visual methods used in design approaches can aid these processes.

HOW IS THE RESEARCH BEING DONE?

Workshop sessions: You may be invited to participate in design workshops. The researcher may want to use observations and outputs of these sessions as part of her research. You will be informed if the session is being recorded in any format (photography, audio, video). Note that audio or video recordings will have documentation purposes and will not be published. If you provide your consent, photographs from sessions might be used in later publications.

Questionnaires: After workshop sessions you will be sent an anonymous questionnaire where you will be invited to describe your experience of using design.

Interviews: You might be invited to be interviewed reflecting on your experience of the project and the role of design in it. Interviews will be audio-taped for documentation purposes. Anonymised quotes might be used in later publications.

Meetings, informal conversations and mail-communications: As the research looks at how design is perceived and adopted, as well as the challenges and value that emerge in this process, anonymised quotes from different communication sources might be used in later publications. If any information is to be confidential, please inform the researcher.

Internal reports: information in internal reports might be of relevance for introducing the design context or the impact of design interventions. If any of the information in the reports provided to the researcher as part of the design project is to be confidential, please inform the researcher.

WHAT WOULD YOU BE AGREEING TO?

I confirm I have read and understood the research project, and do not have any remaining questions. I understand that my participation is voluntary and I can withdraw at any time without giving any reason.

I agree to the use of the anonymised data gathered, including quotes, contextual information, observations and workshop outputs, in future research and publications. If I provide any confidential information, I will inform the researcher.

I agree to the session to be photographed / audio / video recorded. Note that audio and video recordings are for documentation purposes and will not be published, but photographs might.

I hereby fully and freely consent to participation in the study which has been fully explained to me (please ask the researcher if you have any further questions).

Your Name: _____ Date: _____

Signature: _____ Date: _____

e-mail: _____

Gatekeeper: _____

Signature: _____ Date: _____

Researcher: _____

Signature: _____ Date: _____

Thank you!

Figure 52 Consent Form

Appendix G

First analytical stage: Understanding the empirical context

As described in the analysis section of the methodology, the first analytical stage included the scoping and immersive case studies and aimed to develop research questions and conceptualise the empirical context. Given the generative and immersive purposes of the analysis, data was iteratively collected and analysed (Merriam, 1998, p.153) through ‘direct interpretation’ (Stake, 1995, p.74) to capitalise on the researcher’s sensitivity and intuition as design practitioner. This approach to the analysis was possible due to the moderate amount of data collected and its simultaneous analysis, which it made unnecessary to devote “time to formal aggregation of categorical data” (Stake, 1995, p.77). To process the data, between interactions with the field (i.e. meetings and design activities), the researcher read through and annotated empirical and reflexive materials, generating analytical memos to instigate theoretical sensitivity (Glaser, 1978) and the development of questions. The researcher used the constant comparison method (Charmaz, 2006, p.54), contrasting different sources and instances of data, seeking similarities and differences. The researcher compared the views and actions of participants and contrasted reflexive and empirical materials. Empirical materials included observational notes from interactions and informal conversations with participants, the four self-reported questionnaires sent after workshops, the two interviews with gatekeepers, and extant documents from the projects. Reflexive materials included the researcher’s self interviews and reflexive memos. It is worth noting that reflexive materials had greater relevance in the orientation phase for the development of research trajectories and questions.

Through this process, and from very early stages of analysis, the researcher began to identify conflicting perceptions between designers and public sector professionals regarding design’s potential contribution and role. These early insights led the researcher to actively question the data searching for *surprises*. Ingold (2011, pp.63–64) defines the process of

being surprised by events as a consequence of failed predictions or expectations. This analysis sought for surprises in order to identify public sector professionals' and designers' failed predictions and expectations regarding design methods and strategies and their applicability and suitability in a particular contexts, with a view to then exploring the origins of those divergences. As the amount of data grew, the researcher was able to search for regularities (Robson, 1993, p.372) across perceptions and situations. The emerging tensions between how designers and public sector professionals envisioned design's role and contribution revealed gaps in the literature and shaped the research questions. The literature reviewed for this study, in seeking to demonstrate design's value as shown in Appendix C, failed to question why public sector professionals engaged with or rejected particular design strategies or methods and how those decisions took shape. Building on this gap in the literature and the empirical insights, the research focused on understanding how public sector professionals evaluated design strategies and methods. In response, data collection questions were gradually refined and participants were directly questioned about why they held particular views of design strategies and methods and their suitability in their projects, and how they made decisions regarding their application. These questions began to expose organisational constraints and beliefs regarding what design could do and what was appropriate in their contexts, which were limiting participants' exploration and application of design strategies or methods. These insights led to the study of the social construction of public sector professionals' conceptions and evaluations of design strategies and methods including both the processes and the factors playing a role in public sector professionals' uptake of design strategies and methods. Building on both the literature and these empirical insights, the researcher developed the theoretical framework described in the methodology (3.1.2).

Appendix H

Second analytical stage: Identifying patterns

As described in the analysis section of the methodology, the second analytical stage included the main case study and aimed to identify similarities and differences in how public sector professionals evaluated design suitability in relation to the characteristics of their projects and social contexts. To do so the analysis compared across the four embedded units of analysis, that is, the four design projects from the different public sector organisations attending the training course. Building on the empirical insights from the first analytical stage, the role of research participants (designers or public sector professionals) became the secondary unit of analysis in order to contrast their perceptions of design, its suitability, contribution and role.

The materials analysed included empirical materials such as observational notes from the five days of training and eight interviews (four with training participants, two with their senior managers, and two with designers). It also included secondary data in the form of extant documents and artefacts such as the organisations' applications to the training programme, project summaries and presentations, participants' blogs, and training materials including marketing brochure, training slides and design tools provided. As this analytical stage aimed to identify patterns in the data and included a greater amount of data, the analysis took a categorising or coding strategy (Maxwell, p. 77-78) to allow fracturing the data (Strauss, 1987, p. 29) to compare across units (Maxwell, p. 78). The software NVivo was used to this end.

This coding took a grounded approach and adapted the analytical strategies and methods proposed by Charmaz (2006) for constructivist grounded theory to the nature of data gathering and the analytical purpose of comparing across projects. This grounded approach sought to ensure that the main case analysis did not force onto the data categories developed in the first phase of analysis as their contexts were different. In addition, the main case study offered sufficient data to identify patterns, as it included four projects, and data

collection was more targeted to answering research questions, as these were refined in the first analytical stage. The insights from the first analytical phase were reincorporated in the third analytical phase to triangulate the findings from the main case study (Next Appendix). To ensure that the analysis captured public sector professionals' perspectives and use of language in describing design practice and their contexts, data collection and analysis did not take place simultaneously. Instead, formal analysis was postponed until interviews with participants started, as analysing observational materials or extant documents first might have overshadowed participants' voices.

It is worth noting that the researcher undertook a first analysis looking at the impact of the training in response to the Design Council's purposes, and then continued to analyse the data in response to research questions. The analysis on impact partially aligned with the research questions, as they both sought to understand participants' perceptions of design's value and suitability and compared the degrees of uptake of design methods and strategies across different teams. As many of the categories and analytical memos that were developed while looking at impact were carried on to the analysis interrogating how public sector professionals evaluate design strategies and methods, this account of the analysis discusses them jointly.

This grounded analysis underwent three phases: (1) Initial Coding, (2) Focused Coding, and (3) Thematic Clustering and Cross-Unit Analysis. The initial coding (Charmaz, 2006, pp.47–57) was open to exploring any emerging leads and the labels fracturing the data stayed very close to participants' words. The focus coding (Charmaz, 2006, p.57) sought analytical sense by actively questioning the data and examining connections across codes and categories. Finally, categories and codes were thematically clustered to simplify the handling of data for comparing across units and contrasting participants' meanings and actions within the particular characteristics of their projects and organisations.

Initial coding and development of categories

The analytical methods and strategies used drew primarily on Charmaz's suggestions for the initial coding used in constructivist grounded theory (Charmaz, 2006, pp.47–56). The

researcher used line-by-line and incident-by-incident coding depending on the intricacy of the material being analysed (Charmaz, 2006, pp 50, 53). When data fragments related to participants' experiences of learning and using design, the coding used gerunds to preserve participants' thinking processes and actions (Charmaz, 2006, p.49). In vivo coding (Charmaz, 2006, p.55), using a word or phrase directly from the transcript as the code label, was also used to preserve participants' own words for describing design methods and strategies, their contexts or organisations, or their experiences. This initial coding produced a large amount of inductively generated codes, their labels very descriptive of their content and having no further conceptualisation. An example of this initial coding is shown in Figure 53.

Through an on-going process of constant comparison between emerging codes and categories the researcher looked for similarities and differences in meaning and connections between codes, iteratively merging, relabeling and grouping codes. During the initial coding the researcher made annotations and created analytical memos indicating links between codes and categories, and trajectories for further analysis (Charmaz, 2006, pp.49, 57). Examples of analytical directions that inductively emerged in the initial coding were participants' *comprehension* of design strategies and methods, and relationships between participants' beliefs and behaviours. For instance, the researcher's design sensibility flagged up nuances in meaning regarding participants' use of design language. The researcher began noting in memos and codes uses of design terminology that did not *feel* right. Later examinations of these led to more focused coding on participants' *comprehension* of design methods and strategies.

Initial and focused coding were not completely sequential activities. As the initial coding advanced, the researcher became more sensitive to emerging ideas, and the coding gained clarity and consistency as more focused codes began to emerge. For instance (see Figure 54), a clarification question in one of the interviews made explicit the concept of teams' autonomy to undertake design activities without prior agreement with senior management. This notion resonated with prior codes such as 'Not being allowed to...', 'Reporting back to

managers', or 'Getting buy-in from managers', giving emergence to the category 'autonomy'. The organic development of categories often required going back to review already coded materials seeking to answer more focused questions.

Focused coding

The focused coding sought to "give coherence to the emerging analysis" (Charmaz, 2006, p. 60) by actively and systematically questioning the data and examining and connecting categories and subcategories and their dimensions. The development of categories in the focus coding often required "a higher level of abstraction" (Holton 2007, p. 276). For example, initial codes such as 'struggling to translate design methods' or 'finding examples from other contexts irrelevant' were clustered into 'potential gaps in design communication'. This interrogation of the data drew on the strategies and methods proposed in grounded theory for focused and axial coding (Charmaz, pp. 57-63), as well as on other social researchers. For instance, the focus coding purposely searched for differences between what people are saying and what people are doing (Charmaz, 2003, pp.94-95; Bryman, 2004, p.409; Lofland & Lofland, 2006). This strategy sparked a new dimension in teams' design activities, which had been overlooked in the open coding: the degree of completion of design tasks. Looking closely at how participants spoke about their projects' activities resulted in the distinction between 'intended activities' (what people said they were going to do) and 'undertaken activities' (what teams had actually done or begun to do). This focused coding revealed qualitative differences between teams, generating more conceptual categories that classified teams as 'high doers' and 'low doers'.

Berger (2015, p.6) advises against comparison between the researcher's and participants' experiences, advocating for 'a constant deliberate effort to maintain the separation' between them. This research instead embraced comparison as a way of, firstly, harnessing the researcher's design sensibility, and secondly, identifying validity threats by making explicit conceptions held by the researcher that could have an impact on interpretation. As Charmaz argues (2006, p. 47), coding requires the researcher to scrutinise both their own and the participants' uses of language, and examine assumptions hidden in

the researcher's attributions of meaning. As mentioned in the section above on initial coding, the researcher's design sensibility resulted in codes being used to flag up what she perceived as inaccurate uses of design terminology or descriptions of methods and their applications. These explicit comparisons between participants' and researcher's perceptions of design sparked further reflexive enquiry scrutinising the researcher's understanding of design. It also triggered a process of constant comparison between the participants' and the Design Council's descriptions of design strategies and methods, to ensure that the researcher's interpretations of participants' comprehension of design responded to the training provided and not to the researcher's understanding of design.

Thematic clustering and cross-unit analysis

To answer the research questions, the cross-unit analysis aimed to, firstly, find patterns in public sector professionals' evaluation processes and decisions regarding the suitability of design strategies and methods in their projects, and secondly, to understand the social construction of these evaluations and decisions by identifying what factors played a role in shaping them. To simplify the handling and retrieving of data for comparing across units, the codes and categories from the focused coding were grouped by thematic similarity, according to what participants were speaking about. This thematic grouping served to encapsulate large amounts of codes into categories and subcategories related to different aspects of evaluation and the social context, making it easier to compare between projects. This clustering process resulted in four overarching themes:

- **The Organisations:** This cluster included participants' references to their departments, organisations, the wider public sector or external pressures of working in the public sector.
- **The Projects:** This cluster included all the information about the projects and their contexts, such as project aims and motivations, the teams' work structure and relationships with stakeholders.
- **Training:** This cluster included participants' views, and the researcher's observational notes, on the format and content of the training. It also included

fragments of data coded directly on training materials such as definitions of design strategies and methods.

- **Design:** This cluster included all the codes and categories regarding how participants perceived, comprehended, valued and used design, as well as perceptions on further use of these approaches.

In order to understand the social construction of public sector professionals' decisions and identify what factors influenced their uptake of design methods and strategies, the cross-unit analysis sought to unpack the underlying beliefs and rules that shaped and legitimised the uptake or rejection of these methods and strategies (Foucault, 1972, pp.25–26). This would respond to the analytical question 'why do people think and say those things?' To do so, the analysis looked at both stated and unstated explanations. Stated explanations would include participants' descriptions and justifications for their views and decisions. These revealed the evaluation criteria that public sector professionals used to determine what was suitable in their area of work, organisation or generally in the public sector, as well as prior experiences and knowledge of similar methods that informed their decisions. Searching for unstated explanations implied looking beyond the "manifest discourse" (Foucault, 1972, p.25), or the explicit views expressed by different actors, and beyond cursory relationships between codes, categories and units by examining their relationship with the larger 'field' in which these emerge (p. 26). This involved, for instance, comparing patterns in uptake or rejection of design methods and strategies in light of the characteristics of the projects, contexts and organisations in which the uptake or rejection occurred. Comparisons such as these revealed, for instance, links between uptake and type of users or organisational traits that had not been explicitly pointed out by participants.

The main output of this process was the development of the theoretical framework clustering the factors influencing public sector professionals' uptake of design-led innovation approaches into individual, interactional, contextual and organisational factors. From a constructivist perspective it could be argued that contextual and organisational factors could be clustered into individual factors as these are shaped by previous experiences

working in the public sector. In order to determine which experiences and rules of conduct engrained in public sector professionals' practice had become shared meanings (Argyris & Schön, 1996, p.7), and raise individual experiences into the contextual and organisational categories, this analysis attended to the similarities found across teams, types of projects and their contexts .

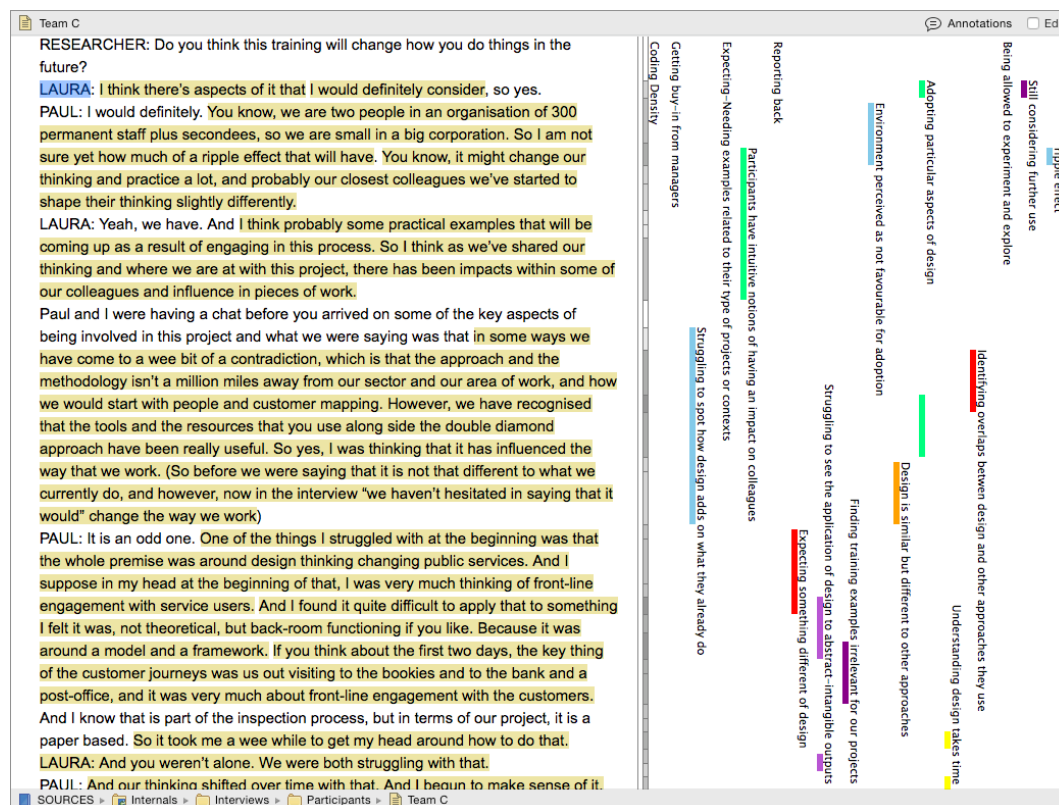


Figure 53 Screenshot of initial coding

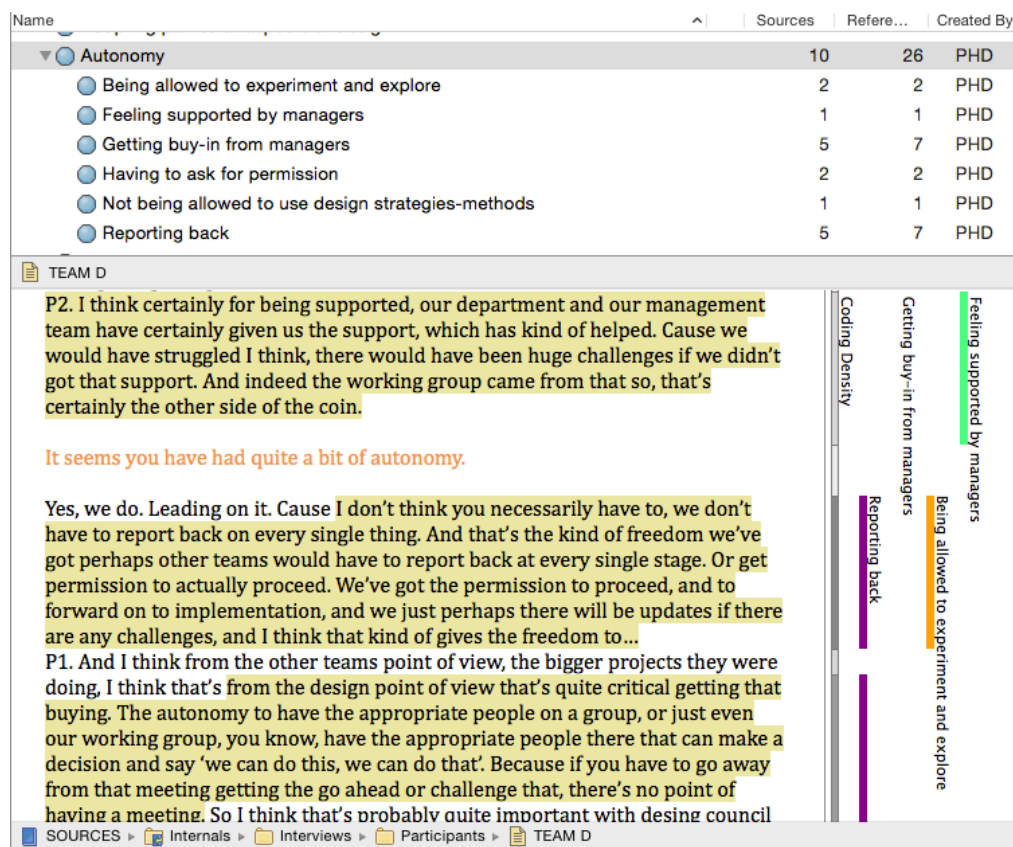


Figure 54 Example of focused coding

Name
<ul style="list-style-type: none"> ▼ ● Design Communication <ul style="list-style-type: none"> ● Different types of projects may benefit from different presentations of design ● Examples from other contexts (project types) do not contribute to participants' unde... ● Representations of design that can lead to inaccurate expectations or conceptions ● Different to their normal way of doing ● Difficult to see how to apply design to abstract problems, such as systems, framework... ▼ ● discovery <ul style="list-style-type: none"> ● Breating assumptions - reframing questions ● Going back to refine problem ● Reframing of Questions ▼ ● Future Adoption <ul style="list-style-type: none"> ● Don't sound conviced about design's value or confident about future adoption ● Organisation has an impact on adoption and what participants can do beyond the s... ● Potential adoption of particular aspects ● Potential Application beyond Training projects ● Launch Attendance ● Not particular interest from organisation to use participants' insights ▼ ● Organisation <ul style="list-style-type: none"> ● Acceptance of how things work ● Resistance to changing how things are working ● Perceptions of value (particular aspects and tools) ▼ ● ripple effect <ul style="list-style-type: none"> ● Impact on colleagues ● Project Impact ● Shifts in thinking ● Similar to their normal way of working ● Strange use of design terminology ● Targetted examples are useful for understanding ▼ ● The Projects <ul style="list-style-type: none"> ▼ ● Different types of projects <ul style="list-style-type: none"> ● contributing to a wider project ● Stand-Alone Project ● Project Activities ● Project description ● Project motivation ● project results ▶ ● Time-Work invested in the project <ul style="list-style-type: none"> ● Who made the applicaton ● They cannot set the agenda or direction of the project ● Time and resource constraints define the scope

Appendix I

Third analytical stage: Articulating findings and contributions

The aim of this final analytical stage was to make sense of the results, findings and contributions of the research. Whereas prior stages of analysis had the intention of fragmenting and examining data, this phase had an assimilating role (Kolb et al., 2001; Kolb & Kolb, 2005) allowing the researcher to move the enquiry from reflection on specific events on to a more abstract conceptualisation of findings. It included a variety of activities aimed at triangulating insights from the first and second analytical phases, conceptualising research results and exploring their practical implications. It is worth noting that these activities were not undertaken in a strict sequential manner. Rather, the development of the conceptual frameworks proposed in this research and the exploration of the practical implications of research results were interlinked activities that informed each other in an iterative sense-making process.

Triangulation

The analysis of the main case study began to reveal some recurrent themes and correlations with the insights that had emerged in the scoping and immersive case studies. Examples of these could be instances of participants' lack of time and capacity or their reluctance around involving users. In response, this third analytical phase took a more systematic approach to comparing and triangulating the data from the three cases.

The insights from the first analytical phase, which included the scoping and immersive case studies, had been analysed through direct interpretation but not coded. To support triangulation, some materials from the first analytical phase were coded through the lens of the insights and categories developed in the main case study. This coding used the highlight feature on Windows Word (Figure 55) and functioned as thematic coding with pre-defined categories, and included the two interviews and the responses to the four self-completion

questionnaires. This coding revealed nuances in the data that had escaped the researcher's attention in her first analysis through direct interpretation, such as interviewees' comparisons of design with other approaches and with *their normal ways of doing*.

SLOWING DOWN (Positive)

So I found that quite funny. And they would be like, what we could do is...

I think it absolutely helped us pause, and try to understand the problem from a very open curious perspective, and work on redefining it. It is really difficult, it is a really complex issue. That was good.

DEALING WITH COMPLEX TEAM DYNAMICS

But in my reflection of it, like I said, I feel I should have intervened earlier and said: hang on a minute, there's stuff going on between the teams, we need to deal with the people in the room and how we work together.

SLOWING DOWN (Positive)

But in terms of what it brought that approach in terms of problem solving, I think that slowing down, understanding the problem better, connecting to people's real experiences, that was really valuable.

SLOWING DOWN (Negative – Going backwards - designers trying to understand the context slows down process)

We didn't get to, because the problem was so massive and because we, I don't know if they would agree, but I, we felt that they spent a lot of time trying to understand our context, and we were kind of going, why do we have to explain all of these things, so that was kind of, that held us up a bit.

GOVERNMENT PACE (SLOW) – Bureaucracy

And we then also needed people to go to talk to people directly, and we had to go through local authorities and health boards, and that took time to set up and actually if we had thought or known that, we would have been more organised.

So there were some issues with it. But I think, I really value when you're just kind of stuck with it and then you are open to where it's going and then challenge us a lot about why you think that and that. It was hilarious when we got to generate loads of ideas.

Because what we just spent a lot of the session saying: hmm, it is so complex and that... And afterwards [the designer] said to me, oh, that didn't really work.

ROLE OF DESIGNER

And I said, well next time, you just need to be really tough and force us to it

And he did that and it was an excellent session. Everybody did just kind of go, ok I'm just gonna have it.

GETTING STUCK

We never got to the point where we could actually prototype and test some ideas which

Figure 55 Screenshot of coding using the highlight feature on Microsoft Word

The newly coded materials, descriptions of the projects, analytical memos and early reports on insights were used to compare and contrast across the six units (the six projects studied). The researcher compared and contrasted materials seeking multiple explanations

(Charmaz, 2016) and relationships across categories and events. This process enriched the results from the main case study. Comparing differences and similarities across all cases brought new dimensions to some categories, such as participants' degree of compliance with their perceived autonomy, and revealed differences in results between the practice-based and the training-based projects, such as participants' differing experiences and perceptions of design strategies depending on the designers' role as practitioners or mentors. Insights from the first analytical phase also expanded on areas unexplored in the main case study. In general, given the researcher's closer involvement in the scoping and immersive case studies, this data offered more detail around public sector professionals' discussions as they evaluated the suitability of design methods and strategies. More specifically, they also offered insight into the procurement negotiations and the impact of public sector professionals' preconceptions of design, which were supported by anecdotal evidence from the main case study.

Exploring the practical implications of research findings

Research findings had revealed how the articulations and representations of design influenced public sector professionals' conceptualisations and uptake of design strategies and methods. This analysis explored the meaning and practical implications of the insights related to design communication. The researcher decided to tackle this exploration through practice, by developing illustrated videos introducing design innovation practices to public sector professionals. The resulting videos are not envisioned as finished products. They are the materialisation of "ideas, sketches, and thought experiments" (Fallman, 2008, p.18) that the researcher developed to make sense of research findings. By embarking upon the practical development of descriptions and representations of design for public sector professionals, this design exploration (Fallman, 2008, pp.7–8) supported the researcher in defining more explicitly the gaps in design communication emergent from the empirical materials. This helped to build connections between research findings and design discourse and literature, and develop concrete propositions and strategies to overcome communicational barriers. As the making of these illustrated films was purely instrumental

to making sense of research findings, their development process in terms of aesthetics and technical decisions is rendered irrelevant for the purposes of the research and will not be discussed here. Instead, the making of the films is discussed in terms of analysis by describing the questions explored and how the development of the films functioned as an analytical method.

This practice-based analysis included a variety of activities aimed at answering the analytical question: how can we better communicate design? Figure 56 portrays some of the questions and topics explored. Firstly, through a documentation phase, the researcher sought to immerse herself in the perspectives of public sector professionals and designers. This included repeated readings of transcripts and observations to foster sensitivity towards public sector professionals' perceptions and attitudes towards both design and their contexts to gain a fuller picture of public sector professionals' realities, and how these guided their behaviours and decisions regarding design uptake. A visual map clustering some of the categories developed in previous stages of analysis relevant in the communication of design approaches helped the researcher incorporating public sector professionals' voices and make connections between categories to develop communicational strategies (Figure 57). To incorporate designers' voices and familiarise herself with the dominant rhetoric in design discourse, the researcher went beyond empirical materials and included texts from design companies and innovation bodies included in the literature review, as specified in the scope of context (2.3.4), as well as films (Table 35) portraying the contribution and challenges of incorporating design-led innovation practices in public sector contexts.

The making process included sketching and scripting, filming and audio recording, and video editing. As an analytical method, this process provided a platform for dynamic and systematic reflection, where ideas and concepts were revisited through its different phases, and allowed the researcher to conceptualise research findings through making, by using visual and tangible means (Fleming, 2001; Fleming & Baume, 2006) to explore insights. This design exploration acted as a dialogical enquiry (Berniker & McNabb, 2006, p.645), where alternative descriptions and representations of design are both constructed and emergent

from the dynamic interaction between the multiple perspectives present in the data. This process posed questions regarding the value, role, and suitability of design in public sector contexts, and envisioned dialogues alternating between designers and public sector professionals based on the documentation and empirical materials gathered. Some of the dialogues constructed during the development of the videos are illustrated in the findings and discussion chapters (Chapters 5 and 6). Having the practical objective of developing representations of design for public sector professionals based on the evidence gathered triggered questions that otherwise might have remained untapped. This process made explicit both conflicts and overlaps in how public sector professionals and designers conceptualised design strategies and their suitability in public sector contexts, enabling the researcher to explore and address those tensions.

The development of these videos contributed to this study's goal of identifying and exploring opportunities to enhance public sector professionals' understanding and uptake of design-led innovation approaches. However, it is important to note that the films do not capture the research outputs of this process, that is, the communicational gaps identified and strategies developed. Although some research findings and propositions are implicit in their narratives and representations, the main outputs of this practice-based analysis in terms of research are the communication strategies proposed in the discussion (Chapter 6), including the procurement ladder portraying the roles or relationships of design and designers with the public sector, which constitute one of the main contributions of this research. Nonetheless, these videos have been made available online (Fernandez-Orviz, 2016), as they have the potential to enhance awareness and understanding of the application of design-led innovation approaches in the public sector.

HOW CAN WE BETTER COMMUNICATE DESIGN TO PUBLIC SECTOR AUDIENCES?

KEY IDEAS TO COMMUNICATE

- 1. What is it? Why is it complex to articulate? (layers beyond traditional conceptions)
- 2. What can it do for Public Sector? What can it add that they are ~~not~~ doing already?
- 3. Key Design Principles and key tools associated with them
- 4. What does a designer bring to it? Diff. designers diff. skills so if you are procuring design you might want to know what you need it to advance

⊕ The Elevator Pitch

KEY INSIGHTS TO BUILD ON

- Mistrust of Evidence
- Overlap / Confusion with other approaches
- Oversimplification / misconceptions by Public sector
- Perceptions of value/association
- This is all design has to offer
- Finding the right designer / approach

- ⊖ Why not simply answer their questions...
- Why should I care? How is it going to help me?
 - * What does it bring that we are not doing already?
 - What do users know that we don't?

Figure 56 Questions and insights to be explored in the practice-based dialogical analysis (Author, 2018)

Table 35 Films complementing the literature review on how design is communicated by designers

	TITLE	LENGTH	PROVIDER	FORMAT
A	What is design thinking?	4:20	Daylight	Digital animation
B	What is Design Thinking?	1:50	Sean VanGenderen	Digital animation
C	What is service design?	3:06	Design Council	Talking heads
D	What is co design?	1:43	PROUD Europe	Cut-outs
E	What is service design	3:00	Yosef Shuman	Digital animation
F	The Story of Co-Design	3:47	ThinkPublic	Blackboard drawing + cut outs
G	Prototyping made simple	2:48	ThinkPublic	Digital animation
H	Prototype Barnet_Animation	4:40	Think Public	Cut outs
I	This is service design thinking – book trailer	1.26	Captain Motion (Smapply)	Digital animation resembling post-it notes
J	Codesign - Le design c'est quoi ?	2:19	Cabaroc	Digital animation
K	Introduction to Service Design - What is Service Design?	3:28	Service Design Network (SDN)	Talking heads
L	Virtual Crash Course in Deisgn Thinking	1:20:04	DSchool, Stanford Online	Recording of a training workshop on design thinking
M	Design the New Business	39:30	Zilver innovation	Documentary Film
N	Design and Thinking	1:14:11	Mu-Ming Tsai	Documentary Film
O	This is service design doing – executive summer school, Berlin, July	5:35	Smapply	Design training marketing

Conceptualising research results and answering research questions

The theoretical categories and findings, conceptual frameworks and communicational strategies proposed in this research were developed through an iterative process which began in the conceptualisation phase, began to take shape during the analysis of the main case study and through the development of the videos described above, and continued during the writing stages as the researcher sought to make sense of and communicate her findings. In addition to the analytical activities already described, ‘clustering’ (Charmaz, 2006, pp.86–89) was a useful visual method for understanding the relationships between different theoretical categories. These clustering exercises (see example in Figure 58) gave emergence to two representations and key contributions of this research portraying different aspects of how public sector professionals evaluate design methods and strategies in their work. One represents public sector professionals’ journeys through learning and evaluation, identifying critical evaluative steps. The other portrays the factors that influence public sector professionals’ uptake of design strategies and methods and corresponds to the empirical development of the theoretical framework.

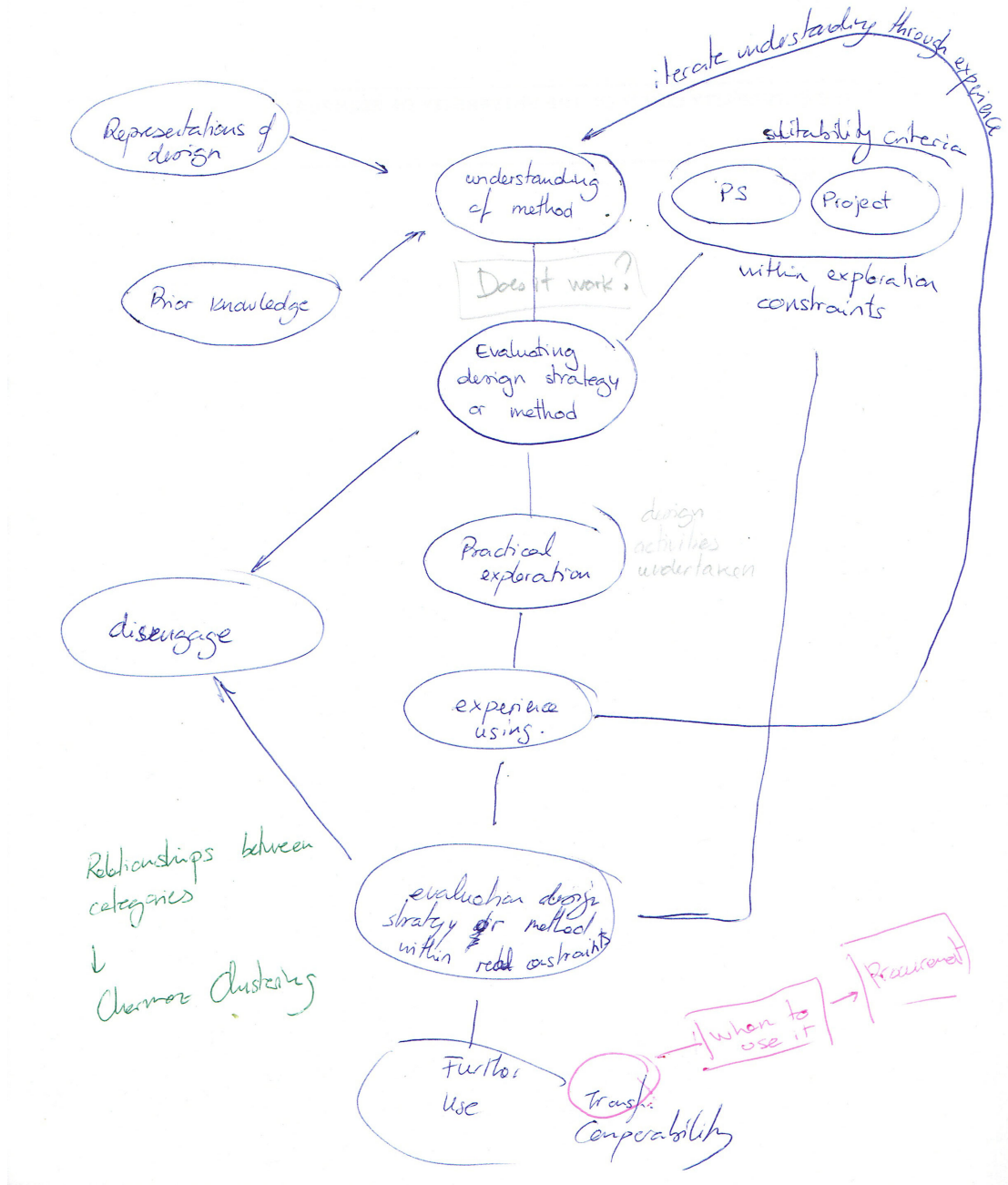


Figure 58 Example of clustering (Author, 2018)

Appendix J

The value of working visually

In general terms, research participants from all three case studies seemed comfortable working with visuals methods and using images to communicate their projects to others. Furthermore, public sector professionals praised visual methods and workshop environments for their capacity to support thinking and collaboration. However, as this section shows, there were differences in the ways visual methods were used and valued between the practice-based and the training-based projects.

Communicating visually

Regarding communication, the use of visuals was praised for getting the message across quicker. As Eric put it (CS3, I):

You could type, type, type, but realistically people don't have the time to read things. So if you do the visuals you get it much quicker and you hook them in.

For instance, the double diamond functioned as a communication tool for participants to justify to management and colleagues spending more time in discovery (CS3, O and I, Paul and Laura, Neil). By contrast, in the second case study, where the researcher did not provided the team with an articulation of the process because the project brief included the double diamond (p. 4.2.1), Anthony reported lacking a 'tangible roadmap' (CS2, I).

In the practice-based studies, participants reported using images developed by designers to communicate their projects outside the team. In the first case study, two participants from the second team reported using images from the map developed by designers in presentations 'to describe teams to others' (CS1, Q2, Participant A), and claiming some of the images produced by designers may become their team 'logo' (Participant B). In the second case study, participants reported using the comic created by the researcher to introduce the project to colleagues and senior management (CS2, O). Anthony claimed (CS2, I and O) that *it represented just how he felt and what he was trying to achieve.*

Aiding communication and taming collaboration dynamics

Public sector professionals from all projects consistently acknowledged the value of visual methods and workshop environments for enhancing communication and understanding among stakeholders and creating a safe and non-judgemental space.

Lee's team created a paper mock-up of a potential solution to discuss with their working group. They acknowledged that 'this strategy felt awkward and alien to them, but people were able to engage with it and work on it' (CS3, O, Day 90), and it helped stakeholders to 'tak[e] ownership and [be] part of it as a group' (CS3, I). Neil's team developed user journeys and integrated the managers of the services into the process. By '*mak[ing] it more real, [they] dissipated some of the tension in the room*' (CS3, O, Day 90) and this helped them build a common understanding among stakeholders (CS3, I). Helen (CS1, I), who had more experience working with design, also emphasised that the '*the visual bits can add to change difficult dynamics, because they help people having uncomfortable conversations*'.

In the practice-based studies, participants also praised the non-hierarchical open environment of design workshops, which felt less restrictive and supported non-judgemental communication. As the following quotes from questionnaires show, these qualities are closely linked with facilitation and the atmosphere created by designers:

PARTICIPANT 1 *The environment was one where we could shout out our thoughts or correct the facilitators and this really aided the process*
(CS1, Q2)

PARTICIPANT 2 *I felt liberated from the inhibition of 'doing it right' through the creative design approach. I came up with quite different user examples than I would have if I had to perform the same task in a professional conversation with colleagues. I noticed feeling surprised about the breadth of my outputs, as I was drawing and writing freely, and not being limited by criticism*
(CS2, Q2)

PARTICIPANT 3 *[The designed artefacts and activities] made it a more relaxed atmosphere, stop us sticking to our normal patterns of behaviour and conversation.*
(CS1, Q1)

Thinking visually

To a lesser degree, there was also evidence of public sector professionals appreciating the value of visual methods for increasing understanding of the design situation, supporting thinking, and seeing things differently. This was most evident in the practice-based studies (CS2 and CS2), where designers produced visual maps synthesising participants' discussions, aiming to support them in understanding their contexts, project aims, or research insights. The training participants' use of visual methods, on the other hand, was primarily through the templates provided (CS3, O). As a consequence, the value of visual methods for aiding thinking and understanding came across more strongly in the practice-based studies but was also strongly associated with the designers' intervention and facilitation.

For instance, participants stated that the design activities and tools provided by designers *'were really powerful and helped [them] step back and be more objective about [their] plans'* (CS2, Q1) or *'made the activities a lot more structured'* (CS2, Q2). Participants also found it surprising that design workshops were *'a lot more interactive than they had expected and required them to think'* (CS2, Q2). Participants also valued the visualisations generated by designers:

PARTICIPANT 1 *Thanks to some excellent facilitation (particularly the work around (CS1, Q1) capturing the themes we were discussing and generating a mission statement) we left with a much clearer idea of what we are, as a team.*

PARTICIPANT 2 *[The designers] drew up a big plan in a well structured way which will help (CS1, Q2) us in the future.*

PARTICIPANT 3 *[The designed artefacts and activities] Made it more relaxed atmosphere, (CS1, Q1) stop us sticking to our normal patterns of behaviour and conversation.*

Helen's appreciation of visual methods (CS1, I) also went beyond designers' *'ability to draw'*, valuing as well their ability to *'synthesise information'* and visualising it *'in a way that will help people see things differently'*.

Participants in the training also noted how design helped their stakeholders think differently. For instance, Lee explained (CS3, I) that their paper mock-up prevented the working group from *'getting too focused on the technicalities'*, keeping them at *'a kind of broader level where you can have a bit of interaction'*. Paul and Laura (CS3, I) noted that their journey-mapping workshop helped attendees to reflect on their work practices and that attendees *'would do things differently as a result of that process'*.

However, there were fewer examples of teams engaging in visual mapping with the purpose of seeing things differently. Only Paul and Laura (CS3, I) aimed to *'map [several interacting internal processes], expecting this would give them a new discovery'*.