Design in Public Innovation

Introducing design for policy and innovation in the Chilean public sector through a government laboratory

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A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy at the Royal College of Art.

Royal College of Art

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Abstract

Governments are increasingly implementing public sector innovation laboratories (PSI-Labs) to support public innovation. Although most of these Labs use design approaches to drive innovation, previous research shows that the impact of such approaches is limited. This is due to the lack of integration of design with policy processes and power structures, the weak legitimacy that design knowledge has as a source of policy evidence and the incapacity of design to turn the public sector's politico-organisational factors into matters of design.

This design research project aimed to further understand the value of design in Public Sector Innovation and to clarify the role it can play in the different levels of government transformation when introduced and integrated into the politico-organisational context of a new PSI-Lab.

Through a process of 'action research through design', this project shows how design was used as a core capability to create, implement and operate a new PSI-Lab at the highest levels of central government. Through the reflections from the process of practice, strengthened by a qualitative study of the case, this thesis explains how design was effectively introduced and integrated into the politico-organisational context and policy cycle of this new PSI-Lab, helping to increasing its impact and scale.

This research demonstrates that integrating design into the politico-organisational context of PSI is possible when: (1) design is practised as an attitude of turning these factors into matters of design; (2) the practices of design and politics are intertwined in building legitimacy and social capital; and (3) policy-cycles are understood as adaptive and dynamic such that policy design and implementation are practised as two interdependent and experimental activities.

Once the barriers of integration had been overcome, the study shows that this specific PSI-Lab was able to scale design as an innovation capability across a broader spectrum of the public sector, helping to reposition design in public sector innovation research and practice as an open, flexible and integrative approach to deal with public problems. Finally, this study offers a body of knowledge from practice on how to design and implement a PSI-Lab in a large public sector system.

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Publications

I have previously published outcomes of the presented research in the following publications:

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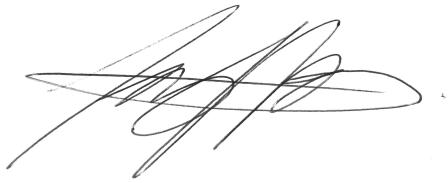
Rebolledo, N. (2016) *International Conference Future State 2016: Innovation for the people. Summary of the discussion*. Santiago, Chile: Laboratorio de Gobierno & OECD. Available from: https://researchonline.rca.ac.uk/2432/ [Accessed: 2 November 2020].

Rebolledo, N. (2016) 'The value of design in policymaking'. In: Service Design Network (2016) *Service Design Impact Report: Public Sector*. Köln, Germany: Service Design Network. pp. 40-46. ISBN 1868-6052. Available from: https://researchonline.rca.ac.uk/2427/ [Accessed: 2 November 2020].

Author's declaration

During the period of registered study in which this thesis was prepared the author has not been registered for any other academic award or qualification. The material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted.



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‘Design is the preparation of a prescription for some artefact or system in the light of all the relevant functional/constructional, economic, marketing, ergonomic and aesthetic requirements. A designer is someone who formulates a prescription for some artefact or system, in the light of all these relevant considerations.

If the subject matter is a machine, the designer will be an engineer. If it is, say, furniture, the designer may be an industrial designer. But if the subject is a detergent, the designer will be an industrial chemist. If a food product, an industrial chef. If a credit card system, a banker. If an insurance policy, an actuary.

Design can embrace any product or system and employ any creative skill’

(Archer, 1974).

‘Politics is the central human activity, the means by which the single consciousness is brought into contact with the social and natural world in all its forms’

(Gramci, 1934 in Hobsbawm 1977).

‘It is not about being more innovative out of a technocratic love of pure efficiency, but because of the democratic political demand that requires the construction of its legitimacy through its services to citizens’

(President Bachelet in Future State Conference, 2016)

‘To design is to trust people and the unknown, as we are, as it is’.

(Jones, 2012)

Chapter 1

Introduction

1.1. Research problem

Design in Public Sector Innovation Labs

Governments at both national and city level are confronted by an unprecedented pace of technological, demographic and social change, combined with increasingly complex policy challenges. To keep pace with the changing environment there is a growing realisation that governments need to take immediate action to draw upon the critical elements that support Public Sector Innovation (PSI) (OECD, 2014). PSI is the process of generating and implementing new ideas to create ‘public value’ (Mulgan, 2007) or value for both citizens and society (Bennington and Moore, 2011). By using PSI to cover new or improved processes (internal focus) and services (external focus) (Bason, 2013) PSI attempts to introduce cycles of problem definition, idea generation, testing, selection, implementation, and diffusion into the ‘logic’ of the public sector, to enable policy makers and public managers to go beyond existing problem frames, policy designs and delivery practices used to address public problems (Crosby, Hart and Torfing, 2017).

One strategy involves increasing the implementation of ‘PSI-Labs to address the perceived shortcomings of standard approaches to policy and service design' (McGann et al, 2018). Through catalysing and implementing innovation processes, and by drawing on a trans-disciplinary approach and cross-sector collaboration (Puttick et al, 2014), PSI-Labs aim to bring an 'experimental approach to building knowledge and creating system change to address the challenges facing governments and citizens'(Siodmok, 2014). According to Carstensen and Bason (2012), PSI-Labs are 'on the path to becoming a pervasive part of the social infrastructure of modern public organisations' (2012:5). This is reflected in the 65 PSI-Labs that were mapped in 2016 among EU Member States (Fuller and Lochard, 2016) and the 13 across Latin-American countries[1] (Acevedo and Dassen, 2016).

It has been observed that the majority of PSI-Labs use design processes and methodologies to support their PSI efforts, and have been characterised as design-led. This is particularly prevalent among labs that have been established

[1] In this study the Chilean LabGob is included

within public administrations or funded by governments to work on PSI (McGann et al., 2018).

There is an emergent academic literature that describes the contribution of design on PSI and policy-making to support the creation of public value at different levels (Ansell and Turfing, 2014; Junginger, 2017; Bason, 2017: Kimbell, 2015; Kimbell and Bailey, 2017). However, the impact of design in PSI is limited. This is due to the lack of integration of design with policy processes (Mintrom and Luetjens 2016; Junginger, 2013, 2017) and power structures (Tõnurist et al., 2017), the weak legitimacy that design knowledge has as a source of policy evidence (Bailey and Lloyd, 2016; McGann et al., 2018). More importantly, the main barrier is the inability of design to turn the public sector's politico-organisational factors into matters of design (Hyysalo and Hyysalo, 2018). Moreover, the gaps in the literature appear to reflect the lack of experience of integration between design and public management approaches to innovation in the context of PSI-Labs.

Research aims and questions

The introduction of design-led PSI-Labs within large public sector organisational systems is a relatively new phenomenon, and is regarded as an opportunity for the integration of these two worlds. However, the effectiveness and impact of design in these contexts have not been researched enough. Moreover, despite a significant number of studies that describe the valuable contributions design can make to PSI, few focus on the value and limitations of design when used as a core capability of PSI-Labs. In particular, few studies focus on understanding what happens when design as an epistemology and culture of practice needs to fit with the politico-organisational factors and power structures of the public sector, and with the ‘ways of thinking and doing’ of policy makers and public managers when working together at a higher level in the policy cycle.

This project sought to explore how design could be used as a core capability to create, implement and operate a new PSI-Lab at the higher levels of central government. Specifically, using a practice-based ‘action research through design’ approach, this study describes how design was used to create a PSI-Lab inside the Chilean Government –Laboratorio de Gobierno (LabGob). It also seeks to understand the value and limitations of the LabGob, once implemented, in supporting innovation processes at different levels of the policy cycle.

This design research project aims to further understand the value of design in Public Sector Innovation and to clarify the role that it can play in the different levels of government transformation when it is introduced and integrated into the politico-organisational context of a new PSI-Lab.

This study was guided by the following research questions:

RQ1 – About the integration of design into the politico-organisational context and policy cycle of PSI: What are the challenges and strategies for integrating design in the process of creating and implementing a policy and a service, aiming to foster PSI within the Chilean public sector?

RQ2 - About the impact and scale of design as an innovation capability in the public sector: How can design be scaled as an innovation capability across government so as to increase its impact?

RQ3 - About the adaptation of design when practised in policy and PSI: What are the distinctive characteristics of public sector 'ways of thinking and doing' that might demand different understanding and new developments in design to better integrate with the dynamics of the public sector?

As will be explained in Chapters 2 and 4, these research questions emerged from and were informed by the gaps in knowledge that were identified in the literature, as well as the goals of the Chilean government in developing an innovative approach to PSI.

Throughout the project and this thesis, a body of knowledge has been created and documented derived from an in-depth practical experience of designing and implementing a successful and impactful PSI-Lab at the highest levels of government. This involved effectively introducing, integrating and latterly expanding design into and beyond its politico-organisational context. This body of knowledge is a contribution to the fields of design and public management, as well as a useful tool to inform the development and deployment of future labs.

The intention of this research is to demonstrate how service design and classical models of policy design together with public service innovation, must be adapted to deliver the innovative policies, policy instruments and services at scale, that are required to address contemporary public problems.

1.2. Methodology

In May 2014, the Chilean Government announced plans to create a government laboratory to promote an innovative state at the service of people. This was the point of departure of this PhD project. Being involved in this process, I wanted to use this valuable opportunity to combine my practice as a strategic designer with my academic interests. This informed my decision to pursue a practice-based PhD and select an appropriate research methodology accordingly.

This research adopts a constructionist epistemology and uses 'reflective practice' as the guiding theoretical framework to connect thinking and action throughout the project. These theoretical positions support two methodological approaches for building knowledge: 'research through design' and 'action research'. I call this methodology 'action research through design' where the action refers to the reflective practice of designing the LabGob and knowledge is built 'through' the process of engaging, observing and reflecting with and upon the people involved, the processes followed and the products that emerge from these actions..

In this project I was involved in a dual role: as the strategic designer of the Laboratory as a new service, and as a researcher concerned with building design knowledge by reflecting upon practice. The research was designed according to three elements: my position as a practitioner-researcher within the development phase of the LabGob; the nature of my engagement and contribution as a designer-researcher; and the methods and research strategies used for gathering evidence, observing and reflecting.

The project was developed over an extended time span of four years and followed three sequential stages: preparation, which was about understanding the problem in practice and re-framing the question in the light of the situation and context; actions, which concerned designing and prototyping the LabGob through two action cycles of policy design and service implementation; and impact reflections, involving a qualitative case study of the evolution of the service 'in use' based on interviews and participatory workshops with participants and stakeholders.

1.3. Considerations of scope

In interpreting the findings and contributions of this thesis, there are some key considerations regarding the scope and the process of both practice and research.

- **Scope of the involvement:** The project of creating the LabGob extended beyond the scope of this PhD project. As a result, this thesis should be understood as a partial element of what this whole process meant in reality. Furthermore, the actions and findings should be understood as the result of a collaborative and iterative process, where design and knowledge outcomes emerged from engaging within a complex socio-cultural context.
- **Point of view:** As a consequence of the scale of the design process I was involved in, my reflections took a ‘wide angle’ enriched by singular experiences. I did not ‘zoom in’ on specific areas that might form a subject of in-depth research in the future. Each programme of the LabGob, and almost all the details of the diverse set of what I later call ‘experiences of collaboration’, would be worth further inquiry. Although my practice was concerned with the details of designing a service, the focus of the research was at both a systems and organisational level, trying to understand how design played a role in strategies, organisations, management and policy.
- **The use of literature:** According to the literature in action research, although there is a need at the outset to explore the literature so as to build the context (Chapter 2), the researcher should avoid 'over-reliance on the lens that the literature provides on the problem under study, to avoid keeping the researcher from seeing things that do not conform to expectations that the literature set up' (Herr and Anderson, 2015). In this study, the literature has been used, for example, to frame the research design in Chapter 3; to understand the policy process and support design decisions in Chapter 4; and to discuss the findings in Chapters 5 and 6.
- **The elements of practice:** Since services, policies and strategies are mainly ‘intangible’, the elements that support my design practice are for the most part documents. Some of these documents are grouped in the Practice Annex that can be found online. In Appendix 1 a full index of this annex can be found. Most of the documentation from practice is in Spanish. However, Chapter 4

gives a thorough description of all the actions and this annex is referred to when necessary.

- **Role of the appendices:** Since this is a PhD by practice, I had limited space to reflect and explain my actions. In this thesis, my actions and design outputs are important because they contain detailed elements that will create a better understanding of the arguments explained here.

1.4. Thesis structure

This thesis is structured in seven chapters:

Chapter 2 – Design in Public Sector Innovation Labs. A brief overview of the literature is presented to unpack the problem of the use of design in PSI. A knowledge gap in the literature is identified. This chapter provides a general context for the research, while substantive literature can be found in different chapters.

Chapter 3 – Methodology: Action Research Through Design. The context of Design Research and design as a discipline is provided to support the decision to use reflective practice, action research and research through design, as the main frameworks. A detailed explanation of the stages is presented together with a summary of the research questions and objectives.

Chapter 4 – Designing the LabGob as a Policy Instrument: Integrating Design into the Policy Cycle of PSI. In a detailed account of the process of practice, this chapter explains how design was introduced and integrated into the policy cycle of PSI by designing and implementing the Chilean LabGob as a policy instrument.

Chapter 5 – Integrating Design into the Politico-organisational Context of the LabGob. This chapter contains reflections on the evidence gathered along with the research project and discusses the challenges and strategies for introducing design into the policy cycle and power structures of a new PSI-Lab's specific politico-organisational context.

Chapter 6 – Discussion. Five key findings are briefly summarised and discussed against the research questions.

Chapter 7 – Conclusion. A summary of the findings is presented. The contributions and limitations of the findings are discussed, and finally, the implications of this project for further research and practice are explored.

1.5. Limitations

The limitations of this research project are related to making the findings valid, comparable and scalable. Despite the efforts made with the methodology and continuous assessment of the validity of the research design (see Section 3.4.7), there are three key limitations to be considered:

Limitations of context: A natural limitation of action research and research through design is that it is context dependant, and findings are situated. However, the scale of the project and the level of involvement can moderate those limitations. In this case, the limitations of context are related to the particular situation of the Chilean government system and policy development processes, which are characteristic of the Spanish and Latin-American tradition and less related to other policy cultures.

Limitations of methods: The object of study is very rich and the methods used are limited in capturing that richness. Although the methods used are considered to provide process validity, it might be beneficial to combine further practice-based research with case studies per programme, to complete the picture of the experience of the LabGob.

Limitations of the position: After my direct involvement in the project, my position was mediated by my interaction with the team or mediated by the LabGob itself. This limited my ability to develop a more critical perspective on the subject and the findings are therefore biased by my personal experience and involvement in the case. This position limited the dialogic validity of the research.

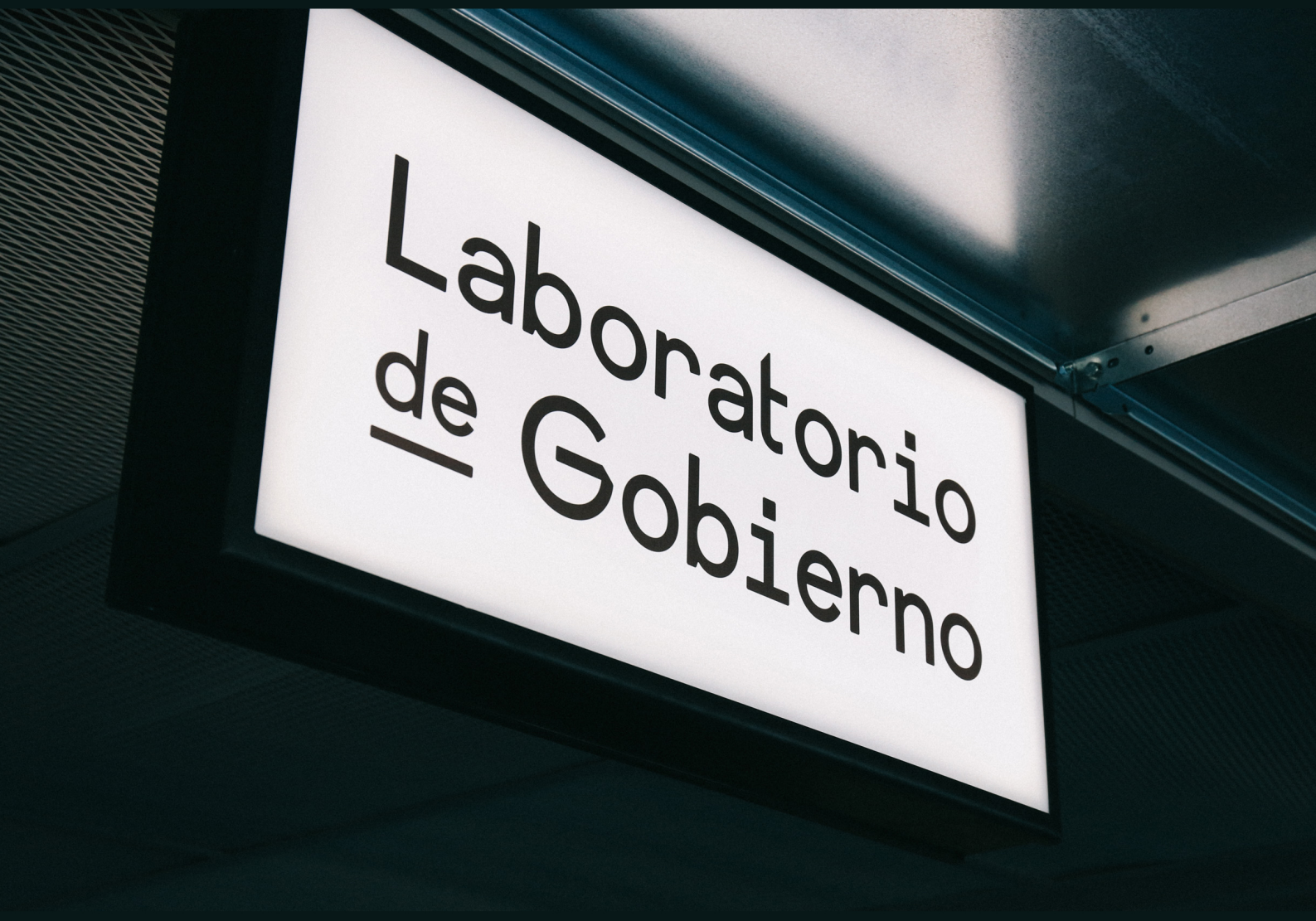

Figure 1.1: LabGob studio entrance (LabGob, 2016)

Chapter 2

Design in Public Sector Innovation Labs

2.1. Introduction to the chapter

This study concerns the relationship between design and Public Sector Innovation (PSI) and more specifically the value that design could bring to PSI-Labs. To explore this issue, in the following sections I will briefly review the practitioners and academic literature on both public management and design research. As mentioned in the introduction, the reader should not expect an extensive review, as theory is used throughout the thesis to explain and support the reflections from practice.

This chapter gives an overview of PSI. It identifies the gaps in the public management literature, and then likewise in the design field.

2.2. What is public sector innovation?

2.2.1. A situated and intentional process of change for creating public value

In the academic and practice literature, public sector innovation (PSI) is an emerging field and, due to the complexity this brings in making innovation in the public sector actionable, there is no agreed definition. Most of the approaches that try to explain the phenomenon (or process) are still diverse and somewhat disparate (De Vries et al., 2016). Various international organisations have been working in recent years to agree on a definition of PSI to enable a common framework of action. This is because the definition of innovation from the Oslo Manual (OECD, 2005) presents some obstacles that make it difficult to transfer the concept to the public sphere, highlighting the fact that the types of innovation indicated therein are eminently linked to markets (Bloch and Bugge, 2013).

From a public management perspective, PSI –as a concrete expression related to the kind of action it involves– can be defined as change. According to Moore et al. (1997) and Osborne and Brown (2005) public sector innovation is a 'significant change in the way a public organisation operates, or happens' when a discontinuity occurs with the predominant paradigm within the organisation. Mul-

gan and Albury (2003), define innovation as ‘new ideas that work’, meaning that 'successful innovation is the creation and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes efficiency, effectiveness or quality' (2003:3).

Mulgan (2007), however, places the focus on the outcome, to differentiate the concept from creativity and entrepreneurship. He defines PSI as ‘new ways of doing things’ but with the accent that these ‘new ideas’ have to work at creating ‘public value’. Under this general definition, he adds: 'the ideas have to be at least in part new (rather than improvements); they have to be taken up (rather than just being good ideas); and they have to be useful' (2007:6).

This definition is particularly interesting because it refers to the ideas of novelty and implementation – present in other kinds of innovation– which are complemented by a public perspective on the concept of usefulness, and here may lie the main difference with private sector innovation. According to Benington (2011), the idea of public value has two dimensions: first, what the public values (what is useful or perceived useful by citizens); and second, what adds value to the public sphere (what is useful for society). He argues that these two aspects are often in tension and sometimes in conflict.

Under this idea, both the process and the outcome of any PSI must consider not only the value for individuals but also the value for the public sphere, this double mandate being the distinguishing factor of its action.

The idea of novelty also has a different perspective in PSI which can be extended from adaptive and incremental actions to the creation of totally new, disruptive and radical actions, considering products, services, processes and organisational and management improvements (Waissbluth et al., 2014). In this sense, PSI not only means something completely new to society but also, that the use or adaptation of practices and technologies are new to a specific organisation. It is not the source of innovation but the context of implementation that determines whether something is innovative.

Ansell and Torfing (2014) meanwhile define innovation as a 'complex, creative and open-ended search process that develops and realises new ideas in ways that lead to step-changes that transform the way we are imagining and doing things'. In addition, they suggest that the introduction to the public sector results from a situated and intentional action to respond to pressures, or exploit new op-

portunities, by embarking on processes of change 'that either disrupt established practices or challenge the common wisdom in a certain field' (2014:5).

2.2.2. The focus on people and collaboration

The EU Commission gives guidance on applying and introducing PSI practices and programmes in different contexts, and at different levels. Here, PSI can refer to the design and implementation of (1) policies and initiatives with an internal focus on enhancing public sector efficiency; (2) policies and initiatives with an external focus on improving services and outcomes for citizens and businesses; and (3) policies and initiatives with a focus on promoting innovation in other sectors. This general definition stresses the idea that there would be some kind of innovation that happens ‘within’ the public sector, which may have both an internal and external focus; and that there might be another kind of innovation 'through' the public sector, which promotes innovation elsewhere (European Commission, 2013).

The literature reviewed reflects on how PSI can be implemented to change the structures of bureaucracy and the practices of public management, as a way to contribute to the first two of those dimensions mentioned above.

In the research reviewed, there is agreement that while innovation has been viewed as the key driver for value creation in the private sector, PSI has been regarded as a contradiction in terms or an oxymoron. Some argue that this is due to the tradition of the public sector, observing that until recently, it was common to think ‘that public bureaucracies were naturally, either for better or worse, resistant and aversive to change and were capable of no creativity’ (Sorensen, 2017:3). Others say that this apparent contradiction is due to the basic logistics of the bureaucratic structure, which are readily assumed to act as a strong barrier for PSI, because of the 'predominance of hierarchical control and red tape, and the relative absence of competition and economic incentives' (Torfing, 2018:1). This rigid structure is also considered to be the reason for the lack of capabilities and skills that public sector organisations have to develop the radical new solutions that are needed (Bason, 2012).

However, Torfing (2018) argues that this contradiction is a myth that has finally been dispelled by the countless examples of PSI in recent years, leading to a ‘widespread recognition that the public sector is far more dynamic and innova-

tive than its reputation' (2018:2). This recognition has allowed PSI to rise in the policy agendas of government, becoming a top priority, due to its success mainly at the service level (Sorensen, 2017).

The question for governments, says Torfing (2018), is about which strategy has the greatest potential for enhancing PSI. In his study, and building on Roberts (2000), he described three strategies that coexist in innovation: (1) hierarchical, where a small group of powerful decision-makers at the top of the organisation define the problem and find an appropriate solution; (2) competitive where, driven by incentives, a large number of relevant stakeholders compete, and the winner gets to define both the problem and its solution; and (3) collaborative, based on the exchange of knowledge, competences and ideas between the actors, stimulating processes of mutual learning so as to improve the understanding of the problem, and extend the range of ideas about how to solve it (Torfing, 2018; Roberts, 2000).

Torfing (2018) argues that collaborative strategies for innovation are well suited for PSI because it focuses exactly on where the main barrier is: bureaucracy and people. This strategy can 'open up public bureaucracies by engaging a diverse group of public and private actors in processes of creative problem solving', exploiting the creative potential of people arising from sustained dialogue.

The main value of this strategy is based on the idea that 'the exchange of different experiences, ideas and opinions tends to disturb the established practices and their cognitive and normative underpinnings, thereby triggering transformative learning processes while simultaneously building joint ownership over new and bold solutions' (Torfing, 2018:4).

This focus on people and how open bureaucratic structures improve the innovation capacity of the sector as a whole, is shared by the OECD (2015). Through its Observatory of Public Sector Innovation, they propose that PSI should take a systemic approach to develop actions to support people in different dimensions, so as to empower them as agents of change (See Table 2.1).

From a practitioners' perspective, there is also an agreement that there is a need to foster changes in public administration (Kohli and Mulgan, 2010). This would come from the interaction of cross-sectorial collaboration aiming to create an 'innovation ecosystem' (Bason, 2010), although mostly as an enabler for the adoption of practices. Most of the practitioners' perspectives reviewed at

the beginning of this project (2014), advocated for the need to develop controlled spaces for creativity and experimentation to produce new ideas, supporting the proliferation of PSI-Labs as a way to make that happen (Vibeke and Bason, 2012; Mulgan, 2014; Puttick et al., 2014).

Table 2.1: OECD Recommendations for PSI (2015)

PSI actions with focus on:
The people involved: empowering and investing in the capacity and capabilities of the public sector workforce as the catalysts for innovation, considering skills, culture and values and leadership.
The information and knowledge they are using: generating and sharing innovative ideas, facilitating the free flow of information, data and knowledge across the pubic sector and use it to learn and respond creatively to new challenges and opportunities.
The ways in which they are working together: working together and in new ways fostering new organisational structures, partnerships and collaboration within government and across sectors to share risks and harness available information and resources for innovation.
The rules and processes which govern their work: innovating within the rules, processes and procedures, ensuring a balance in their capacity to mitigate risks while protecting resources and enabling innovation.

2.2.3. Public sector innovation in practice: design-led PSI-Labs

As mentioned in Chapter 1, one of the strategies for introducing PSI in governments has been to increase the implementation of PSI-Labs. Most of these entities embraced the collaboration strategy mentioned by Torfing (2018). They focus on catalysing and implementing innovation processes through trans-disciplinary approaches and cross-sector collaboration (Puttick et al., 2014), intending to bring an 'experimental approach to building knowledge and creating system change to address the challenges facing governments and citizens' (Siodmok, 2014).

Although PSI-Labs directly follow on from previous public sector innovation discourses, and intentions of organisational change, they appear to be a specific activity of the public sector to create organisations for innovation (Tõnurist et

al., 2017). Their emergence has been associated with different policy agendas, such as ‘open government’ (Acevedo and Dassen, 2016), evidence-based policymaking (Fuller and Lochard, 2016), or digital governance (Margetts and Dunleavy, 2013). However, according to Tõnurist et al (2017), in a study of 35 PSI-Labs created between 1999-2013, the executives in charge argued that they were created 'to enable cross-disciplinary and citizen-driven approaches’.

According to a review of the historical trajectory of PSI-Labs in public management by McGann et al. (2018), the critics of the literature point towards questioning the difference between these new organisations, and previous agents of public sector reform. In the 1990s due to the adoption of private sector management practices and the market competition logic of New Public Management (NPM)[1], public agencies sought to expand a ‘knowledge-for-policy market’, to externalise policy advice, given the idea that public organisations lack the capabilities for addressing complex policy challenges.

However, McGann et al. argue that one important difference is their emphasis on applying ‘design thinking’ approaches to public policymaking. While NPM used an 'entrepreneurial mode of governance that emphasises market competition and corporate management', design thinking aims to shift public managers towards a more 'networked and inclusive model of service provision' (McGann et al., 2018).

2.2.4. Gaps and challenges for design in PSI from a public management perspective

In general, the literature on public management that was reviewed was consistent in recognising that the use of ‘design thinking’, ’design-led approaches’ or ‘service design’ are key characteristics of most of the existing PSI-Labs. It is also recognised that the main contributions lie in introducing a set of practices that are foreign to the mainstream culture of policymaking, and public manage-

[1] New Public Management (NPM) is an approach to policy making and public administration that during the 1980s and 1990s was hegemonic in many western public administrations. The main characteristic was to incorporate business practices in the public sector. According to Hood (1995), this entailed a 'shift in emphasis from policy making to management skills, from a stress on process to a stress on output, from orderly hierarchies to an intendedly more competitive basis for providing public services, from fared to variable pay and from a uniform and inclusive public service to a variant structure with more emphasis on contract provision' (Hood, 1995).

ment, such as creative thinking, people centricity, practical collaboration, citizen engagement and quick experimentation, that together can help enhance public value.

However, in this literature, three gaps in the understanding of the use of design approaches in PSI were identified that constitute challenges for design practice and research:

The challenge of scale and capacity to impact: The findings of the study of Tõnurist et al., (2017), suggest that PSI-Labs are expected to act as change agents within the public sector, and enjoy substantial autonomy in setting their targets and working methods, among which 'user-design-led' methods predominate. However, given their small structure and specialisation in 'quick experimentations that usually lack the capabilities and authority to significantly influence upscaling of the new solutions or processes', they have a limited ability 'to catalyse and push through public-sector-wide changes'. The question then is, how to strengthen authority and capability in PSI-Labs so as to scale and expand the impact within the public system where it lives?

The challenge to reconcile two distinct epistemologies for building valid evidence: McGann et al. (2018) argue that there is limited research that reflects on how the epistemology of practice of design fits 'within the instrumental rationality of positivist framings of “evidence-based” policymaking'. The findings of his study suggest that although 'design thinking problematises scientific approaches to policy design by challenging conventional understandings of expertise and evidence', it is still not able to demonstrate the causality demanded by positivist models (McGann et al., 2018). Since design is neither science nor positivist, the question then is, how can valid and legitimate evidence from design be built, that adds complementary value to the evidence set of policies?

The challenge of integrating design deeper into the policymaking processes: According to Mintrom and Luetjens (2016), although the promise of design thinking is to assist policymakers in creating services that improve user experience, by including citizens in decision-making processes and enhancing public value, it is at risk of not being taken seriously. They argue that this is because the success of the approach is contingent on the diversity of skills and abilities sought within a specific project, and that there are certain instances where traditional approaches to the design and implementation of public policy are necessary and preferable (Mintrom and Luetjens, 2016).

The question then is, how might design processes and capabilities be more integrated into policymaking processes, so as to establish what, when, where and with whom, design can sustain its contribution?

2.3. Public sector innovation: an emerging domain for design

In recent decades, design has successfully expanded into a diverse set of domains. This expanding application into other domains of practice and knowledge– or how 'designers think and work' (Cross, 2011), is known as ‘design thinking’. There are several interpretations and definitions of ‘design thinking’ that are associated with the cognitive style of designers, as a general theory for design disciplines, and as a resource for organisations in need of innovation (Kimbell, 2011). Under this notion, and in the particular context of business, those who need, and are willing, have shifted from a supply-driven, to a demand-driven and market user-centred innovation process. Here, design thinking has been defined as a 'discipline that uses the designer’s sensibility and methods to match people’s needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity' (Brown, 2008).

Design and design thinking were initially applied in the private sector as a tool for business strategy development (Brown, 2008; Verganti, 2009; Martin, 2009), service innovation (Spohrer and Maglio, 2008; Meroni and Sangiorgi, 2011; Kimbell, 2014), and organisational and management innovation (Boland and Collopy, 2004; Gruber and de Leon, 2015). Design is now understood to be a core element and activity, central to industry and services throughout the economy (Hobday et al., 2011), and an activity that contributes to strengthening the innovation capabilities of a company as a new resource, process and mindset (Carlgren et al., 2014).

In the UK, during the period from 2000 to 2007, design contributed 17% to innovation, compared with only 11% for R&D, with innovation accounting for two-thirds of UK private sector labour productivity (Nesta, 2009, in Hobday et al., 2011). Through this valuable contribution to private sector innovation, the concept of design has evolved. Design, first used to develop physical products, is increasingly being applied to complex, intangible issues, such as customer experience

and different kinds of services (Brown and Martin, 2015). As a result, there has been professional consolidation of different sub-disciplines in the design profession such as Transformation Design (Burns et al., 2006), Service Design (Polaine et al., 2013) and others. This is not only with reference to particular domains of practical expertise, but also as an emerging field of knowledge production (Manzini, 1993; Meroni and Sangiorgi, 2011).

At the same time, the successful adoption of design, as a core capability for driving competitiveness and value creation in private organisations, has expanded to other domains of value creation. This includes social innovation (Manzini, 2007), public services (Parker and Heapy, 2006; Burns et al., 2006; Design Council, 2013) and PSI (Ansell and Torfing, 2014; Bason, 2013; Junginger, 2013).

2.3.1. Design in public sector innovation

In a series of UK and European design sector reports about the issue (Burns et al., 2006; Design Council et al., 2013; Design Commission, 2013), and others, an effort has been made to show –through concrete cases and experiences– basically three matters of concern for the design sector: (1) how to build an argument about the value that a design approach can bring to tackle the complex social problems governments are facing; (2) the need for an adoption and diffusion strategy for the use of design in public institutions as a core capability or new resource across the organisation; and (3) the need for an expansion and transformation of the design discipline to tackle such problems and act at a more strategic level.

The main argument for the value of design is that it can change the focus of public services from a supply-oriented logic into a demand-oriented and people-centred perspective. From there, design can change the way services are designed to meet people's needs and reconnect governments with citizens (external focus). It can also change the way services are delivered by the organisation (internal focus) leading to potential gains in productivity and different views on how to manage risk. However, this is not without the emergence of big organisational challenges that, as we review later, are connected with the need for wider government transformation.

A review of the work of the ‘do tank’ RED to tackle social issues using design suggests social problems are becoming more complex over time (Burns et al., 2006). This produces a disconnect between policymakers and the complex reality of ‘real people with real problems’. They suggest that the design process, and the skills inherent in designing, are uniquely placed to bridge this gap and to help solve these complex social issues. Potentially this could lead to changes in the way public services are delivered as a result of five key attributes: (1) 'a mechanism for placing the person, the ‘user’ at the heart of a solution; (2) a means for experts to collaborate equally on complex issues; (3) a rapid, iterative process that can adapt to changing circumstances; and (4) a highly creative approach to problem-solving that leads to practical, everyday solutions. Furthermore, they argue that design can move beyond problem solving to transforming the way in which organisations connect to individuals, consequently, making public services more desirable, aspirational, compelling and delightful (Burns et al., 2006:9).

More than ten years after RED, there is emerging research that shows that design contributes to creating value in the public sector in multiple ways. As a practice it may do so by integrating analysis, solutions, and implementation and looking at the entire system. Furthermore, it may be beneficial to redefine the problem from the ground up: understanding user needs; testing iteratively to prevent expensive and risky early implementation; and engaging teams and departments in collaboration across silos (Design Council, 2015). As an attitude or way of reasoning, it contributes by viewing everything as an experiment, challenging the status quo, valuing the citizen and being concrete (Bason, 2010). Additionally, as a visual and creative method it can open up policymaking to more diverse inputs and forms of expertise in this context (Kimbell, 2015).

As a broader approach for PSI, its value is argued to be in its human centricity and in its capacity for exploring the problem space, generating alternative scenarios and enacting new practices, contributing to what Bason calls ‘human-centred governance’, pointing to a paradigm shift in public administration (Bason, 2017).

Ansell and Torfing (2014) also look for a paradigm shift in public administration as a ‘door’ for design. They suggest that in this new way of organising public administration to tackle contemporary challenges, governing is understood as a complex process, responding to complex problems, and that many actors have

shared influence over public value outcomes. Thus the role of public managers shifts to building collaboration among multiple stakeholders.

In this context, they argue, PSI is a ‘process of collaborative design’, where design thinking can contribute three critical components: firstly, problem and future orientation, aimed ‘to invent new and possible futures in which problems are solved or mitigated through the redesign of practices and artefacts’; secondly, the use of ‘heuristic devices’ such as methods, plans, drawings and prototypes that can make emerging futures concrete; thirdly, the provision of ‘interactive arenas’ or spaces to foster collaboration (Ansell and Torfing, 2014).

It seems that the value of design for public sector innovation goes far beyond a change of orientation from a supply-oriented to a demand-oriented logic and a people-centered perspective. Its contribution lies in its alternative way of understanding and responding to our contemporary ‘wicked’ public problems, serving as an integrative discipline for understanding, communicating and acting (Buchanan, 1992). Bason suggests that design may offer a fundamental reinvention of the art and craft of policymaking for the twenty-first century (Bason, 2014a).

However, as evident in the literature on public management, it seems that the expected value is still only a promise. If we follow the understanding that design is an integrative discipline (Buchanan, 1992), where its action involves 'the entire process across the full range of domains required for any given outcome', and as such, places itself 'at the intersection of several large fields' (Friedman, 2003), it is difficult to assess its particular value, isolated from the context from which inputs derive, and outputs are deployed.

With this understanding, and to fully explore the value of what a discipline can contribute to a multi- and interdisciplinary problem, one should look for an ‘integrative environment’- and PSI-Labs are the space for that. Here, it is important to note that my aim is not to examine how designers are working to solve public problems. On the contrary, my aim is to explore how design is being used inside public institutions, as a new capability that could contribute to the way that they work.

2.3.2. Gaps and challenges for design in PSI from a design perspective

Challenges for design in the public management literature include a lack of integration in processes and power structures, and suspicions as to the validity of design knowledge as a form of evidence. Following on from this, some of these challenges are discussed below from a design perspective.

The first issue for design in PSI refers to the position of design in the policy cycle. Junginger (2013, 2017) argues that design can help transform the ways policies are being developed, implemented and applied in stages of the policy design process. However, she argues that design is still considered to be a fragment of the policy implementation stage when the policy demands the development of specific services. Therefore, design becomes an isolated, 'in-itself-closed part of problem solving' (2017:29). She asserts then that policies in their design and implementation, are both a design problem, and a design activity, representing 'fundamental and connected design problems'- and not 'disconnected design activities' (2013:22).

A strategy to deal with this disconnection could be to focus on service innovation, since services bring together different elements of the policy cycle (intent, making and implementation). The integration of policymaking with policy implementation 'allows for services that realise the policy intent because they are meaningful and usable to the people they intend to reach' (2017:42).

Similarly, if the aim is 'organisational transformation', it is proposed that reflective inquiries into organisational systems are required for design services that sustain lasting transformations (Junginger and Sangiorgi, 2009). The question here is two-sided. First, how can design be introduced into the organisational realm through a reflective inquiry into their systems? Secondly, how from here, can the position of design across the policy cycle be expanded?

The second issue for design in PSI refers to the disconnection of design within the politico-organisational context. According to Hyysalo and Hyysalo (2018), when analysing the practices of collaborative design in public sector organisations, the mundane practicalities, strategising work, and the involvement of wider organisational staff permeated a mist of collaborative design activities conditioning its success. They argue that although design can play a significant role in

collaborative innovation, there is a disconnect in how to turn the politico-organisational aspect of effective collaborative design in the public sector from an external factor into an internal design issue (Hyysalo and Hyysalo, 2018), so as to increase its impact and improve practice.

The question here is, how can politico-organisational problems in a public sector context be turned into design problems?

The third issue for design in PSI refers to integration with power structures. Bailey and Lloyd (2016), analysing design practices in the public sector, argue that 'designing is … unavoidably political', and that the introduction of design practices involves 'fundamentally challenging some existing notions of intelligence and knowledge'. However, they suggest design has been seen as 'neutral' or as a value-free set of practices- and this needs to change. This does not appear to be connected with the discourses on participatory design (Björgvinsson, 2010), or design and democracy (Bonsiepe, 2006) that look at the role and values of design in other realms.

Here the question is, how can the political dimension of the exercise of design, in a politico-organisational context, such as the public sector, be highlighted once more?

2.4. Summary of gaps

Previous research has shown that design can be considered an innovation capability that can be used in PSI to support the creation of public value at different levels (Ansell and Turfing, 2014; Junginger, 2017; Bason, 2017; Kimbell, 2015; Kimbell and Bailey, 2017). However, both fields of knowledge concur that the impact of design in PSI is limited. This limitation is due to the lack of integration of design with policy processes (Mintrom and Luetjens 2016; Junginger 2013, 2017) and power structures (Tõnurist et al., 2017) and the weak legitimacy that design knowledge has as a source of policy evidence (Bailey and Lloyd, 2016; McGann et al., 2018). More importantly, the main barrier is the incapacity of design to turn the public sector's politico-organisational factors into matters of design (Hyysalo and Hyysalo, 2018). Moreover, the gaps in the literature appear to reflect the lack experience of integration between design and public management approaches to innovation in the context of PSI-Labs.

The introduction of design-led PSI-Labs within large public sector organisational systems is considered to be an opportunity for the integration of these two worlds. However, the effectiveness and impact of the use of design in these contexts have not yet been adequately researched.

Chapter 3

Methodology: Action Research through Design

3.1. Introduction to the chapter

This chapter presents a detailed explanation of the theoretical frameworks, methodology, structure and key considerations of the research design of the project. It is divided into three sections:

The first examines the Design Research approach. Starting from its theoretical foundations, my view concurs with those who consider design as a 'coherent discipline of study in its own right, based on the view that design has its own things to know and its own ways of knowing them' (Cross, 2007:3)[1]. Different epistemologies of research within the design discipline are examined, before eventually selecting the constructionist approach of 'reflective practice' (Schon, 1983; Cross, 2001).

In the second section, the two methodological frameworks used for this project are discussed, namely 'research through design' (Frayling, 1993; Findeli et al., 2008; Jonas, 2012) and 'action research', giving a theoretical overview of each one and establishing the key elements to be used for the research design of the project, which is based on what I call 'action research through design'.

In the third section, I explain and describe the research design of the project. Here the general structure of the research project is outlined, together with the key principles and considerations, the rationale for selecting a particular set of research methods for each one of the components, and the ethical considerations involved. The section finishes with an assessment of the validity and limitations of the research design.

[1] Also in Archer (1979b), Glanville (1999), Cross (2001)

3.2. Design research approach

The research approach used for this PhD project by practice lies in the design research tradition. In the context of the broader research community, design research is understood as a 'multitude of different kinds of research activity conducted by those concerned with, or engaged in, the field of design' (Stewart, 2014:245). However in this study, I will refer specifically to design research as the field of knowledge production that recognises its origins during the 1960s in the engineering and design schools of the UK, Europe and North America[2] and which has been discussed in conferences such as those organised by the Design Research Society or the Board of International Research in Design; and journals such as Design Studies, Design Issues, the Design Journal, the Journal of Design Research and CoDesign among many others.

In the design field, there have been several attempts to define the relationship between design and research, such as by Frayling (1993), Glanville (1999), Cross (2001), Friedman (2003), Bayazit (2004), Jonas (2012), Rodgers and Yee (2015) and many others. However, it is possible to locate one of the foundational points of design research definitions in the work of Bruce Archer, who first as a practitioner in industry, and then as an academic of the Royal College of Art (RCA) for 27 years, was 'a driving force behind the attempt in the 1960s to be rigorous and, in particular, systematic about the nature and practice of designing' (Boyd Davis and Gristwood, 2016:1). In that period, Archer sought to establish a 'science of design', for which design research was essential, and 'understood not only as the study of design's methods, but also of its ontology as a discipline and an activity' (2016:1).

Examining the nature of design research in a broad and perhaps 'inclusive'[3] way, Archer (1995) starts by defining research as a 'systematic enquiry whose goal is communicable knowledge'. It is:

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[2] Cross (2007) regards the 'Conference on Design Methods' held in London in 1962 as the event which marked the launch of design methodology as a subject or field of enquiry, and sees it as the point of departure of Design Research as a research approach in its own right. Most of the literature that was reviewed for this section agrees with this foundational moment.

[3] 'There is more than one way of defining research, and there are several traditions as to how research should be carried out. I will try to describe the nature of research in terms that would be common to most of them.' (Archer, 1995:6).

- 'systematic because it is pursued according to some plan;
- an enquiry because it seeks to find answers to questions;
- goal-directed because the objects of the enquiry are posed by the task description;
- knowledge-directed because the findings of the enquiry must go beyond providing mere information;
- and communicable because the findings must be intelligible to, and located within some framework of understanding for, an appropriate audience' (Archer, 1995:6).

In this general definition – accepted by many – research is a systematic process whose expected outcome is knowledge that can be understood by others. As explained in section 3.4, this PhD project incorporates all the elements of the definition. However, at this stage, there is still a need to clarify the specific characteristics of this systematic process of communicable knowledge production when applied in the context of the design field.

3.2.1. Design activity

The foundations of design, as a particular field of human activity, come from the very early stages of civilisation, with roots in architecture in Roman times. Vitruvius (80-15 BCE) wrote what is considered the first Western book on design. According to Glanville (2014), the *Ten Books on Architecture,* published around 15 BCE, was, in effect, a design manual for making a diverse set of civil works (such as water mills, clocks, town planning, temples, civic buildings, aqueducts and others), and 'is still the best definition of architecture – as constituted of three equal parts: well-made, functional and delightful'. Key elements of the nature of a 'designed result': it is based on a solid understanding and application of a certain craft (*firmitas*); it is functional for its purpose (*utilitas*); and it produces delight for the inhabitant (*venustas*).[4] However, says Glanville, design, as a subject in its own right, appears during the Industrial Revolution, where 'the ability to pro-

[4] An interesting analogy of these three dimensions applied to 'better' public services is developed by Kimbell (2013): 'Well-designed public services should be pleasing and easy to access and use from the end user's perspective (venustas). They should use resources effectively and efficiently, for example, reducing public sector investment (firmitas). And they should achieve policy goals resulting in the impacts that were the point of creating the solution in the first place (utilitas).'

duce, by machine, multiples of large and expensive objects greatly outside human skill and scale meant there was a need to be able to construct these objects in the mind, before committing machines (and their operators) to production' (Glanville, 2014:2).

Defining design has always been a difficult task. It has changed over time and we can find different kinds of definitions depending on the lens that is used for the task. Olson et al., who examine more than 50 definitions of the word 'design' were able to classify three families of definitions: a) the ones describing a process –that is, 'the process used to shape the world and everything in it'; b) others describing the tangible outcomes of a process –namely 'the user-centred aspect of an artefact'; and c) those describing a functional grouping definition – that is, 'a family of professions that share common craft traditions' (Olson et al., 1998:55).

It is common to say that the definition of the concept is ambiguous because it can refer – amongst other things– to an activity, in its verb form, and to things, in its noun form (Heskett, 2005:3). However, this ambiguity is not just because it is both a noun and a verb, but because 'it could refer to a process, an object or a function' (Michlewski, 2015:5).

In its verb form, Friedman observes that most definitions of design share three attributes. Firstly, the word 'design' refers to a process; but secondly, it refers to a process that is goal-oriented and thirdly, it has a clear function which is to solve problems, meet needs, improve situations, or create something new or useful (Friedman, 2003). He acknowledges that his statement is influenced by the foundational definition coined in the late 1960s by Herbert Simon (1969), where design is understood basically as a process for producing change: 'everyone designs who devises courses of action aimed at changing existing situations into preferred ones' (Simon, 1996:111).

But if the act of designing is mainly a goal-oriented practice with the key function of producing change or creating something useful, how can we produce knowledge of it?

3.2.2. Design as a field of knowledge production

The question of whether design is part of any traditional field of knowledge production or whether it has its own field, has been at the core of the design

research debate since the very beginning of the concept. Archer himself was one of the first to introduce design as a discipline in the very first issue of *Design Studies* – later to become one of the most influential academic journals in the field –, arguing that design was a 'broad area of man's concerns, comparable with Science and Humanities'. He defines 'Design with a capital D as the collected experience of the material culture, and the collected body of experience, skill and understanding embodied in the arts of planning, inventing, making and doing' (1979a:20[5]).

From this very broad definition of Design as a distinctive 'matter of concern', having in mind his general definition of design research as a systematic enquiry whose goal is knowledge into the nature of design activity, and not feeling comfortable with any of his own definitions,[6] he proposed a pragmatic approach[7] to finding an answer to what design research is, namely 'to try to discover what design researchers actually do' (Archer, 1981:30).

Archer realised that 'Design, like Science, is not so much a discipline as a range of disciplines united by a common intellectual approach, a common language system and a common procedure', and that just as 'Science can extend to any phenomenon to which we wish to pay scientific attention, Design can extend to any phenomenon to which we wish to pay designerly attention'. However, he argues, 'Design Research can, and does, employ the methods of scientific research and scholarly enquiry in its pursuits, as well as, more rarely, the methods of designerly enquiry itself' (1981:32).

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[5] Also supported by Cross (1982).

[6] Exploring the 'Nature of Design Research', Archer (1981) tries to define it in three different ways before proposing a pragmatic approach to the task: 'Design Research is systematic enquiry whose goal is knowledge of, or in, the area of human experience, skill and understanding that reflects man`s concern with the enhancement of order, utility value and meaning in his habitat'. Alternatively, it might become, 'Design Research is systematic enquiry whose goal is knowledge of, or in, the embodiment of configuration, composition, structure, purpose, value and meaning in man-made things and systems'. The former seems to me to be impossibly broad. Who needs Arts, Philosophy, Science and Letters, when we have Design Research, in this sense? The latter definition seems to be a better description of the matter where design researchers are actually investigating, but I am still uncomfortable with the vagueness of its focus. On the other hand, I felt that an alternative definition, 'Design Research is systematic enquiry into the nature of design activity', which is where Design Research began, is too narrow'.

[7] Jonas (2012) describes this as a 'Wittgensteinian' stance.

This seminal idea exhibits a duality of design in the context of systematic knowledge production: design as an object that can be studied under different knowledge traditions; and design as a distinctive form of knowledge production or, in the words of Nigel Cross, 'a way of knowing' (1982).

3.2.3. Design as a discipline

Following Cross (1993, 2001, 2007, 2018), we can see that over the 50 years of design research, the duality of design as both an object of study and a distinctive form of knowledge production has been discussed from different perspectives to understand the relationship between design and science, the latter having the distinction of being *the* field of rigorous knowledge production. In this effort, Cross distinguished between three science-design relationships: scientific design, design science and a science of design, then leading to the emergence of design as a discipline with its own epistemology.

Distinguishing and describing the relationship between design and science, Cross says that 'these concerns emerged strongly at two important periods in the modern history of design: in the 1920s, with a search for scientific design products, and in the 1960s, with a concern for scientific design process; and that following the 40-year cycle in these concerns, we might expect to see the re-emergence of design-science concerns in the 2000s' (2001:49).

Probably, Cross's idea was anticipating what we have seen in the last 20 years with the emergence of design thinking as a concept that encapsulates the promise of replicability and its commodification as an innovation resource that can be applied to anything.

Cross argues that the scientific design of the first half of the 20th century refers to modern and industrialised design – as distinct from pre-industrial and craft-oriented design. It is based on scientific knowledge but still uses a mix of both intuitive and non-intuitive design methods (2001). However, later, when design research began in the 1960s, Ranulph Glanville (1999) explains that the eventual success of science as the main source of knowledge was assumed and design was not seen as a discipline in its own right. 'Design was deficient: effectively, a defective science. It was flawed. But these flaws could be fixed by the proper application of scientific methods'. Proper scientific research, he continues, would yield the secrets of the designer, allowing us to find the right answers to

problems. ‘Design, therefore, needed research. Since research should be scientific, design research should be scientific. And then design, itself, would be scientific’ (Glanville, 1999:80).

This was the dominant approach during the 1960s and early 1970s. According to Cross (2001), the endeavour at the time was to develop a ‘design science’ to recognise laws of design and its activities; developing rules, and even try to formulate ‘the’ design method—a coherent, rationalised method, as ‘the scientific method’ was supposed to be. ‘Design Science referred to an explicitly organised, rational, and wholly systematic approach to design; not just the utilisation of scientific knowledge of artefacts, but design in some sense as a scientific activity itself’ (2001:51). This approach was highly controversial and challenged by many designers and theories, rejecting what was later called ‘the first-generation of design methods’. Cross argues that this rejection was due both to the social/cultural climate of the late-1960s with a new liberal humanism, and also to the lack of success in the application of ‘scientific’ methods to design (Cross, 2007).

According to Bayazit (2004), this lack of success was because the first-generation of design methods was simplistic and unable to meet the requirements of complex, real-world problems which, according to Rittel and Webber (1973) could be characterised as ‘wicked’, and fundamentally unamenable to the techniques of science and engineering, which dealt with ‘tame’ problems.

According to Cross, this initial failure to create a design science, gave way to a more open distinction between both fields. While designing itself is considered to be a non-scientific activity, ‘the study of designing may be a scientific activity; that is, design as an activity may be the subject of scientific investigation’ (Grant, 1979, in Cross, 2001:4). This is what is known as the ‘Science of Design’. In his view, the science of design is the study of design and is similar to what he previously defined as ‘design methodology’; namely ‘the study of the principles, practices, and procedures of design’ which ‘refers to that body of work which attempts to improve our understanding of design through “scientific” (that is, systematic, reliable) methods of investigation’. Cross continues his argument by stating that one of the key authors of this line of thought was Herbert Simon, who proposed that ‘the science of design’ could form a fundamental, common ground of intellectual endeavour and communication across the arts, sciences, and technology, suggesting that the study of design could be interdisciplinary, accessible

to all those involved in the creative activity of making the artificial world (Simon, 1969, in Cross, 2001).

However, he continues, although this idea of interdisciplinarity is a key element for building a field of design knowledge, Schön (1983) argues that the problem with this positivistic view of 'science of design' is that it is 'based on approaches to solving well-formed problems, whereas professional practice throughout design has to face and deal with "messy, problematic situations"'. As elaborated later, Cross builds on the proposition of Schön, looking instead 'for an epistemology of practice implicit in the artistic, intuitive processes which some practitioners do bring to situations of uncertainty, instability, uniqueness, and value conflict, and which he characterised as reflective practice' (Cross, 2001:54).

Thus Cross proposes design as a discipline, which means, design studied on its own terms, and within its own rigorous culture. It can mean a science of design based on the reflective practice of design: design as a discipline, but not design as a science. The underlying axiom of this discipline is that there are forms of knowledge specific to the awareness and ability of a designer, independent of the different professional domains of design practice. Design knowledge is of and about the artificial world. How to contribute to the creation and maintenance of that world, is inherent in the activity of designing and gained through engaging in and reflecting on that activity. Hence, argues Cross, 'just as the other intellectual cultures in the sciences and the arts concentrate on the underlying forms of knowledge peculiar to the scientist or the artist, we must concentrate on the "designerly" ways of knowing, thinking, and acting' (Cross, 2001:55).

3.2.4. Epistemological positions for design knowledge

In the previous section, we have established that this research project will be based on considering design as a distinctive discipline with its own ways of creating knowledge through a process of reflective practice. In this section, this theoretical position is considered in the context of the different traditions of design research. The aim is to understand the nature of the knowledge that the project can produce and the contribution of this work.

In order to make meaningful distinctions between the different design research theoretical positions and make their respective epistemological assump-

tions explicit, Feast and Melles (2010) use Michael Crotty's (1998) knowledge framework as a general structure. As depicted in Table 3.1, Crotty frames the research process as comprising four basic elements organised in hierarchy: epistemology, theoretical perspective, methodology and methods.

Table 3.1: Crotty's elements of the research design (Crotty, 1998).

Epistemology: the theory of knowledge that defines what kind of knowledge is possible and legitimate.
Theoretical perspective: the philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria.
Methodology: the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes.
Methods: the techniques or procedures used to gather and analyse data related to some research question or hypothesis.

The hierarchical nature of the structure determines that the assumptions embedded in the primary element inform each subsequent element. Epistemological considerations underlie assumptions about how to conduct research, the appropriateness of methodological choices and the kind of knowledge sought through investigation (Coghlan, 2014). Hence, it is important to have some clarity about the epistemological stance underpinning the theoretical position chosen for this project. This in turn determines the methodology and methods adopted.

Using this framework –and while recognising that the exercise is simplification that necessarily hides much of the complexity of the issue –, Feast and Melles (2010) argue that there are three main positions regarding what is design knowledge and where it comes from: direct making, reflective practice and rational problem-solving, which broadly correspond with subjectivist, constructionist and objectivist epistemologies.

These positions are summarised in Table 3.2[8].

[8] The descriptions of each epistemological stance, correspond to a summary by Coghlan (2014) of Crotty's framework. The descriptions of the design research positions correspond to Feast and Melles (2010).

Table 3.2: Theoretical positions of Design research related to Crotty's epistemological stances (Feast and Melles, 2010).

Epistemological stance	*Theoretical positions of design research*
Objectivism 'Objectivism contends that the objects or phenomena under investigation have existence irrespective of human input'.	**Design research as 'rational problem solving'** The objectivist position emphasises the logical construction of theories based on discrete empirical facts (Friedman, 2003; Owen, 1998; Biggs and Büchler, 2007).
Constructionism 'Constructionists argue that truth is instead constructed through engagement with an object of investigation. This position does not necessarily deny the existence of objects, but instead, it contends that meaning is emergent via interaction'.	**Design research as 'reflective practice'** The constructionist position holds that designing in itself is not research unless it is also accompanied by reflection upon the process of making (Cross, 2001; Dorst, 2008).
Subjectivism 'Subjectivism contends that truth is subjective as meaning is completely imposed by human subjects. This position reflects the most drastic departure from realism by contending that the meaning of a phenomenon is a sole act of human creation'.	**Design research as 'direct making'** The subjectivist position is shown for example by those within the community of art and design researchers who argue that all practice is research and that a thesis (written text) is unnecessary as knowledge produced through the research may be read in the artifact (Frayling, 1993; Candlin, 2000; Prentice, 2000).

Following this framework, the constructionist stance is adopted which, as previously discussed, supports the idea of an 'epistemology of practice' (Schön, 1983; Cross, 2011) based on a 'reflective practice' or 'reflection-in-action'. This, in turn, is based on the interconnection of thinking and action. According to Schön (1983; 1987), reflection-in-action refers to allowing practitioners to change the way they go about solving problems and 'reshape what we are doing while we are doing it' (Schön, 1987:26).

As discussed earlier, this theoretical position gives validity to the production of knowledge in the context of design practice, allowing many researchers in the design world to 'realise that design practice does indeed have its own strong

and appropriate intellectual culture, acceptable and defensible in the world on its own terms' (Cross, 2001:55).

3.2.5. Selection of the research design general frameworks

According to Creswell, 'research designs are plans and procedures for research that span the decisions from the broad worldview and theoretical assumptions to detailed methods of data collection and analysis' (2009:3). The overall decision involves which design should be used to study a topic, based on the nature of the research problem, the researchers personal experience and the audience for the study.

As discussed earlier, the first decisions in this design were: to adopt a constructionist epistemology – where knowledge is constructed through engagement with an object of investigation and meaning is emergent via interaction with that object (Coghlan, 2014); and to take 'reflective practice' as the guiding theoretical framework to interconnect thinking and action throughout the process of the project.

'Reflective practice' involves two methodological approaches that will be used in this PhD project: 'research through design' and 'action research'. Following Creswell's (2009) argument outlined above, the rationale for selecting these approaches is based on two main elements described bellow.

▸ The nature of the research problem

In the context of the broad research community –beyond the design field– the problem of designing the Laboratory had the nature of an action research problem, in the sense that it was an action that organisational members took to address a particularly problematic situation (Herr and Anderson, 2015). As reviewed in Chapter 4, in this case a policy team needed to implement a policy mandate that at the same time required a more 'participatory approach' to public sector innovation.

This was indeed a problematic situation in practice: both the process (how to design the service) and the outcome of that process (how the implemented service would fulfil the mandate) were not determined at the beginning, and

the results would be shaped by a process of ongoing practice. Given that the purpose of action research is to solve a practical problem and, by the engagement of researchers and participants, to improve practice (Merriam and Tisdell, 2016), this was selected as the most suitable approach to take.

- **The personal experience of the researcher**

This author's background is as a Chilean design practitioner, previously involved as a strategic designer of the presidential campaign of the newly-elected government of the time. The policy decision to create a Government Laboratory represented a great opportunity for aligning my research interest with my experience in practising design in this field.

3.3. Methodology

3.3.1. Research through design

Having established the epistemological position of this research, there is still a need to consider the methodology in the context of the discipline of design. According to Findeli, 'the methodology of design research is the field of inquiry concerned with the methods susceptible to be used to conduct research projects in the field or discipline of design' (2008:68). He adds, 'the construction of a consistent and coherent methodology of design research has been an ongoing concern of our research community' (p.69).

This concern is relevant for this PhD project since, although we have defined reflective practice as the guiding theoretical framework to reconcile research and practice, the practice of this project is design and it is in the context of design knowledge production.

As we have seen before, Findeli (2008) argues that although the epistemological issue in design research has been tackled, it is far from being settled at the present time. He suggested that this is because there is a 'persistent confusion between the targets of the research and the design projects and that the central question as to what could or should be the target of design research is still on the agenda'. He unpacks this question in the following sub-questions:

- What exactly are the objects of design considered as a scientific, academic discipline?
- What are the phenomena of the world we are interested in observing and understanding, that are not already the "property" of other disciplines?
- What do we intend to say about these phenomena that is not known yet and that other disciplines cannot know or at least that design claims to know better?' (Findeli, 2008:69).

In an effort to tackle these fundamental questions, Findeli builds on the definition of Archer (1995) and defines Design Research as 'a systematic search for and acquisition of knowledge related to general human ecology considered from a designerly way of thinking, i.e., project oriented perspective' (2010:294). In this definition, Findeli describes the scope or field of design research as 'general human ecology' understood as an extension of the concept of habitability that, defined in systemic terms, refers to the interface and interactions between an individual or collective inhabitants of the world and the world in which we live, widening the scope of design research to almost any field (2010).

However, Findeli follows Archer and Cross in saying that how designers 'know the world' is distinct from other disciplines. Building on Cross (2001), he defines the design epistemological stance as 'designerly' or projective, understanding that the aim of designers is 'to modify human-environment interactions, to transform them into preferred ones' implying that while science-based research considers the world as an object of enquiry, design researchers consider it as a project (Findeli, 2010:293).

Discussing the different forms of research within the `art and design' field, Frayling (1993:4) distinguishes between research into, for, and through art and design[9]. Findeli (2008) uses this categorisation as a starting point to develop a methodological critique of what in his view are the two most current methods practised in the field: research about (into) and research for design.

He argues that even when design research is highly relevant for design practice, it is not theoretically rigorous because it lacks research standards: 'It

[9] 'Although it is reported that Archer first coined his phrase "research about design [and designing], research through design [and designing] and research for the purposes of design [and designing]" in the late 1970s during his post at the Royal College of Art, it was Frayling who made the distinction popular' (Jonas, 2012).

usually draws on already available knowledge; when new knowledge is produced, it is usually not done with the rigour expected by research standards; and it is mostly tacit and not meant to be published or discussed by the design research community' (Findeli, 2008).

On the contrary, research into design, is normally performed by various disciplines, other than design, according to scientific standards and published. However, the problem is its relative lack of relevance for design practice, design education or design research, mainly because design is considered an object of study that can be researched by scientists whose main goal is to contribute to the advancement of knowledge of their own discipline and not particularly design (Findeli, 2008); so even though it is strong in theory, it has 'little or no contribution to a theory of design' (Findeli, 1998:108).

Through his critique, he proposes then that 'Research Through Design' is the methodological approach that can most fulfil the criteria of rigour (stand up to research standards) and relevance (contribute to the improvement of design practice) within the design discipline (Findeli, 2008), because through reconciling theory and practice, 'such research helps build a genuine theory of design by adopting an epistemological posture more consonant with what is specific to design: the Project' (Findeli, 1998).

However, Findeli notes that proper research through design has to include research about design that is more relevant for design and research for design that can produce original knowledge with rigorous standards. The aim throughout is to conduct research that can fulfil 'the key necessary conditions for a research that does justice to the specificities of the field or discipline of design' (2008: 72).

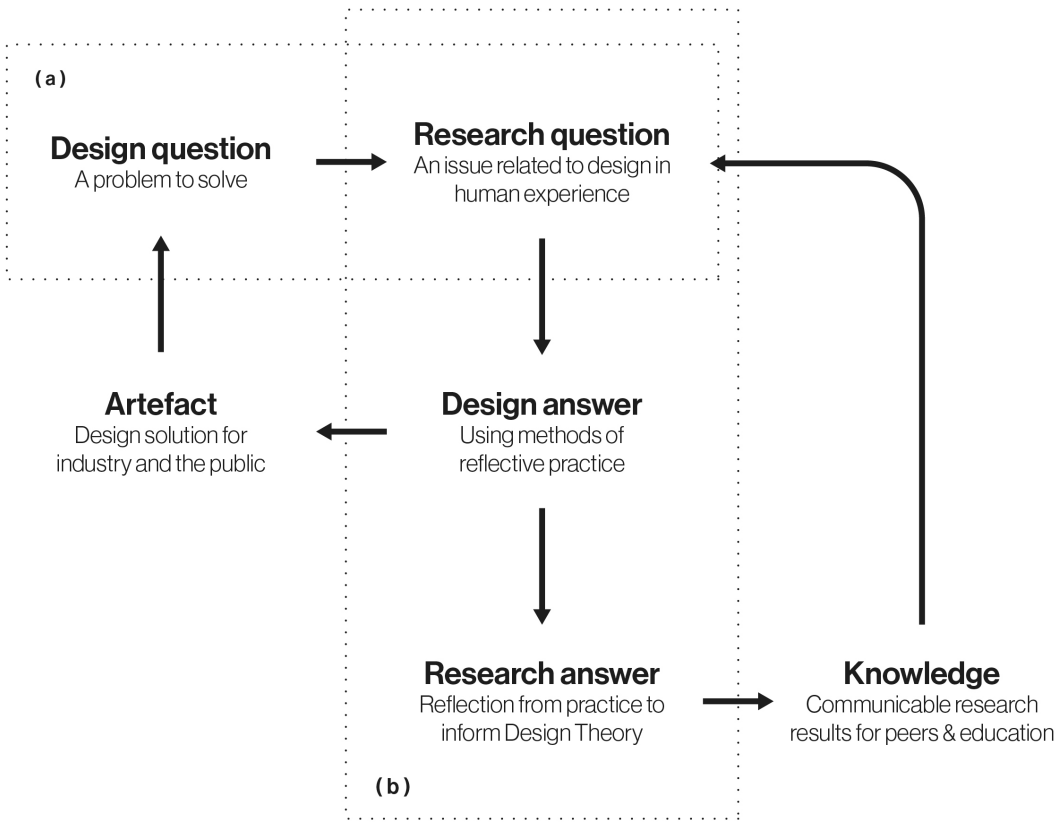
He proposes that, in the context of this more inclusive definition of research through design, a design research project should aim to produce conclusions that would be assessed in three areas: 'The first is common to any research project in any discipline: an original and significant contribution to knowledge, in our case to design knowledge. The second is an expected improvement of design practice and consequently of user satisfaction. The third: some fruitful consequences for design education' (Findeli, 2008:72).

Design and research questions

Following this line of thought, it becomes clear that a 'research through design' project has a double purpose: to deal with a design problem through a design solution, and to deal with a research question through the production of new knowledge.

As can be seen in Figure 3.1 (a), Findeli (2010) suggests that 'research through design' questions and design questions are interdependent and interconnected. For conducting a design research project using this framework, he proposes a process where the researcher tackles their subject matter in the form of a design question (a problem to solve) and then transforms this question into a research question. He argues that an ideal research question, according to this logic, would uncover and emphasise the complexity of the human experience that is at stake in a design question, considering each experience as the consequence of an interaction between people and their context (Findeli, 2010).

Figure 3.1: Operational and methodological model of a PhD by practice (Findeli, 2010)



With this question in mind, the researcher will go through a process of reflective practice where a ‘designerly way of thinking will be central’, to produce both a design answer –that will address the design question– and a research answer that can inform design theory (Findeli, 2010).

After experimenting with this process between design and research problems, the research can be structured as seen in Figure 3.1 (b). In the diagram we can see that embedded inside the research process is a design process that serves as a tool for creating knowledge and that the whole process produces two types of outcome: a design solution or artefact to be delivered to industry or the public in response to the original problem; and a communicable research result of new knowledge to be delivered to fellow designers and peers and which can influence new research questions.

This model is used in Chapter 4 to unpack the research problem in practice at the beginning of the process.

Sources of design knowledge

To establish clear research questions, we need to define the objects to be studied. Later, when performing the reflective part of practice, it is also important to understand the objects of study upon which we are reflecting. The question is to understand where design knowledge is coming from.

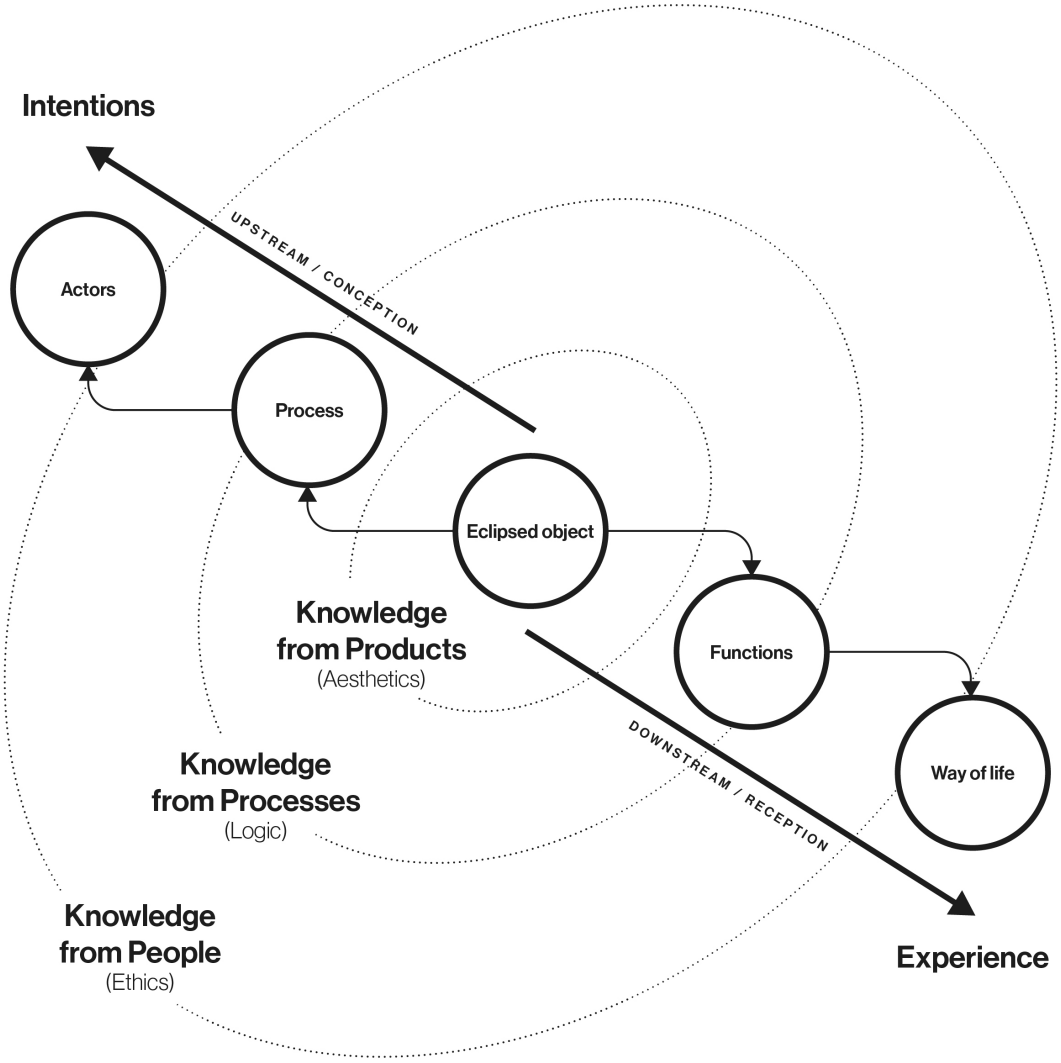
Cross (1999) argues that design knowledge could come from three different sources: people, processes and products. Design knowledge from people is about researching the human ability to design, meaning how people design or learn to design. Processes concern understanding the tactics and strategies of designing, design methodologies as the study of the processes of design, and the development and application of techniques that aid the designer. In terms of products, it is about inquiring into the forms, materials and finishes that embody design attributes, and the knowledge implicit within the object itself.

Despite the clarity and relevance of the approach, this is contested and expanded by Findeli and Bousbaci (2005) in their ‘Bremen Model for Research Design Theory’, where they argue that the Cross approach to design knowledge is focused only on the ‘conception' part of the process but leaves out the ‘reception’ part of it (Findeli, 2010).

The Bremen model challenges Cross's idea and seeks to explain firstly how interest in the object of research (or design result) has been 'eclipsed' by different models at different times. He argues that this 'eclipse of the object' first occurs in the space upstream of the design project: from an object-centred project (aesthetics) to a process-centred project (logic), and then to an actor-centred project (ethic) –following Cross's definition.

On the other side, the delivery of the design result has also shifted to the space downstream from the formal properties of the object (aesthetics), to the functions (logic), and finally to the experience of users or, more generally, their way of life (ethics) (Findeli and Bousbaci, 2005).

Figure 3.2: Author's adaptation of the Bremen Model (Findeli and Bousbaci, 2005) incorporating the sources of design knowledge (Cross, 2007).



What is interesting about this model is that it includes the different dimensions of the design project, aiming to serve as a general framework of analysis, focusing both in its 'conception' and 'reception' spaces, and seeking in the upstream to understand the 'intentions' and in the downstream the 'experience'. The latter concerns the description and understanding of the users' act or more precisely the relationship between people and their environment (in all its dimensions: physical, psychical, spiritual), whereas the former focuses on the description and understanding of the act of improving or maintaining these relationships, that is, the very act of designing (Findeli, 2010).

As can be seen in Figure 3.2, each of the categories defined by Findeli, corresponds to the ones proposed by Cross. In this case, design knowledge from people is not just about their ability to design, but also the experience of interaction, use and habitability that a design result can support. Design knowledge from processes will not just come from design methods but also from understanding the logic behind the functions of the design result.

This framework was particularly useful when reflecting on the Laboratory as a service, in terms of the materiality of the design result diluted[10] by the materialities of organisations (in the upstream) and experiences (in the downstream) (see section 3.4.5).

3.3.2. Strengthening design research with action research

Action research was described by Archer as the main methodology for design research, where the research activity is carried out through the medium of practitioner activity. It is defined as 'systematic enquiry conducted through the medium of practical action; calculated to devise or test new, or newly imported, information, ideas, forms or procedures and generate communicable knowledge' (1995:11). Archer argues that although this research is conducted by

[10] Kimbell (2013) argues that although most of the last two decades of academic design studies are concerned with experiences and intangible services, rather than products, interest in objects has recently returned, problematising the notion that design is human-centered.

practice, all the normal rules governing research apply to it[11]. He argues that 'despite its being highly situation-specific,[12] it can advance practice and can provide material for the conduct of later, more generalisable studies, provided the research is methodologically sound, the qualifications are clearly stated and the record is complete' (1995:11).

This is the main reason to complement the 'research through design' approach with an action research methodology. According to Jonas (2012), the epistemological status of 'research through design' by itself 'is still weak but a theory like Action Research[13] can contribute to strengthen the position, since it is aiming at the modification of reality, while observing and processing theory modifications' (2012:31).

Action research as a reflective practice

The idea of 'reflective practice' as a theoretical framework that supports the production of knowledge from practice, is at the base of 'action research methodology '. According to Merriam and Tisdell, 'action research is a form of practitioner research. It not only seeks to understand how participants make meaning or interpret a particular phenomenon or problem in their workplace, community, or practice, but it also usually seeks to engage participants at some level in the process in order to solve a practical problem' (2016:49).

Originally developed in psychology by Kurt Lewin in the 1940s, it has more recently been defined as a reflective process of enquiry 'that is done by or with insiders to an organisation or community' and that it is 'deliberately and systematically undertaken and requires that some form of evidence be presented to

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[11] 'It must be knowledge directed, it must be calculated to produce new knowledge, or be intended to test, and maybe refute, existing knowledge. It must be systematically conducted. The chief questions to be addressed by the research must be unambiguously expressed. The methods of enquiry and analysis must be transparent. The data employed, and the observations made, must be fully and honestly recorded, and must be published or otherwise exposed to critical examination by others' (Archer, 1995:11).

[12] Action research is almost always 'situation-specific', meaning that since it is 'pursued through action in and on the real world, in all its complexity, its findings only reliably apply to the place, time, persons and circumstances in which that action took place. It is thus difficult and dangerous to generalise from action research findings' (Archer, 1995:11).

[13] "Archer (1995:11) adheres to the distinction between research about / for / through design and puts the latter on a level with action research arguing that 'it is when research activity is carried out through the medium of practitioner activity that the case becomes interesting' (Jonas, 2012).

support assertions. Action research is oriented to some action or cycle of actions that organisational or community members have taken, are taking, or wish to take to address a particularly problematic situation. The idea is that changes occur either within the setting and/or within the researchers themselves' (Herr and Anderson, 2015:4).

From the 'epistemology of practice perspective', Argyris and Schön (1991) argue that:

'Action Research takes its cues—its questions, puzzles, and problems — from the perceptions of practitioners within particular, local practice contexts. It bounds episodes of research according to the boundaries of the local context. It builds descriptions and theories within the practice context itself, and tests them there through intervention experiments— that is, through experiments that bear the double burden of testing hypotheses and effecting some (putatively) desired change in the situation' (Argyris and Schon, 1991:86).

The double burden that these authors refer to is the concern with both action (improvement of practice, social change, and the like) and research (creating valid knowledge about practice). For the action researcher, these interventions constitute a spiral of action cycles that are undertaken (Herr and Anderson, 2005). In action research studies, then, 'the research design continues to unfold as researcher and participants collect and analyse data and make decisions for the next phase of the study' (Merriam and Tisdell, 2016:50).

Action cycles and learning loops

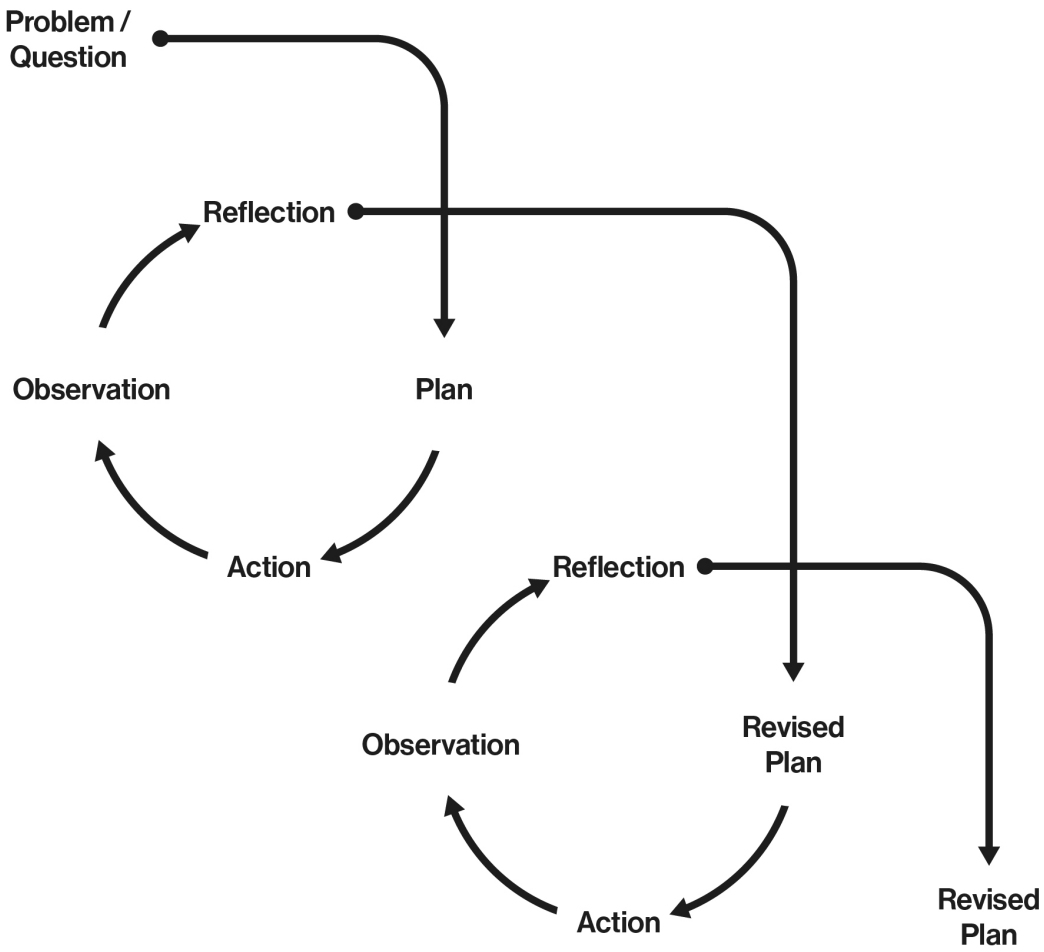
This spiral of action cycles was originally described by Lewin (1946) proceeding in a spiral of steps each of which comprises a circle of planning, action, and fact-finding about the result of the action.

As depicted in Figure 3.3, these stepped-cycles can be described as: (1) to develop a plan of action to improve what is already happening; (2) to act to implement the plan; (3) to observe the effects of action in the context in which it occurs; (4) to reflect on these effects as a basis for further planning, subsequent action and on, through a succession of cycles. A series of steps in these cycles of activities form an action research spiral in which each cycle increases the researchers' knowledge of the original question, puzzle, or problem and, it is hoped, leads to its solution (Herr and Anderson, 2015:5).

In these continuous action loops, the goals of the research (and hence plan and actions) are modified based on what is learned in the previous cycle, leading to the plans and actions evolving with each iteration following reflection on the effects of the actions.

This 'spiral' action process could also lead to double-loop learning with two distinct learning processes intertwined (see Figure 3.4): i) single-loop learning where actors learn and change their actions by improving their understanding of the most effective ways for achieving an objective, and ii) double-loop learning that goes beyond changing actions to also testing the assumptions on which these actions or objectives are based (Argyris and Schön, 1978; Argyris, 1992; Dinshaw, et al., 2014).

Figure 3.3[14]: Action research spiral based on Argyris and Schön (1978)

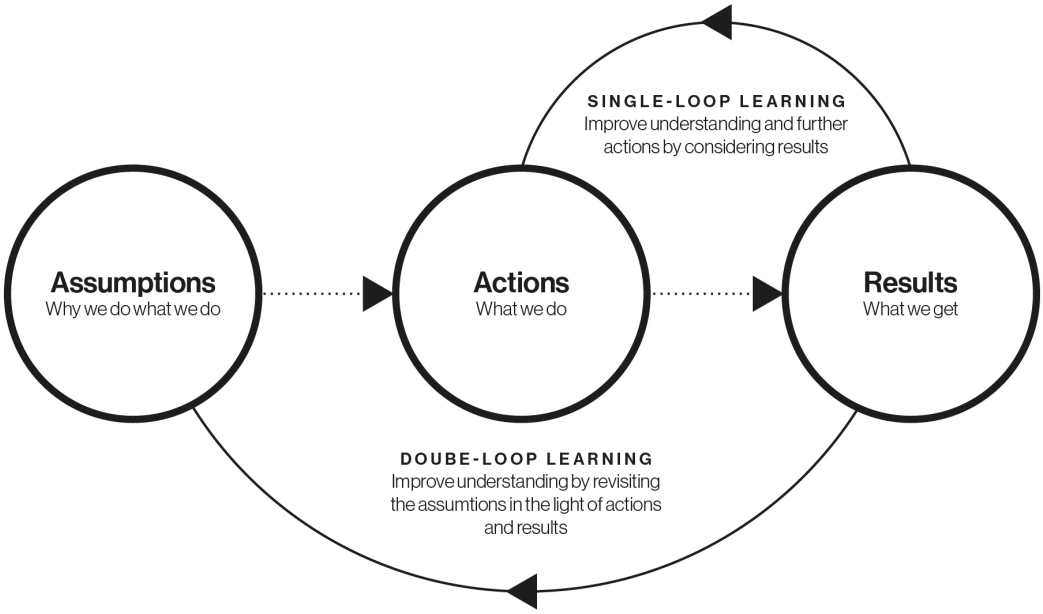


[14] The figure represents two cycles, however there might be multiple depending on the research design.

Following this logic, this research project followed sequential single-loop learning cycles to connect and improve the actions performed in the design process of the LabGob (see section 3.4), and a double-loop learning process to understand and unpack the main learnings from the whole experience, which shaped the main findings of this thesis.

This is expressed in Chapter 5, where the practice component of the project is explained, and Chapter 6, where the key findings of the action research process are developed.

Figure 3.4: Single and double loop learning. Based on Argyris and Schön (1978) and Dinshaw, et al (2014)



3.4. Research design

3.4.1. Action research through design

In May 2014, the Chilean Government announced plans to create a Government Laboratory to promote an innovative State at the service of people. This was the point of departure of this PhD project. As a participant in this process, I wanted to use this valuable opportunity to combine my practice as a strategic designer with my academic interests. This initial position, informed my decision to pursue a practice-based PhD and select an appropriate research methodology to do it.

In the previous section, it has been established that this research is underpinned by a constructionist epistemology and uses 'reflective practice' as the guiding theoretical framework to interconnect thinking and action throughout the process of the project. These theoretical positions support two methodological approaches for building knowledge from my reflective practice of design: 'research through design' and 'action research'.

I call this methodology 'action research through design' where the action refers to the reflective practice of designing the LabGob and knowledge is built 'through' the process of engaging, observing and reflecting with and upon the people involved, the processes followed and the products emerging from these actions.

3.4.2. Research design principles

According to Merriam and Tisdell, 'action research has been used in many different situations with many different configurations to solve practical problems' leading to different types of action research. However, all forms of it share five principles that are used in the design of this research (2016:50-51).

Taking these principles as a general structure, hey are described below, including the 'research through design' considerations.

(1) Problems come from practice and they start as design problems

Action research focuses on a ‘problematic situation in practice' and its main purpose is ‘to solve this problem and through the solution process, improve practice’ (Merriam and Tisdell, 2016:51).

The starting point of this project was indeed a problematic situation in practice: how to help a policy team to design and implement a Government Laboratory? However, from a ‘research through design’ perspective, this problem was also framed as a design problem: what kind of service did we need to design to address the desired value outcomes?

Following Findeli’s (2010) suggestions on how to distinguish the design problem from the research problem, this design problem was then turned into a research problem to clarify the relationship and distinction between the design and research outcomes of the project. This activity is described in Section 4.3.2 and serves as the starting point of the action cycles.

(2) The design of the study is emergent

As explained earlier, ‘the design of an action research study typically unfolds while the study is in process through a spiral cycle of planning, acting, observing, and reflecting’ (Merriam and Tisdell, 2016:51), leading to constant changes of the research and design questions along the way, and to adaptations of the methods to be used in each stage according to the reflections made in the previous one.

After finishing the practice and data collection, a general reflection upon the process was conducted. This led to the research structure that is presented in Section 3.4.3, which is organised in three stages: S1-Preparation; S2- Actions; S3- Impact Reflections. While each stage had distinctive reflections that led to the planning and design of the following stage (single-loop learning), the general contributions to knowledge of this project are based on the analysis and reflection of the whole process, enriched by a discussion against the research questions and their assumptions (double-loop learning).

(3) It is about research through engagement

The action research process is conducted through the engagement of researchers with participants as co-investigators. The degree to which participants act as co-investigators varies and is more involved in some phases than in

others. However, 'action research is generally not done on participants; it is done with participants.'(Merriam and Tisdell, 2016:51).

Kemmis, McTaggert, and Nixon (2014), described three types of action research depending on the degree to which participants are involved in the overall design and implementation of the study and the relationship between the participants and the practitioner-researcher.

This project is of the 'practical action research' type, where the researcher-practitioner establishes a 'symmetrical, reciprocal relationship with the others involved in and affected by the practice' (2014:15). This type of action research is guided by an interest in producing knowledge that can help (or educate) practitioners to 'act more wisely and prudently' (2014:14) in the task of dealing with a problem.

This can be considered as a co-design process, that according to Sanders and Stappers (2008), is a specific instance of co-creation and can be defined as the collective creativity of collaborating designers. In a broader sense and pertinent to this project, it refers to the 'creativity of designers and people not trained in design working together in the design development process'.

In the case of this project, research and practice were conducted through engaging with different practitioners, stakeholders and users throughout the process. However, this engagement was always guided by an interest in introducing, testing, adapting and learning 'designerly ways of knowing, thinking, and acting' (Cross, 2001:5) in the context of an ongoing public sector innovation process, to understand the value and limitation of the use of design in this context.

(4) The research was done as an 'insider practitioner' with different levels of involvement

As proposed by Herr and Anderson (2015), the degree to which the lead researcher is an insider or outsider to the organisation under study makes a difference and must be a consideration in the study. In this project, the researcher's involvement was always as an insider, as I was later considered a co-founder of the Laboratory. However, the level of that involvement varied along the process and decreased after the first year. The different levels of involvement are explained in the overview of the research process in Section 3.4.3.

(5) Analysis and reflections were made using different sources of data

According to Merriam and Tisdell, 'researchers and co-investigators collect and analyse multiple forms of data in a systematic way as the research process unfolds' (2016:50-51). As explained in Section 3.4.5, different methods were used to collect and analyse data depending on the stage of the project.

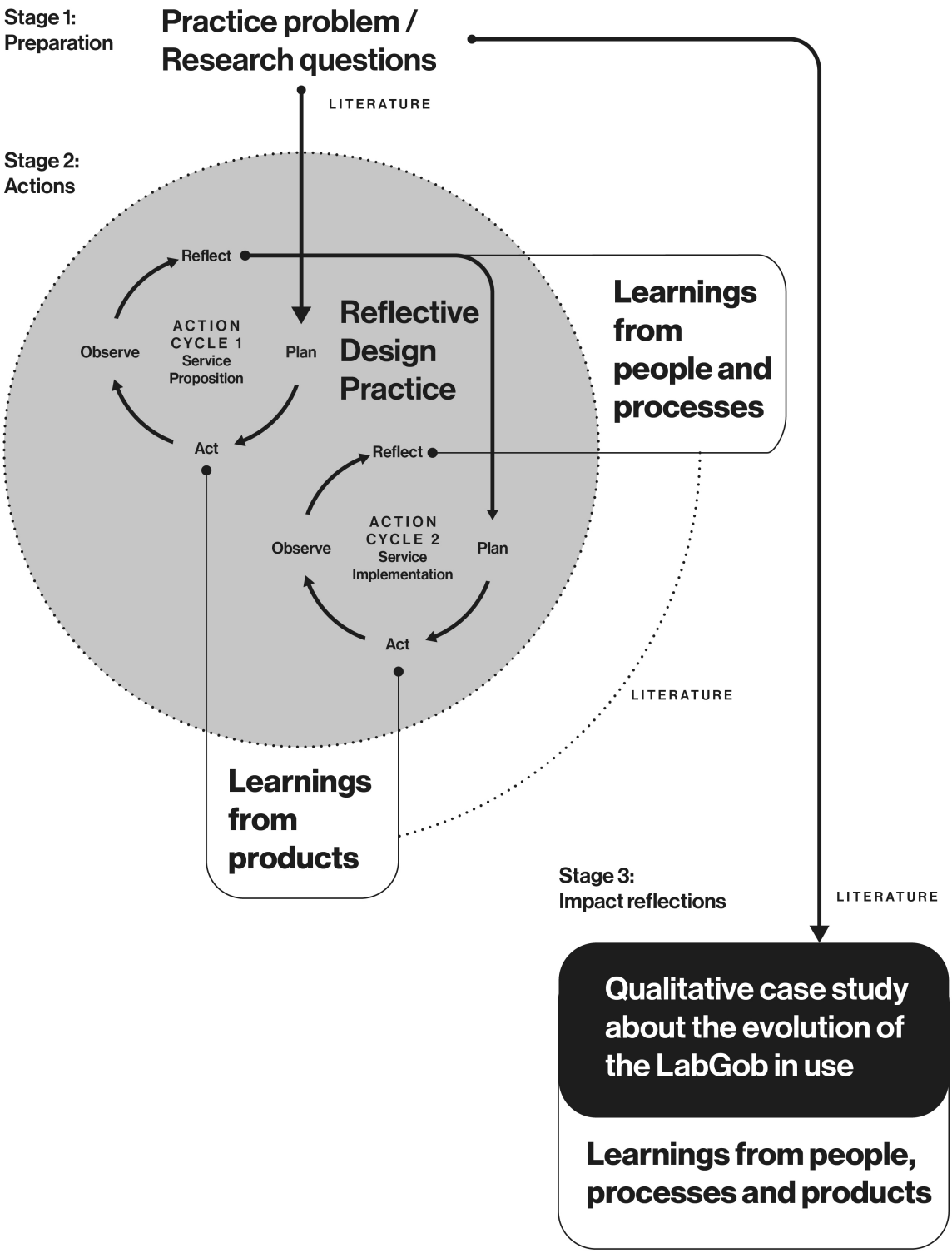
3.4.3. Research structure

As mentioned before, the policy decision of the Chilean Government to create a Government Laboratory, was the starting point for this project, which was concerned with supporting the implementation of this new public policy, the design of its policy instruments and the development and prototyping of the service.

The project was developed over an extended time span of four years. It started when we were invited to submit a project proposal in June 2014 and ended when the new executive director was appointed by the new government administration in 2018. From June 2014 until August 2015, it went through an intensive period of practice; then in March 2016, September 2017 and May 2018 further work was conducted to reflect on the experience and close the data collection for this study. The research project was completely intertwined with the development process and evolution of the Laboratory both as a public service and as a policy in action.

The research design reflects three elements: my position as a practitioner-researcher within the development phase of the LabGob; the nature of my engagement and contribution as a designer-researcher; and the methods and research strategies used for gathering evidence, observing and reflecting. The project followed three sequential stages: preparation, actions, and impact reflections. As explained in Figure 3.5, these stages are connected by their inputs and outputs.

Figure 3.5: Research structure.



Stage 1 - Preparation: exploring the problem in practice

This stage was about understanding the problem in practice and reframing the question in the light of the situation and context. Using the appropriate literature, research objectives were framed to start the actions. This stage incorporates all the activities done before the researcher's formal involvement as a designer-researcher. It started in May 2014 –concurrent with the first development phase of the Laboratory–, when the policy mandate of creating a Government Laboratory was announced. It ended in July 2014 when I commenced work as a designer-researcher, submitting a project proposal to the Government's policy team in charge of the implementation of the Laboratory.

The objective of this stage was to explore and define three key elements before starting the action cycles. These were:

- **Define an initial design problem:** to explore and define the 'problematic situation in practice' that needed to be addressed in the form of a design problem.
- **Define an initial research problem:** to turn the design problem into a research problem in the light of the literature, in order to clarify the relationship and distinction between the design and research outcomes, and inform the planning of the first actions.
- **Define a position and a plan:** to define and prepare involvement as a designer-researcher within the project as well as to develop a plan for the first action cycle.

My position at this stage began as an 'outsider', who had the intention of coming into the project. Engagement was primarily with other practitioners together with the policy team in charge of the implementation of the Laboratory, with whom a proposal for the project was developed for presentation to the Government.

Stage 2 - Actions: reflective design practice

This stage was about designing and prototyping the LabGob through two action cycles. Following Cross (1999), these processes have two kinds of outputs where learning is drawn upon action outputs, where knowledge is built by observ-

ing and reflecting upon the design products emerging from practice; and reflective outputs, where knowledge is built upon the key insights emerging from continuous engagement with the people involved and the process followed in the whole practice stage (double-loop learning).

The Actions stage is the core component of the research project and contained the activities of designing the Government Laboratory between July 2014 and August 2015. These are grouped in two action cycles: (1) the service proposition and (2) service implementation.

The aim of Stage 2 is to conduct a design project (the Government Laboratory) and, by designing, reflect upon practice in order to help answer the research questions. The general objectives of this stage were structured in relation to each one of the research questions. Each action cycle had different objectives which are related to the general ones. These objectives are explained in detail in Chapter 4 together with the plans, actions and design outputs of each cycle and their relationship. The observations and reflections of practice are grouped in Chapter 5, in an effort to bring more clarity to the study.

My involvement during these stages was as an 'insider' with different types of engagement. During both cycles, my official position was as a design consultant, part of the policy team in charge of the implementation of the Laboratory.

The first cycle involved engagement with fellow team members of the Government and key internal stakeholders, leading in creating the conceptual frameworks behind the strategy and also introducing service design methods both to the project and to the team. Most of the process was conducted internally. However, I was also in charge of international relations with the purpose of testing and refining our strategy with key reference practitioners in the 'world of labs'. In this context, research was done together with practice, and reflections on the process are the core elements of my findings from this stage.

During the second cycle, most of my work concerned applying design frameworks and methods in the context of a 'demo project'; then training members of the team and key stakeholders involved in this and other areas of the Laboratory, as well as supporting the on-boarding process of the new team and helping with the preparation of the first Open Innovation Programme, that was part of the 'demo project'.

This prototype stage was as much about creating tangible design outputs as it was about creating 'experiences of collaboration' that used design methods in practice. The latter would subsequently become a key element of the Laboratory's work and 'seal'. As in the previous stage, again research was done together with practice, and reflections on the process and on the design outcomes, are the core elements of the research findings detailed in Chapter 5.

Stage 3 - Impact reflections

This stage was about conducting a qualitative case study on the evolution of the service 'in use', drawing learning from people, processes and products. This process started immediately after my departure in August 2015 and involved travel to the Laboratory four times between then and January 2018.

My engagement in this stage was different from before. In this case, as an observer and informal advisor based in London, I was following announcements from the Laboratory and informally discussing the achievements and challenges with former colleagues throughout the period.

As a researcher, I conducted three rounds of interviews for building the case from January 2016 until April 2018. In this period I acted both as a consultant and researcher. As a consultant this entailed organising the different activities and functions that the Laboratory had evolved after two years in the form of a refined 'service model'[15]. This helped enrich my understanding of the value that design had both for the innovation strategy of the Laboratory and for the experience that the service was providing.

A summary of the key milestones in the evolution of the LabGob connected with the research stages is offered in Table 3.3. This researcher's involvement in each phase had different intensities and roles and offered distinct spaces for reflection, as explained earlier.

[15] This was part of a commission by the IDB published in Rebolledo (2018)

Table 3.3: Summary of the key milestones of the evolution of the LabGob connected with the research stages.

Research Stage	*Development Phase*	*Description*
Stage 1 - Preparation	**The LabGob as a Policy mandate and opportunity for design and research** (May 2014- July 2014)	Started with the presidential mandate in May 2014 and consisted in the process of developing the project proposal and engaging with key stakeholders and decision makers.
Stage 2 - Actions: Cycle 1	**The LabGob as a Policy and a Public Innovation Committee** (July 2014 - January 2015)	Started with the acceptance of the project proposal and comprised a process of policy formulation, strategic definition, institutional design and service design. It ended with the second meeting of the Strategic Council responsible for the Laboratory which approved the service proposition and implementation plan.
Stage 2 - Actions: Cycle 2	**Prototyping the LabGob through a Demonstrator Project** (January 2015 - August 2015)	Started with what was called a 'demo' project, whose aim was to put in practice the service proposition. The phase involved a process of refinement of the strategy, functions, service units and offerings of the Laboratory. This stage includes the official public launch of the Laboratory, one year after the presidential announcement. It ends with the launch of the first open innovation programme.
Stage 3 - Impact reflections	**Implementation of the LabGob** (June 2015 - March 2016)	Started with the official public launch of the Laboratory and consisted in hiring and training a team, then implementing all the functions and units proposed in the previous stage. The phase ended with an international conference in partnership with the OECD that was held in Santiago in March 2016. First round of interviews was conducted at that stage.

Research Stage	*Development Phase*	*Description*
	Consolidation of the LabGob in the Chilean ecosystem of public sector innovation. (April 2016 - April 2018)	After the international conference that helped to validate the Laboratory by national and international peers, all the focus of the Laboratory was to 'exploit' what had been designed and tested for the first time in previous phases, with a focus on delivering tangible and impactful results. The phase ended with the change in the Government. Second round of interviews was conducted at that stage.
	Transition to the new administration (May 2018 - present)	With a new Government in place, this phase was about the transition and adaptation of the Laboratory to the policy priorities of the new Government.

3.4.4. Design methods

Although each professional field has its own distinctive practices, each with its own distinctive 'internal goods' to be enhanced through action research (Kemmis et al., 2014), when conducting 'research through design', the main methods of practice are those belonging to the design discipline. However, the question of what constitutes a proper design method has been a matter of controversy since the early days of design research.

This researcher aligns with others such as John Chris Jones[16] (2012), who considers that a design method 'is any action whatever that the designers may decide is appropriate'[17]. Moreover, 'the usefulness of any design method –or the purpose of a whole design process, consisting of several methods in a chosen sequence or in parallel– is to provide an adequate way of "listening to" the users, and to the world, in such a way that the new design becomes well fitted to people and to circumstances.' (2012:148).

[16] Jones was one of the main critics of the design methods movement in the 70s: 'In the 1970s I reacted against design methods. I dislike the machine language, the behaviourism, the continual attempt to fix the whole of life into a logical framework' (Jones, 1977 in Cross, 2007)

[17] He also defined them as 'Techniques which enable people to design something, to go beyond their first ideas, to test their designs in use or simulated use, to collaborate in creative activity, to lead design groups and to teach and to learn designing' (Jones, 2012:148).

In this project, design methods are considered to be all the activities done in the project that were related to the design of the Laboratory, as opposed to research methods which are the ones used to observe and reflect upon the design processes and outcomes. This has been made explicit in Chapters 4 and 5 to distinguish plans and actions from observations and learning.

3.4.5. Research methods

Methods and sources for gathering evidence

Kemmis et al, (2014) propose that in action research it is more appropriate to talk about 'gathering evidence' rather than collecting data to 'feed and nurture self-reflection' and to help us answer the research questions. They suggest that focusing on evidence can help 'to change your practice, your understanding of your practice, and the conditions under which your practice is carried out' (2014:177).

In this project, I used multiple methods and sources to gather evidence, depending on the project's stage and my position as a researcher. As depicted in Table 3.4, I have organised seven volumes of documentation that contain the different sources of evidence that emerged from this research. Each one of them considers different types of documentation and methods for gathering and analysing evidence. The sources of evidence are organised into three categories:

- **Evidence produced by others**

Two volumes of documentation were compiled. The first one (1) contains government background documents produced by the internal policy team before the creation of the Lab. These are resolutions, regulations, presidential speeches and policy background documents that I used to inform the preparation stage. The second (5), contains a selection of the official documentation produced by the Lab between 2014 and 2018 which was collected along the process and analysed during the impact reflection stage.

These documents are presentations to the strategic council, official documents about strategy and programmes, and a collection of design products used in the branded experience offered by the Lab.

▸ Evidence produced by me during the reflective practice stage

Three volumes of documentation were compiled. The first one (2), contains documentation of the design process and outputs during Action Cycle 1. The second (3), contains the same kind of documentation but from Action Cycle 2. The practice was documented through minutes, field notes, videos, pictures, diagrams, process models, presentations, and service design outputs produced in process.

The third one (4), contains the reflections from practice during this process. These are in the form of field notes and presentations in talks and research meetings, and also containing key findings in the light of new literature reviewed during the process. These pieces of research helped inform the impact reflection stage.

▸ Evidence produced by me during the impact reflection stage

Two volumes of documentation were compiled. The first one (6), contains the documentation of the seven research workshops I held between 2015 and 2017. I conducted two different streams of workshops: feedback workshops, consisting of two sessions of feedback from the Demo project, one with Recoleta and one with Ministry of Health in June 2015; and impact workshops, consisting of five sessions for systematising the value proposition of the LabGob with the internal team and key stakeholders in September 2017.

The second one (7), contains the documentation of 21 semi-structured interviews I did between 2016 and 2017. I conducted the interviews in three rounds: the first round with members of the team to reflect on the practice process in January 2016; the second round with the executive team to understand the evolution of the LabGob, and the third round with key stakeholders to better understand the value of the Lab. Both in September 2017.

Table 3.4: Sources and methods for gathering evidence[18]

Sources of evidence		***Methods***	***Sample***
1 **Government background documentation**	1. Resolutions and Regulations 2. Presidential speeches and documents 3. Policy background documents 2014-2015	• Document analysis of material for understanding policy objectives and context	14 documents
2 **Documentation of design processes and outputs of Action Cycle 1**	1. Stakeholder consultations (minutes and notes) 2. Innovation strategy documentation 3. Narrative and brand strategy documentation 4. Internal meeting notes	• Document analysis of material for understanding the process and evolution of practice • Narrative interpretation of Insights and tacit knowledge from practice and informal conversations with stakeholders. • Visual diagraming of process, models and sequences of events to understand evolution of practice	12 documents
3 **Documentation of design processes and outputs of Action Cycle 2**	1. Demo project report 2. Impacta Health documentation 3. First skills programme for public managers 4. Team description and on-boarding 5. Progress reports		15 documents
4 **Practice progress reflections**	1. Field notes 2. Research presentations, talks and dissemination	• Review of literature for interpreting findings • Visual diagramming and design of presentations for feedback.	5 documents

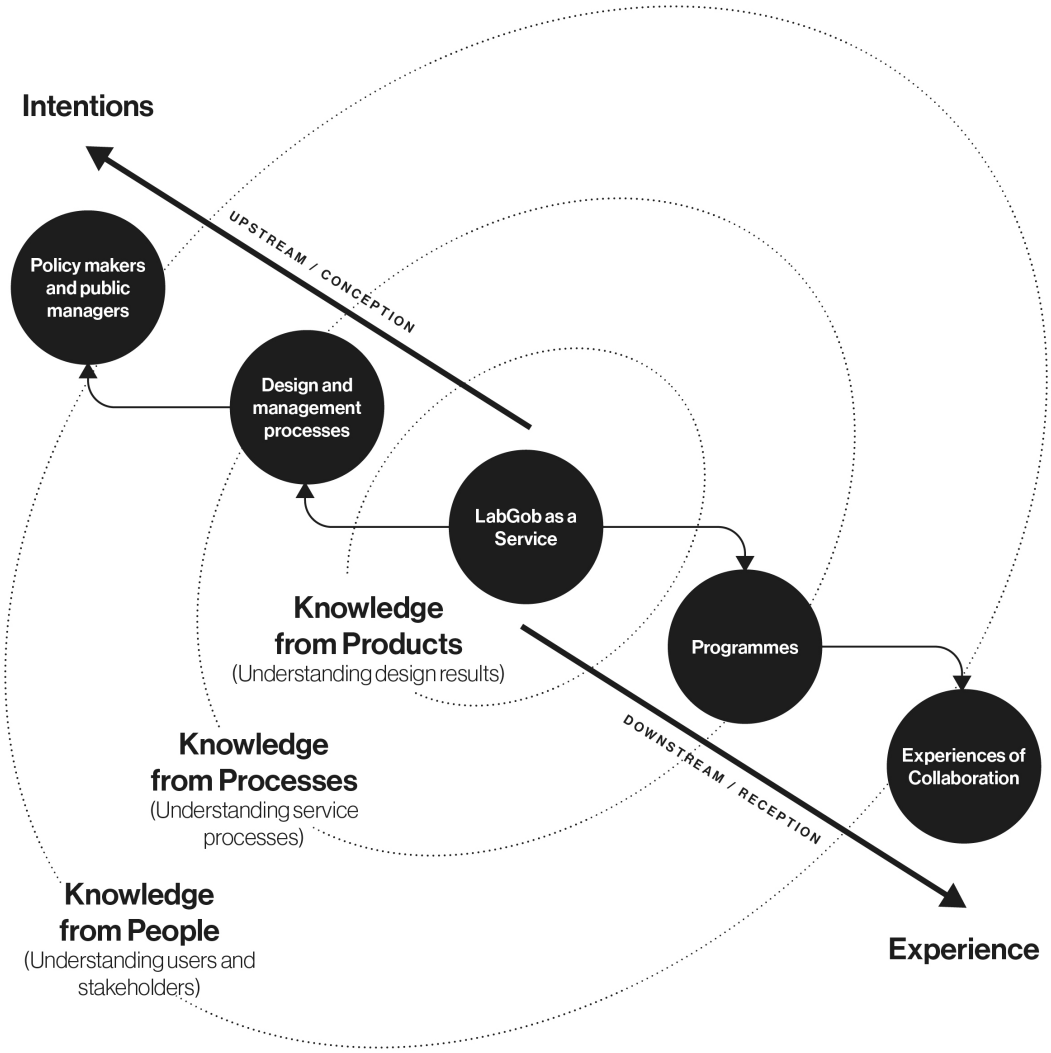
[18] A full index of all of these sources are presented in Appendix 1. Some evidence is available through hyperlink.

Sources of evidence		*Methods*	*Sample*
5 **LabGob official documentation**	1. Presentations to the Strategic Council 2014 - 2016 2. LabGob official documents on strategy and programmes 2017-2018 3. LabGob documentation on branded experience and communications 2015-2017	• Document analysis of material for understanding the process and evolution of the model • Visual diagraming of process, models and events	19 documents
6 **Research workshops**	1. Feedback workshops: Two sessions of feedback from the Demo project, one with Recoleta and one with Ministry of Health (June 2015) 2. Impact workshops: Five sessions for systematising the value proposition with team and key stakeholders per programme (Sep 2017)	• Design of the sessions • Collection of information through audio, photo and video. • Transcriptions and thematic analysis	7 workshops
7 **Research interviews**	1. First round with members of the team (Jan 2016) 2. Second round with executive team (Sep 2017) 3. Third round with key stakeholders (Sep 2017)	• Semi-structured interview guides • Collection of information through audio and notes • Transcriptions and thematic analysis	21 interviews

Methods for analysing evidence

As seen in Section 3.3.1, the general analytical framework for organising the diverse sources of evidence, is based on Cross (1999) where design knowledge could come from three different sources: people, processes and products. This model was complemented by the proposition of Findeli and Bousbaci (2005) to consider these dimensions both from a 'conception' and 'reception' perspective in the upstream and downstream of a design object or result.

Figure 3.6: Analytical framework for the LabGob as a service. Based on Cross (2007) and Findeli and Bousbaci (2005).



As depicted in Figure 3.6, in this project, the object is understood as the institution-service we have created: the LabGob is positioned at the centre as an object. Therefore, the organisation behind the service is positioned in the up-

stream, so my interest is to focus on the people, process and design resources that constitute the organisation and enable the service to create and deliver value for their users and stakeholders. My concern is to examine the key processes and functions of the service that create and deliver that value and eventually support the 'experiences of collaboration' with the users of the Lab.

I used a multi-method and iterative approach to understand the Lab as a service, its programmes, and its design and management processes. This approach included the following research methods:

- **Field notes.** Contextual information and critical reflection on the research process were rigorously collected and organised throughout this study to enhance data analysis, including rich descriptions about the settings and nonverbal content of the individual interviews and workshops delivered. These notes were also used to inform about the relevant documents to search for as part of this study and guide in their analysis. The field note content was subsequently revised and integrated with the study data, highlighting critical information concerning the main research questions (Phillipi and Lauderdale, 2018).

- **Document analysis.** A search and selection of documents was made following relevant information obtained through stakeholders' consultations and field notes from practice, including both background policy material for understanding policy objectives, as well as context and strategic material of the Lab for better understanding of their design processes and the model's evolution. The review of documents involved a first level of analysis, providing key insights relevant to the research problem and additional questions to be asked (Bowen, 2009).

- **Visual diagramming.** Graphic representations of the key insights gathered from the previous stages of data collection were created in order to illustrate the design process, innovation models, and sequences of events involved in the development of the Lab. Subsequently, a series of presentations of these synthetic diagrams were conducted with team members at the Lab, peers, and my supervisors in a collaborative process throughout the study, becoming a very useful reflective tool to understand the evolution of the practice and receive feedback. Since diagrams can represent both concrete and theoretical notions, using this technique as part of the research process offered significant benefits in managing the type of data needed to answer the research questions, such as examining

change over time or exploring people's experiences and views (Umoquit et al., 2011).

· **Redefining literature search.** Based on the feedback on the synthetic diagrams, received from the research participants, I conducted a further study of the literature to deepen the reflection on the key insights. It is expected in action research that the literature reviewed for the study should develop 'as the researcher grows into a deeper understanding of the issues under study' (Her and Anderson, 2015:105). This information was further analysed in light of the field notes and documents that were mentioned above, allowing new insights that were illustrated with new diagrams. This process was repeated several times, producing iterative cycles where data analysis was pushed by relevant literature and then requiring the inclusion of new literature to help illuminate the findings.

· **Impact workshops.** A series of workshops were conducted with team members of the Lab throughout this study, aiming to make sense of insights and systematise findings arising from the creation and implementation of the Lab. These workshops had research purposes, producing reliable and validated data that helped to consolidate the understanding of the process involved in the Lab as a service (Ørngreen and Levinsen, 2017). In order to understand the policy intention of the managers, the perceptions and reflections of the members of the team, and the experience of key users and stakeholders, I applied the following research methods, using an iterative approach.

· **Feedback workshops.** Following a similar procedure as described above, I conducted a series of workshops with the stakeholders of the demo project and the team members of the Lab, focused on understanding their values and perceptions of the use of design in the Lab. The data gathered together with field notes helped to create the topic guides that I used for the interviews with the research participants. The topic guides were also shaped by the research questions and analytical framework.

· **Semi-structured interviews.** Between January 2016 and September 2017, I conducted twenty-one semi-structured interviews with members of the Lab's team, members of the strategic council, and key stakeholders of the Lab (see Appendix 2 for the list of interviewees and their roles). This technique allowed the inquiry to be structured in accordance with the analytical framework, while incorporating open-ended questions to elicit data grounded in the lived experience of the participants (Galletta, 2013). Also, semi-structured interviews

were particularly useful for making comparisons across the different groups of research participants when analysing the data. All the interviews were conducted in Spanish, as it was the first language of the research participants, and they were audio-recorded with their consent. The interviewees were assured of anonymity and confidentiality.

- **Thematic analysis.** I transcribed all the interviews, summarising the relevant content and highlighting direct quotes concerning the research questions. The summaries of each interview were translated into English for data analysis purposes. Themes were identified by using an inductive approach, and then analysed, organised and described in order to examine the perspectives of the different research participants, highlighting similarities and differences, and generating unexpected insights (Nowell et al., 2017).

Once the clustering of the interviews' topics was finalised and a selection of quotes focused, I drafted a first synthesis of the findings (see Appendix 3). With this first draft, a final review of the literature was conducted to reflect on the evidence that was gathered. This thesis presents the results of that reflection and its conclusions.

3.4.6. Ethical considerations

According to Kemmis et al (2014), the main ethical obligations of those doing action research or practising any profession ‘are to respect the persons involved and affected, and to do no harm’. Respect in this context means ‘respecting their integrity and humanity as persons’, and no harm means not only avoiding physical harm or hurt, but also psychological harm, such as inducing stress and anxiety or affecting participants’ self-esteem or damaging their reputations in any way.

Specific action research literature on ethics, suggests that these ethical considerations should based on principles such as inclusivity and participants’ recognition, by considering all stakeholders as research participants; mutual responsibility, by considering that the ownership of data and dissemination processes in relation to an investigation should involve consultation with all of these stakeholders; ‘communicative freedom’, or the right that members of the research group have to withdraw or renegotiate the grounds for their participation at any time; and transparency, both in terms of the simple language to be used to com-

municate, and in terms of being open and explicit with the biases and assumptions brought by the investigation (Locke et al., 2013).

When practising design in this context, these principles with regard to participants and stakeholders involved in the process, can also be extended to the responsibility of designers –especially in the context of design teams or organisations– for assessing design accountability in conditions of uncertainty (Chan, 2018). This means taking the necessary precautions to manage the potential risks of a design intervention in the given context.

During the research process, these ethical principles were adopted and applied as a general code of conduct for conducting design and research activities. However, taking into account my position as an 'insider' working in, with and for a public institution, in a dual role as researcher and designer, I took concrete and explicit measures to mitigate the ethical risks and concerns arising from the research process and context.

My relationship with the internal policy team was first governed by a contract for professional services with CORFO. However, my research involvement was authorised by the head of the internal team and later executive director of the LabGob who acted as the gatekeeper for my research activities. This meant in practice that my relationship with the action research group comprising team members, users and stakeholders was mediated by the relationship that this government institution had with all these parties. This situation raises the following ethical concerns:

- How to respect the institutional relationship with the LabGob and build mutual responsibility in the design and research process?
- Since most of the participants were part of an institutional hierarchy, how to respect individuals' willingness to participate?
- Since the research was done in a politically sensitive environment, how to protect participants from any potential harm from their assertions?
- Since the design and research was a collective process done in a public institution, how to share ownership and maintain open access to the design outputs?

In dealing with these concerns, I took the following measures:

- **Written permission from the executive director of the Lab-Gob**

Since all the interactions during the process were governed by the arrangements that the LabGob made directly with different stakeholders and participants, I obtained written permission to conduct field work from the executive director of the LabGob.

This permission was given on two occasions: when I was leading a team of designers and reflecting on my practice (August 2015 –July 2016); and when I worked together with the team to analyse the service in use, conducting workshops and accessing official documentation (September 2017 – January 2018).

This written permission was subject to the internal policy that every time I started any activity with the team or other parties involved, the participants were informed of my presence in the field and asked for their informed consent verbally or by email. Participants were informed and their involvement was voluntary in all instances of the project.

- **Informed consent from the participants in semi-structured interviews**

I obtained explicit written informed consent from the people I interviewed, creating an information sheet and a consent form in order to do so. The 21 interviews were conducted with informed consent.

- **Anonymity and confidentiality**

In general terms, in the written permission and consent forms, I committed to keep the identities of all participants anonymous and only use material that was publicly available, including images, videos and quotes. Anonymity, however, meant that I had to take precautions not to disclose the participants' identities in the results of the research. For this, I used a narrative reflective style for presenting findings, not distinguishing between sources of evidence, so as to ensure that no identities could be disclosed.

This anonymity policy was used for all the participants except for the executive director. He agreed to forego anonymity, and the identities of some government officials are also disclosed in public documents.

▸ Open access of published research and design outputs

The field practice was under a contract with CORFO, with the disclosure that all IP was public and part of the LabGob. At the same time, I was given permission to use only images, videos and non-anonymous quotes in my final thesis that were previously published in research outputs of the LabGob, such as books, reports and websites. All of this material is under a creative commons licence.

3.4.7. Validity of action research

According to Herr and Anderson (2015), the question about the validity of action research studies has been at the core of the methodological discussion on the quality and trustworthiness of action-oriented knowledge outcomes. They argue that in the social sciences, academics tend to be comfortable with action research as a form of local knowledge that improves practice, but less comfortable 'when it is presented as public knowledge with epistemic claims beyond the practice setting', and this is 'particularly important in the case of dissertations, whose primary justification is the production of new knowledge' (2015:64).

This opposition is expressed as a tension between the so-called 'outsider academic' vs the 'insider practitioner'. On the one hand, the 'outsider' considers that practice-based knowledge is biased and bounded by the situation and context in which it arises and it is 'largely unmediated by academic researchers'. On the other hand, the 'insider', considers that 'outsider knowledge is often experienced by practitioners as a 'rhetoric of conclusions', which enters the practitioners' professional landscape mainly as theoretical knowledge 'with little understanding that their landscape is personal, contextual, subjective, temporal, historical, and relational among people' (2015:65).

In this context, it is argued, the main tension may appear to be between practice-driven vs theory-driven knowledge and the debate seems to be less about the research epistemology and methodology and more about 'the very nature of professional practice itself and what types of knowledge can best inform it' (2015:65).

Interestingly, this debate is similar to the one discussed in Section 3.3.1 about the most appropriate approach to take within the design discipline to reconcile theory and practice. There is some resistance to considering 'research through design' as a valid approach to conduct research.

A framework developed by Herr and Anderson (2015) helps bring legitimacy to action research studies in academic contexts through reconciling 'outsider' and 'insider' perspectives. They connect five action research goals with five indicators of quality. In Table 3.5, this framework is adapted to include the objectives of a research through design project, reframing the validity criteria as key questions that the research should be able to answer during the process[19].

Table 3.5: Adaptation of Herr and Anderson's goals of action research and validity criteria (Herr and Anderson, 2015:67-68).

Goals of Research	***Quality / Validity Criteria***
The achievement of action-oriented outcomes ***(and for RTD)*** **To answer a design research question through designing a solution to a design problem.**	**Outcome validity** • Were the actions capable of leading to a 'resolution of the problem that led to the study'? • Was the research 'integral'? Integrity being based on the quality of the actions which emerge from it, and the quality of the data on which the actions were based. • Was the researcher able to 'reframe the original problem in a more complex way', leading to a new set of questions or problems along the spiral process?
A sound and appropriate research methodology	**Process validity** • Were the problems framed and solved in a manner that permits ongoing learning of the individual or system? • Are the 'findings' a result of a series of reflective cycles that include the ongoing problematisation of the practices under study? • Were multiples perspectives and data sources in considered in the research?

[19] In this adaptation the order in which they describe the validity criteria is followed and the main arguments turned into questions.

Goals of Research	*Quality / Validity Criteria*
Results that are relevant to the local setting	**Democratic validity** • Was the research done in collaboration with all parties who have a stake in the problem under investigation? • Were the findings relevant to the needs of the problem context?
The education of both researcher and participants	**Catalytic validity** • To what extent was the research process able to reorient, focus, and energise participants towards deepening their understanding of the social reality under study in order to transform it?
The generation of new knowledge	**Dialogic validity** • Was the research discussed or monitored by a peer review process? • Was the researcher in critical and reflective dialogue with other action researchers?

These key questions were taken into consideration throughout the project in an effort to assess the quality of the study. However, it is important to establish that according to Herr and Anderson (2015), 'validity criteria for action research are tentative and in flux', and their appropriateness is relative to the specific circumstances of the research and context. In this sense, there is a personal assessment of the research validity based on the criteria presented below.

- **Outcome validity.** The research was successful in achieving both design and research outcomes. The process led to the sustainable implementation of the LabGob, that is still functioning after five years and in a different government. Although the research was integral in terms of the actions performed (Chapter4) and the data collected (Section 3.4.5), there is a limitation on findings as they are mainly connected to the Chilean context. However, the research was able to conduct two action cycles leading to a new set of questions that informed their sequence (Chapter 4).
- **Process validity.** The methodology selected for this practice-based research allowed a collective process of mutual learning that led to the development of design and innovation capabilities in the internal team (see Chapter 5). This allowed a continuous learning process within the team and the institution that led to the spread of the approach in the Chilean context (see Chapter 6). Al-

though the findings are a result of continuous reflective practice, there is a limitation due to the narrow scope of perspectives that were considered. A case study with a broader set of beneficiaries of the LabGob might be highly beneficial.

- **Democratic validity.** The research results were highly relevant to the local setting, as the process was conducted in close collaboration with the public institution, key decision-makers were involved during the process, and results were published in Spanish and in the form of official documents of the LabGob[20]. This local relevance also had a regional impact, leading to the application of key insights and design heuristics in other settings, for example in the Mexican Government[21].
- **Catalytic validity.** Through a process of mutual learning, the research process was able to educate designers in the field of public management and vice versa. However, there is still a limitation regarding a shared critical understanding of what is entailed in introducing design in a political setting.
- **Dialogic validity.** This element is the weakest component of the research. Even though the practice process and outputs have been widely shared with peers and other practitioners, the research outcomes have not been shared in an academic peer-reviewed context. Further work is needed in this area.

[20] See: Rebolledo, N. (2018) 'Modelos y metodologías de innovación'. In: Laboratorio de Gobierno (2018) Un Estado innovador para las personas: los primeros años del Laboratorio de Gobierno 2014-2018. Santiago, Chile: Gobierno de Chile. pp. 31-437. Available from: https://researchonline.rca.ac.uk/4539/ [Accessed: 2 November 2020].

[21] See: Rebolledo, N. (2020) *The creative policy programme: Implementation toolkit.* Mexico: The British Council Mexico. Available from: https://researchonline.rca.ac.uk/4538/ [Accessed: 2 November 2020].

Chapter 4

Designing the LabGob as a policy instrument: integrating Design into the policy cycle of PSI

4.1. Introduction to the chapter

This design research project aims to further understanding of the value of design in Public Sector Innovation and clarify the role it could play at different levels of government transformation when integrated into the politico-organisational context of a new PSI-Lab. Using an 'action research through design' approach (see Chapter 3) the study explores how design was used to create a PSI-Lab inside the Chilean Government (LabGob) and examines the value and limitations of design as a core element of the LabGob in supporting innovation throughout the policy cycle.

The purpose of this chapter is to give a detailed account of the first aim, namely to explain how design was introduced and integrated into the policy cycle of PSI by designing and implementing the Chilean LabGob. Here I show how the LabGob was conceived as a policy instrument and designed as a service in two action cycles: (1) the development of the service proposition and 2) the service implementation.

The chapter is divided into five sections. Section 4.2 gives a detailed account of the policy intentions behind the presidential mandate and provides an overview of the organisational arrangement that would support this policy. Section 4.3 explains the vision for the LabGob as a policy instrument, giving a detailed account of how design objectives and research questions were aligned.

Sections 4.4 and 4.5 explain in detail the activities and design outcomes of both action cycles, respectively. Finally, in Section 4.6, I offer some closing remarks about the main outcomes of the process.

4.2. Understanding policy intentions

On the 21st May 2014, during the Public Accounts speech to Congress and just months after her second term began, President Bachelet announced her intention of creating a Government Laboratory for the first time. This mandate was framed within a strategy of public sector innovation. The Laboratory was conceived as a vehicle to promote a State that seeks to change the way public policies are made: facing citizens and with the participation and collaboration of diverse parties, such as civil servants, citizens, students, entrepreneurs, academics, business people, civil society institutions and international organisations.

To understand the objectives behind this policy, this section offers a narrative description of the key arguments behind the mandate, based on a review of official documents, internal working documents, political authority interventions and interviews with parties relevant to the process. This includes an overview of the State modernisation tradition of the Chilean public sector; a review of the problem that the presidential mandate seeks to resolve, in order to "foster an innovative State at the service of the people"; a retrospective explanation of the institutional arrangement that was in place; and an overview of the brief for designing the LabGob as a service and policy instrument.

4.2.1. The policy mandate: an innovative State at the service of people

Since the return to democracy more than 25 years ago, Chile has experienced multiple and significant transformations. Along with a reduction in poverty from around 68% in 1990 to 14.4% in 2013, it has increased GDP per capita in the same period from US$2,500 to US$16,000[1] and the public sector in Chile has undergone a steady process of reform and modernisation. According to a

[1] GDP per capita (US$ at current prices). Data from the national accounts of the World Bank and data files from national accounts of the OECD. (World Bank, 2018)

study by SEGPRES[2], this process of modernisation began once democracy was restored with the obligation of tackling the weakness of the post-dictatorship State and focused initially on improving effectiveness and efficiency in strategic areas of the public sector (Navarrete, 2008). These improvements would serve as support for a series of political, economic and institutional reforms that would later become the foundations of the current Chilean public sector[3].

It is in this context that in the early 1990s public management emerged as a strategic focus of modernisation, first in the Plan and then in the Public Management Modernisation Pilot Programme run by the Budget Directorate (DIPRES). The aim was to improve the management of public institutions and the performance and quality of their services. This focus on the adoption of management techniques and instruments by the public sector, based on the principles of the 'New Public Management' and to improve services, became key for the rest of the decade. The Inter-Ministerial Committee for the Modernisation of Public Management was created in 1994, involving the adoption of 'a new culture guided by the achievement of results and by service to the user' (Egaña, 2002).

This focus on service would become even stronger at the beginning of 2000 with the State Reform and Modernisation Project, which had as its guiding principle the shift towards a 'State at the service of Citizens' (Egaña, 2002). Among its multiple courses of action were: the creation of a system of senior public management, which sought to improve transparency, integrity and professionalism in the Civil Service; the creation of the State's centralised online procedural portal, 'Trámite Fácil', which sought to digitise the public apparatus and deliver better services to citizens; and the creation of ChileCompra, the public procurement system for the public sector, which sought greater transparency and openness in the public sector's purchasing functions and which, since its creation, has effected more than US$5 billion in savings for the State (Céspedes, 2017).

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[2] In 2014, the State Unit of Modernisation and Electronic Government of the General Secretariat of the Presidency (SEGPRES) carried out a study to identify various milestones in this modernisation process in order to establish the foundations for a new innovation policy in the public sector. What is described in this section is based on this study. See: Schramm and Oyarce (2014).

[3] These modernisation initiatives include the Labour Directorate, the National Solidarity and Social Investment Fund (FOSIS), the National Health Fund (FONASA), the National Kindergarten Board (JUNJI), the Agricultural and Livestock Service (SAG), the Technical Cooperation Service (SERCOTEC) and the Internal Tax Revenue Service (SII).

This approach to service transparency, management and digitisation led to various sectoral programmes for digitising internal processes and external procedures, many of which in 2011 were centralised by the State Unit of Modernisation and Electronic Government of the General Secretariat of the Presidency (SEGPRES) on ChileAtiende, a multi-service and multi-channel platform to connect citizens with various digital public services.

This long and lasting tradition of state modernisation, which has been pursued by different governments, has allowed the public sector to adapt gradually to the transformations and growing demands of Chilean society. These continued efforts have been recognised by the OECD as a significant factor in the country becoming a leader in Latin America in terms of effective and stable public governance and innovative solutions (OECD, 2017a).

In keeping with this tradition, when President Bachelet launched her government in 2014, she stressed the need to give this process a fresh impetus, calling to make 'a step beyond modernisation and promote as well an innovative State at the service of people'. Beyond simply sustaining the pace of government modernisation, there was also a need for 'a public sector prepared and in tune with citizens' current demands and problems' (Bachelet, 2014:22).

The President, who began her second term[4] 'with the imperative of a people-centred government' (Bachelet, 2013a:8), later posited that the goal of having a better State 'is more important today than ever' due to the challenge of 'rebuilding the relationship between citizens and institutions, based on a new trust' in a context of social dynamism and major citizen participation. To this end, the government strategy focused on two complementary paths: 'on the one hand, the reform of democratic institutions, to move towards greater transparency and raise standards of integrity and accountability; and on the other hand, innovation in the provision of public goods'. However, this element of public innovation, in her words, would not be a question of 'being more innovative out of a technocratic love of pure efficiency, but because of the democratic political demand that requires the construction of its legitimacy through its services to citizens'(2013a:8).

In this sense, the presidential mandate to go 'one step beyond modernisation' and also promote an innovative state at the service of the people would not only aim to equip the state to better adapt to new demands, but also to re-

[4] Michel Bachelet was also President of Chile between 2006 and 2010.

build the relationship between citizens and public institutions. This it would do through 'undertaking a role that suits citizens in the implementation and evaluation of public policies', to 'restore meaning to the social contract, recover the role of the state in developing societies and position people's needs as the topmost priority' (Bachelet, 2016).

To implement this vision, the President made the commitment in her first public account to Congress to create 'the first Government Laboratory in Latin America', as an open and dynamic institutional space that, with a strategy, a methodology and a budget, could bring together 'top talents from the public administration and private enterprises to develop innovations that improve the services that the Government offers citizens, and to find creative solutions to the new challenges of public policies' (Bachelet, 2014:22).

The purpose of this mandate is to give the state greater powers to adapt to changes in an increasingly complex environment in a timely manner, within a context of social dynamism and significant citizen involvement. The mandate includes three key strategic objectives for the transformation of the State:

- **To regain trust in public institutions**: as a global phenomenon, the level of public confidence in the public sector and its institutions has persistently deteriorated. In response, the mandate proposes rebuilding a relationship of trust between citizens and institutions, placing people and their needs at the centre of the processes of innovation.
- **To increase productivity in the delivery and management of public services:** since the 2008 financial crisis, many countries have faced deficits that jeopardise the quality and scope of services, against the backdrop of high citizen demand. Therefore, it is necessary to find ways to enable the State to provide better public services with the resources available.
- **To tackle the complexity of public problems:** society is experiencing increasingly complex, multifaceted and interlinked problems. Therefore, it is necessary to improve the capacity to tackle the growing complexity of public challenges more consistently and creatively.

4.2.2. The institutional arrangement

The task of implementing this mandate was the responsibility of a small policy team at CORFO, the Chilean Economic Development Agency. This team was under the tutelage of the Innovation Division of the Ministry of Economy, Development and Tourism; the Unit of State Modernisation of the General Secretariat of Government; the Unit of Modernisation of the Ministry of Finance; and the leadership of CORFO. In interviews with key stakeholders and decision-makers in the process, it was observed that this early inter-ministerial coordination reflected a political consensus around the importance of supporting public innovation as a government priority. This consensus gave viability to the development and later implementation of this policy.

Public sector innovation as a systematic effort within Government

The prioritisation of public innovation was already evident in President Bachelet's government programme in the form of a Public Innovation Fund for goods and services (Bachelet, 2013a:53) and as an element of her Productivity, Innovation and Growth Agenda – one of the 50 commitments for her first 100 days in office (Bachelet, 2013b:33). This priority would involve a Public Innovation Programme based on the idea that innovation is as relevant to the public as to private affairs and that it can be 'taken into the public sphere as an effective way of creating value for citizens'. The programme would be implemented through the creation of a 'public innovation laboratory' under CORFO, with the objective of 'piloting innovative projects aimed at resolving public sector problems, with an emphasis on delivering better services to citizens' (Government of Chile, 2014:24).

According to one of the directors[5], although the issue of innovation had always been present in the administration, this idea of going beyond the State's modernisation process and proposing a space for inter-sectoral collaboration to innovate in the public sector emerged *'as a way of placing an emphasis on reviewing and renewing the ways in which improvements and refinements were being applied to the way in which the state carries out its task'*. Ultimately, he continued, '*the discussions when we were working on the program had a lot to do with the need to introduce new impetus to the tasks of modernising the state, a product of*

[5] INT 18, September 2017.

the realisation of the stagnation found in many ways of working that made matters very slow, repetitive, not learning from success or failure, and so on' (INT-18).

According to another director[6], it is in the Government that a broader discussion began regarding how to provide this new impetus in a systematically way. He says: *'we in the State need to innovate, but, in order to innovate, it is necessary to create a space as an atmosphere, an environment, that is not embedded in the normal logic of public sector operation. It is here where the idea of creating a laboratory emerges, a space separate from the logic of the normal functioning of the State, where innovation is sometimes very difficult due to all the legal, financial, regulatory and operational restrictions in place'* (INT-17).

This idea is shared by another public official[7]*: 'since the 1990s, innovation within the Chilean State has been a seed that has allowed the creation of new institutions, the introduction of technology and the complete modification of processes and practices deeply rooted in the public sector'.* However, he continues, *'although innovation in the public sector has proven to be a powerful tool for doing things better and placing citizens at the centre of the State's concerns, a great deal of progress is still needed. The key question is not only how we can replicate these cases, but how we can help order and coordinate them so that acts of innovation can effectively have a significant impact on our economy'.* In this sense, he argues, the Government's vision in creating the Government Laboratory was to *'foster the systematic development of public innovation'* (INT-19).

The draft of the agreement that created the Public Innovation Committee –the institutional arrangement given to the Lab–, stated that there is a need to *'create a formal but flexible authority within the administration, which could develop better adaptive capacity in the state, starting from fostering a culture of innovation within public institutions, as well as being able to quickly test ideas, create prototypes and execute small-scale pilot schemes that generate public value and are potentially scalable in the state'* (CORFO, 2014).

Autonomy, flexibility and cross-sector articulation

For Eduardo Bitrán, Executive Vice President of CORFO, an effort of this nature should be capable of a systemic approach to public innovation. This re-

[6] INT 17, September 2017.

[7] INT 19, September 2017.

quires, on the one hand, recovering trust and credibility in state institutions, starting from positioning citizens and civil servants as protagonists in innovation processes and their solutions, and on the other hand, developing a shared vision and systems of coordination with relevant actors in society. According to Bitrán, the institutional challenge for the State is how to overcome barriers such as the high incidence of silos in state bureaucracy, the lack of approaches that consider multiple perspectives, major coordination failures and high social capital problems (Bitrán, 2016).

In synthesis, the design of the Laboratory's institutional structure was inspired by the desire to create an institution capable of:

- Leading a systematic drive for innovation in the public sector.
- Having a systemic approach, that could overcome the traditional logic of the operation of the state by being agile and flexible.
- Being open to incorporating new ideas and multiple perspectives.
- Breaking down the silos of the sState, by improving intersectorial coordination.
- Being open to various segments of society, putting people at the centre of its actions.
- Piloting innovative projects aimed at resolving public sector problems, with an emphasis on delivering better services to citizens.

According to Arros (2016), the best place to create this type of institution in principle, was CORFO, given its experience in the formulation and implementation of programmes geared towards innovation and the generation of entrepreneurial and innovative environments. It also had the administrative capacity to create permanent committees for specific functions, with greater flexibility than other public structures.

Through CORFO Resolution No. 50 a Public Sector Innovation Committee was established (Diario Oficial, 2014) using the legal format of a committee – a cross-disciplinary and intersectoral coordinating entity – where representatives of the private and public sectors meet to tackle strategic tasks affecting the country.

With an original annual budget of around £3.6 million[8] [9], it is directed by a Strategic Board to examine different programmes and interventions.

The membership of the Strategic Board had to bring different perspectives in order to ensure that its actions could be validated and accepted as widely as possible within the State, while also being as appropriate as possible. This is why it sought, from the outset, to coordinate the main institutions that today have formal mandates to support innovation in the public sector but whose actions often require greater coordination. These are:

‣The Ministry of Economy via its Innovation Division. This division is in charge of coordinating the different public institutions involved in the Innovation Policy as defined by the Committee of Ministers.

‣The General Secretariat of the Presidency (SEGPRES) via its State Unit of Modernisation and Electronic Government. This unit is responsible for defining and implementing the Digital Government policy and later became the Digital Government Division of SEGPRES.

‣The Ministry of Finance via its Public-Sector Modernisation Programme. This programme seeks to improve citizen satisfaction with public services through the formulation, financing and implementation of modernisation projects.

‣CORFO, the Chilean Economic Development Agency. Along with providing the Laboratory with its institutional space, CORFO has the strongest links with the country's innovative and entrepreneurial ecosystem.

‣The National Directorate of the Civil Service (DNSC). In charge of Senior Public Management, one of its objectives is to contribute to the process of State modernisation, through fostering the professionalisation of public managers, while also providing a benchmark in matters of employment and the quality of working life.

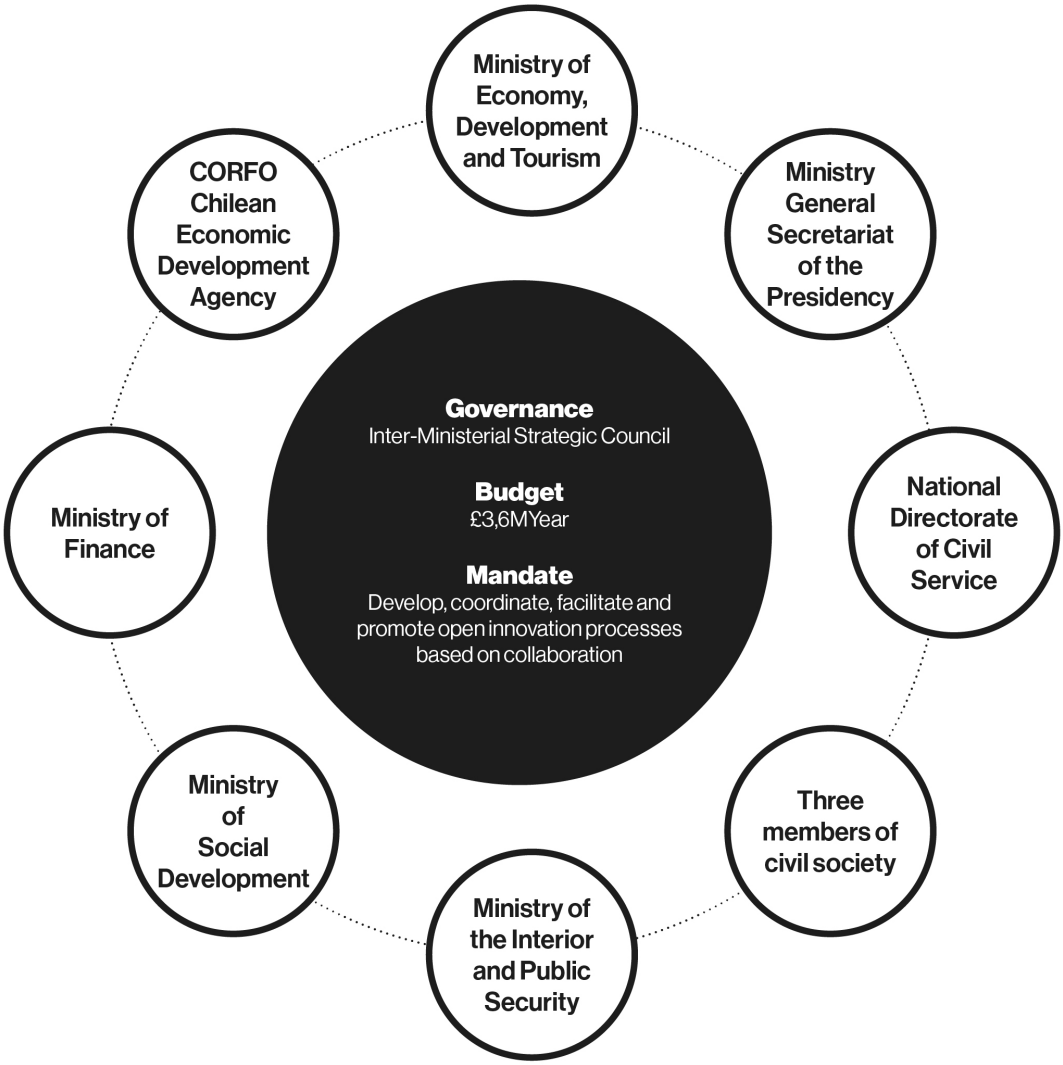
‣These institutions are joined by the Ministry of the Interior, the entity responsible for coordinating the Government's distributions throughout the coun-

[8] 3,200 Million Chilean Pesos approx. (using average exchange rate of 2018)

[9] These resources come from its regular budget and from the Ministry of Economy, Development and Tourism's Innovation Fund for Competitiveness (FIC). This fund was created in 2006 and is the main instrument for providing new and increased resources for the different efforts that the State makes regarding innovation. More in: http://www.economia.gob.cl/subsecretarias/economia/innovacion-2/el-fondo-de-innovacion-para-la-competitividad-fic

try. There is also the Ministry of Social Development and three representatives from civil society.[10]

Figure 4.1: Basic institutional model. Author's graphic interpretation.



In synthesis, as described in Figure 4.1, the policy intent comprised a governance model, in the form of an inter-ministerial board; a budget to be spent, coming from an independent public innovation fund; and a declaration of purpose contained in the political mandate.

[10] At the end of the presidential period, these representatives of civil society would be replaced by the implementation of an Expert Advisory Council.

4.2.3. The brief as a problematic situation in practice

Following the presidential mandate, the task of implementing this mandate fell to a small policy team at CORFO[11], who assessed different conceptual approaches to plan this new institution. NYU GovLab, and MindLab, among other organisations and universities, sent their proposals for the setting up of the Government Laboratory. In this context, together with a small team of practitioners, we submitted a proposal which was eventually chosen.

After expressing interest in submitting a proposal for CORFO's consideration to different public officials,[12] I started research into the policy background through the exchange of policy documentation and informal conversations with different stakeholders in government. Four formal meetings were held with different representatives of most of the government agencies that would later comprise the Strategic Council.

Following this process, my understanding of the problematic situation in practice can be synthesised in five key elements:

1. The Laboratory was conceived as a small programme of the Public Innovation Committee

The original idea, as described in Figure 4.2, considered the institutional design outlined above, but had already defined three operational sub-units: Culture, with a series of programmes to promote public innovation culture internally and externally; Funding, with different financial instruments to promote the programmes; and Projects, with initiatives to foster cross-sector collaboration, including a space for the Laboratory.

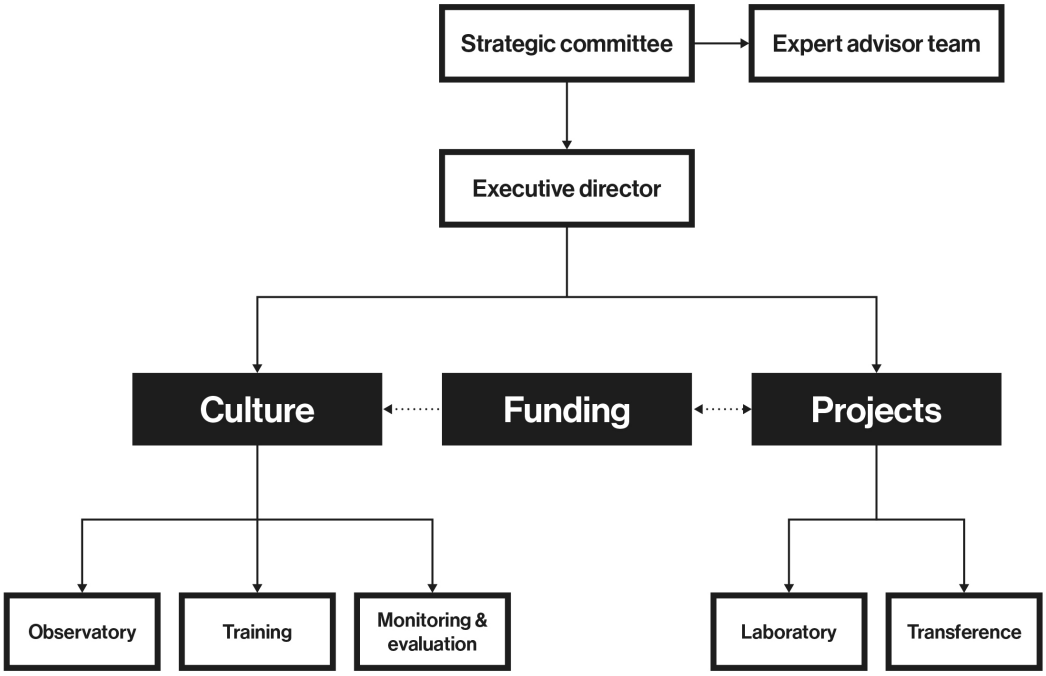
It was clear that the policy team had already started to design the service. However, in their design, the space they were giving to this kind of 'innovation muscle', was under a very conventional and pyramidal organisation chart, where

[11] Also referred to as the Chilean Economic Development Agency. http://www.english.corfo.cl/

[12] A lecture I gave in the School of Design of the Catholic University of Chile in Santiago in June 2014 was crucial for the success of this action. I was invited to Chile as an RCA researcher to introduce the Service Design Programme sponsored by the British Council.

the Laboratory was in the fourth level of the hierarchy, as a 'sub-unit' or programme.

Figure 4.2: First conceptual structure of the Public Innovation Committee. Translation of the original diagram of an internal policy document accessed in June, 2014.



2. There was a need for an 'expert' approach to address the implementation of the Laboratory

It is fair to say that this original position of the Laboratory was not based on a deliberate intention of the team. Rather it was the result of a series of internal discussions about how to implement something that for them was unknown, so it was difficult to address.

Evidence of this are the facts that: first, before work began, the policy team had tried five different models to implement the mandate with no clear consensus about role, position, function or methods[13] (Arros, 2016); second, in the policy document offered as a context for the proposal, the policy team expressed their perception that the Laboratory represented the most 'advanced and complex

[13] Interestingly, all the previous models considered the Laboratory as one unit among others in the organisational chart but in different positions.

elements of the Committee in terms of its development and coordination with different stakeholders' (CORFO, 2014); and finally, they were actively looking outside the Government, for those who could give them an 'expert approach' for the task.

3. The approach to implementation had to be appropriate for the mandate and based on 'best practice'

Although in the internal team there was no agreement on the specific position and functions that the Laboratory should have, there was a clear consensus among the key stakeholders about the citizen-centricity of policy intent and the need to look for an approach that could be considered as appropriate 'best practice[14]' for the purpose –an approach to practice that has been accepted as something that 'works' in supporting public sector innovation processes.

In seeking this approach the policy team was highly influenced by the Report on Innovation Teams, developed by Nesta & Bloomberg Philanthropies in 2014, which shows how the incorporation of innovation teams, units and funds within the bureaucratic structures of the State was becoming state-of-the-art in public sector innovation, together with the use of Design Thinking[15] as one of their key approaches (Puttick et al., 2014).[16]

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[14] 'A working method, or set of working methods, that is officially accepted as being the best to use in a particular business or industry'. Definition of 'best practice' from the Cambridge Business English Dictionary © Cambridge University Press.

[15] In the first documentation received, experiences such as MindLab, Helsinski Design Lab and Design Council are referred to.

[16] According to the Report, these teams take different approaches. However 'by drawing on the disciplines of design and user engagement, open innovation and cross-sector collaboration, and mobilising data and insights in new ways, the i-teams are creating a new kind of experimental government' (Puttick, et al., 2014).

policy document offered as a context for the proposal, the policy team expressed their perception that the Laboratory represented the most 'advanced and complex elements of the Committee in terms of its development and coordination with different stakeholders' (CORFO, 2014); and finally, they were actively looking outside the Government, for those who could give them an 'expert approach' for the task.

4. There was a willingness to try a practical approach focused on concreteness

Although Design Thinking was being considered as valid – but not yet 'best practice' – there was a second element that supported a decision in this direction: the need to produce in the short term something that both aligned all the key internal stakeholders and gave substance to the 'idea' of the Laboratory, so it could be considered something 'real'.[17]

5. As a team we had the legitimacy to act

In this initial stage of the project, together with Juan Felipe López[18] – who later became the Executive Director of the Laboratory for the entirety of President Bachelet's administration[19] – a team was created entitled 'Public Design',[20] to give the approach a recognisable brand.[21]

It was under this brand that during the several rounds of meetings[22] I held, I introduced the use of design in government – based on work at the RCA at

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[17] Or tangible. This 'aim for concreteness' manifested itself in the very early conversations. Since I am also an architect I was asked to submit a proposal to design the actual space for the Laboratory (June, 2014). Later after accepting this responsibility the team was further expanded with a 'proper' architect.

[18] While I was starting my PhD at the RCA, Juan Felipe –a historian by training who had been Chief of the advisory team of a Mayor in Chile, in charge of the design and execution of the municipality's policies– was finishing his MPA at the London School of Economics, which not only allowed us to make a proposal where two ways of understanding public policies and acting in politics converged, but also to launch a practical and intellectual conversation that continues to this day.

[19] The Executive Director was appointed by a public procurement process in May 2015.

[20] Diseño Público was the original name in Spanish.

[21] Originally regarded as an innovation consultancy, after our involvement in the Laboratory, we repurposed the initiative as a blog to reflect on these issues. See: http://disenopublico.org

[22] During the same round of meetings, I was also invited to give a short talk on Service Design to the Unit of State Modernisation and Electronic Government of SEGPRES. Interestingly, two of the attendees of that talk came to the RCA to become graduates of the MA Programme.

the time – with a positive reception. These conversations, together with the social capital I had in the new government[23] and the fact that the research was conducted under the auspices of leading academic institutions in the UK, gave us the legitimacy to act in a matter largely unknown at the time in the context of Design in Innovation. This legitimacy as a team created the opportunity to submit a proposal.

The brief in synthesis

Action research focuses on a 'problematic situation in practice' and its main purpose is to solve this problem and through the solution process, improve that practice (see Section 3.4.2). Applying this approach the problem in practice can be synthesised as:

How to support the design process of the Laboratory as a policy instrument using a design approach? And by doing so, how to improve the design capacity of the team and stakeholders involved through a process of mutual learning?

Table 4.1 offers a series of propositions/objectives to address the issues mentioned in this section. These served as the general framing for the plan of practice.

Table 4.1: Objectives for a plan of practice.

Problem / Need	***Proposition / Objectives***
(1) The Laboratory was being conceived as a small programme of the Public Innovation Committee. This arbitrary definition had the risk if designing something that was not fit for purpose.	To reframe the implementation problem as a design problem focusing on the expected outcomes while considering the policy constraints.
(2) There was a need for an 'expert' approach to address the implementation of the Laboratory and (3) one which was appropriate for the mandate and based on 'best practice'.	To conduct the project using a human centred design approach, referring to known international frameworks in the world of public sector innovation.

[23] As mentioned earlier, I was one of the people in charge of the digital campaign of the President, and because of Juan Felipe's previous position, he knew most of the politically appointed officials of the new Government.

Problem / Need	***Proposition / Objectives***
(4) There was a willingness to try a practical approach focused on concreteness.	To plan the project in a way that can enable the policy team to produce communicable concrete results in the short term.
(5) The team had the legitimacy to act.	To support and expand this legitimacy through the constant engagement with the team and key stakeholders, in a process of mutual learning (from design to policy and from policy to design).

4.3. Understanding the LabGob as a policy instrument

The design of the LabGob as a policy instrument was seen as the design of a public service. This process started with the preparation and later acceptance of a project proposal by the policy team at CORFO in August 2014[24]. The proposal stressed that the Chilean Government had the unique opportunity of creating the first PSI Lab in Latin America at a national level. In order to use this opportunity to make a bold statement of its commitment to public innovation, the Laboratory itself should be the first public service to be created, using an innovative approach aligned with the values of the mandate.

To this end, a human-centred design approach was proposed, to help CORFO provide a useful, meaningful and usable service to the people they intended to serve and by doing so, help them fulfil the mandate and vision for the Laboratory. As Junginger puts it: 'because the mandate of the public sector is human centred, its design principle must be human centred' (2017:15). Hence it was proposed that the process of creating the Laboratory should embrace and communicate this human-centred approach through its multiple functions and in the diverse spaces of interaction with internal and external stakeholders.

Accepting this proposal meant that the policy team at CORFO was willing to adopt a different approach to deal with the early stages of the policy cycle: to help them clarify and validate the policy objectives with the key internal stakeholders; and to question the model they had designed, in order to create something implementable in the short term. The objectives, therefore, were:

- First, to conceptualise the form and function of the Laboratory starting from understanding its key users and stakeholders; then to co-design a service

[24] Once the proposal was accepted, I became part of the small team for developing this task. This team was led by Juan Felipe López, as Project Manager, myself as Strategic Designer, Valentina Arros, Public Administrator and member of staff of CORFO, and Roman Yosif who, with a business degree, was also coming from outside government with an early career in entrepreneurship. Valentina would later develop her own Public Administration Master's thesis on the subject. See: Arros, V. (2016). Roman would later become Executive Director of the Laboratory in 2018 during the Government of Sebastian Piñera, the successor to President Bachelet.

strategy to serve those needs and an implementation route appropriate to the Laboratory's organisational context;

- Second, not only to focus on the policy dimension of the Laboratory as a service but also to design the Laboratory as an experience with multiple touchpoints that would bring usefulness and meaning to the users.
- Third, to prototype and test the validity of the service proposition through a demonstration project before launching the service to the public.
- Fourth, to mobilise people and resources through the development of a 'service in action', using the process to build the legitimacy of the approach and the service offerings.

These four strategic objectives informed the two action cycles of the project described later in this chapter.

4.3.1. Policies and policy instruments

A policy can be thought of as a statement of purpose and a social and political process for addressing a particular issue of public relevance. According to Swanson and Bhadwal (2009), these statements constitute a policy intent that is then implemented 'via policy instruments such as regulatory (for example, laws and regulations), economic (for example, taxes, subsidies), expenditure (for example, research and development, education and awareness, targeted projects and programmes), and institutional (for example, sector strategies) instruments' (2009:17).

Under this very broad definition, the presidential mandate for creating a Government Laboratory was an expression of a policy intent of creating and delivering 'better' services for people, through the improvement of innovative capacity within the State. As seen in Chapter 2, if we follow the idea proposed Junginger (2017) argued that public services are capable of integrating policy intent, policy-making and implementation because they are in fact the embodiment of a policy in action. Thus, the design of the LabGob as a policy instrument could be seen as the design of a public service capable of organising economic, expenditure and institutional instruments, to deliver on this intent.

An adaptive and dynamic policy cycle

According to Swanson and Bhadwal (2009), the policy cycle consists of two main processes: (a) policy design, that is about defining the rules for how the policy instrument is to perform and (b) policy implementation, that refers to the actions of the people and organisations that implement the rules of the policy instrument (2009:17).

Figure 4.3: Policy cycle model (Swanson and Bhadwal, 2009)

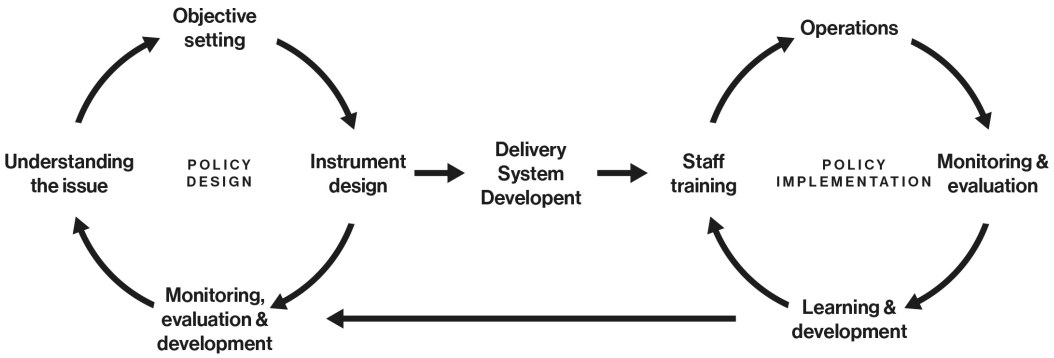


Figure 4.3 shows how both processes are iterative cycles that feed one another. 'Ideally, it starts with understanding the issue as the precursor to setting the objective(s) of the policy. The necessary policy instrument(s) is then designed and an implementation process developed. This ideally starts with staff training to allow operation of the policy instrument. Implementation is monitored and periodically evaluated to learn what works well and what does not, and important improvements are made. Feedback from on-the-ground implementation on whether policy objectives are being met should make its way back to policy designers to better understand the issues and make critical improvements in the design as well as the implementation of the policy.'(2009:17).

This model expresses the idea that policies are dynamic and that they can be modified by their constant feedback loop with reality. This dynamic model, is an abstraction of what an 'adaptive policy' process might look like. According to Swanson and Bhadwal (2009), the concept of 'adaptive policy' was initially developed in the world of environmental policies and international development, for describing policies that can test clearly formulated hypotheses about the behaviour of an (eco) system being changed by human use (Lee, 1993). Adaptive policy is a way of reorienting efforts to cope more effectively with the inevitable un-

certainty and complexity of the development process through an adaptive approach that relies on strategic planning, on administrative procedures to facilitate innovation, responsiveness and experimentation, and on decision-making processes that join learning with action (Rondinelli, 1993).

Swanson and Bhadwal (2009), argued that, although this approach came from a specific area of policy making, there has been a growing acknowledgement since the 2000s that in a complex and adaptive world, policies need to be adaptive themselves, and that 'relying on optimisation techniques to develop policies based on the projections of a single model will produce static policies which make the correct move only for the best estimate model' (2009:17).

This concept is the heir to a long-standing argument that policies be treated as experiments, to promote continual learning and adaptation in response to experience over time (Dewey, 1927, in Busenberg, 2001). However, most of the literature on public sector innovation suggests that this dynamic and experimental logic is far from being a reality. More interestingly, the disconnection between the way policies are designed and how they operate in reality has been one of the main arguments to support the use of design in rejoining these two dimensions through its focus on people, experiences and practice (Bason, 2010, 2017; Hill, 2012; and Burns et al., 2006, among others).

This acknowledgement was particularly important to establish the approach of this research to the problem. The Laboratory, as a policy instrument, was intended to operate in a complex human system –people innovating in the public sector–, with 'improving the adaptive capacity of the State' at the core of the policy intent. Hence, an adaptive, experimental and dynamic approach was needed both for the design of the policy and for its implementation.

An integrative approach for designing the policy instrument

According to Peters and Rava (2017), policy formulation and instrument selection are at the heart of any policy design process. However, 'attempting to understand policy design without understanding the nature of problems or the values involved appears to be shooting in the dark', mainly because 'accepting policy problems as givens does not take into account adequately the extent to which

policy problems are political constructions rather than some objective condition that can be addressed by the proper instrument.' (2017:8).

From a design perspective, Junginger (2013, 2017) suggests that to disconnect the instrument and its implementation from policy problems is also a problem of the position of design in the policy cycle (see Chapter 2). She asserts then that policies –in their design and implementation– are both a design problem and a design activity, representing 'fundamental and connected design problems' and not 'disconnected design activities' (2013:22).

This project was a case in point. The team was asked to design a specific instrument (the Laboratory) for a given policy problem, and the challenge was how to expand the realm of work and by doing so, expand the design contribution to this particular policy design process. To this end, the approach of this research was to frame the problem and expand the scope of the design of the policy instrument backwards into the policy design (Action Cycle 1) and forward into the policy implementation (Action Cycle 2). The intention was to build a comprehensive model of the Laboratory that could work across the policy cycle.

4.3.2. Aligning design and research goals

When using 'research through design' as a methodology, the project has a double purpose (see Section 3.3.1): to deal with a design problem through a design solution, and to deal with a research question through the production of new knowledge (Findeli, 2010). Following this logic, the three research questions of this project were aligned with research goals and design objectives to inform the action cycles. The purpose of this exercise is to give research direction to the design project.

RQ1 – About the integration of design into the politico-organisational context and policy cycle of PSI

What are the challenges and strategies for integrating design in the process of creating and implementing a policy and a service aiming to foster PSI within the Chilean public sector?

This question targets the gap found in previous research on the challenges of introducing and incorporating design more integrally into policymaking

processes and the politico-organisational context and power structures of the public sector.

To address these challenges, the strategy I adopted was to approach the process of creating a policy instrument as a design problem and, by doing so, advance in answering the research question. Following the project framing explained in the previous section this strategy can be unpacked in two distinct objectives for each of the action cycles of policy design and policy implementation.

- **Objective 1 for action cycle 1:** to frame the problem and expand the focus of the intervention from the implementation of the policy instrument with given assumptions, towards the design of the instrument, supporting a re-definition or validation of the needs, problems and objectives.

- **Objective 1 for action cycle 2:** To expand the focus of the intervention from the design of the policy instrument into the systems of delivery and policy implementation through prototyping and piloting the key elements of the service proposition.

RQ2 - About the impact and scale of design as an innovation capability in the public sector:

How can design be scaled as an innovation capability across government so it can increase its impact?

This question is also derived from the challenges of integration described above. However the focus is not on introducing design into this new PSI-Lab, but on scaling its use into the broader organisational context. This second order of integration acknowledges the fact that there is a vast literature on the contribution of design to public innovation in different dimensions. The question then, is not exclusively focused on ‘what else’ can it contribute, but rather what is the value that design could bring to the specific context of the project, so it can be embraced and managed as a core capability and a valid innovation approach within the Chilean public sector.

To address this question the strategy I took was first to understand the value that design could bring to the specific context of the PSI-Lab when embraced as a valid innovation approach, and then observe how it was managed as

a core capability within the offerings of the Lab once implemented. This also can be unpacked in two distinct objectives for each one of the action cycles.

- **Objective 2 for action cycle 1:** To explicitly use design methods and frameworks so as to 'make design activities visible to illustrate how and what value they create for people' (Junginger, 2017), and learn from this experience.

- **Objective 2 for action cycle 2:** To start building a design system for public sector innovation to be used by the Laboratory across all their functions and activities, and by doing so, learn from its value in use.

RQ3 – About the adaptation of design when practised in policy and PSI

What are the distinctive characteristics of public sector 'ways of thinking and doing' that might demand different understandings and new developments in design to better integrate with the dynamics of the public sector?

As per the previous questions' framing, the core component of this project concerns using design in new contexts: integrating design into the policy cycle and scaling it as a core innovation capability in the Chilean public sector. This third question targets the gap found in previous research on the challenges of reconciling design and policymaking approaches as two distinct epistemologies for complementing evidence of different nature and validity when used in PSI. As seen in Chapter 2, the epistemology and practice of design, both expose and challenge the political institutions and policy professionals they seek to change (Bailey and Lloyd, 2016). There is limited research that reflects on how they fit within the instrumental rationality of positivist framings of 'evidence-based' policymaking (McGann et al., 2018). The need for this fit suggests a new challenge of integration for design, that might demand new adaptations and developments in its ways of thinking and doing'.

According to Dorst (2015), when a profession spreads, its practices jump to other disciplines and parts of society. This process occurs in two distinct forms: adoption and adaptation. Adoption is when 'practices, techniques and methods are picked up and applied without substantial change or much thought'. However, 'when core principles are transposed to other fields by practitioners abstracting from everyday design practices and connecting these fundamentals to the corresponding needs in the target field', we need to delve much more deeply

into the practices, and 'adapt this understanding to the new use context' (Dorst, 2015:23).

The strategy I pursued then involved a process of adaptation of design to the particular circumstances, and the needs of the field of practice shaped how it was used and embraced. Following the logic of the previous questions, this adaptation occurred in two dimensions: First, it was related to the changes in my practice and that of fellow teammates through the mutual learning that accompanied involvement in designing and prototyping the policy instrument. Second, it was related to introducing design capabilities as a core component of the Lab's offerings. Here the adaptation happened when expounding this approach and its methods with different people in different contexts.

This strategy can also be unpacked in two distinct objectives for each one of the action cycles.

- **Objective 3 for action cycle 1:** To adapt the practice of design, incorporating policy and public management methods through a process of mutual learning, while influencing the incorporation of design practices by policy practitioners and public managers.

- **Objective 3 for action cycle 2:** To build design learning assets adapted to the local context and prototype them within the different components of the demonstration project.

Table 4.2 gives a summary of the research questions and practice objectives.

Table 4.2: Strategies and objectives of the action cycles.

Strategies	*Objectives AC-1*	*Objectives AC-2*
RQ1 – About the integration of design into the policy cycle		
Strategy 1: To understand and approach the process of creating a policy instrument as a design problem, and by doing so, advance in answering the research question.	**O-1.1:** To frame the problem and expand the focus of the intervention from the implementation of the policy instrument with given assumptions, towards the design of the instrument, supporting a redefinition or validation of the needs, problems and objectives.	**O-1.2** To expand the focus of the intervention from the design of the policy instrument into the systems of delivery and policy implementation through prototyping and piloting the key elements of the service proposition.
RQ2 – About the use of design as an innovation capability in the public sector		
Strategy 2: To understand the value that design can bring to the specific context of the PSI-Lab when embraced as a valid innovation approach and then observe how it was managed as a core capability within the offerings of the Lab once implemented.	**O-2.1:** To explicitly use design methods and frameworks so we can 'make design activities visible to illustrate how and what value they create for people' (Junginger, 2017), and learn from this experience.	**O-2.2:** To start building a design system for public sector innovation to be used by the Laboratory across all their functions and activities, and by doing so, learn from its value in use.
RQ3 – About the adaptation of design when practised in policy and PSI		
Strategy 3: To adapt the use of a design approach in Chilean public sector innovation in accordance with the particular circumstances and needs of the field of practice	**O-3.1:** To adapt the practice of design, incorporating policy and public management methods through a process of mutual learning, while influencing the incorporation of design practices by policy practitioners and public managers.	**O-3.2:** To build design learning assets adapted to the local context and prototype them within the different components of the demonstrator project.

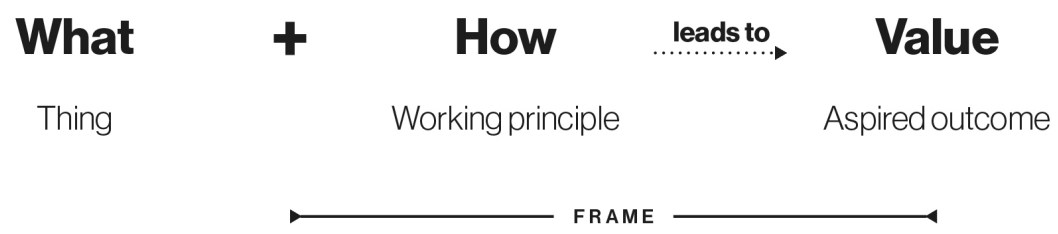
4.4. Designing the service proposition

4.4.1. The policy instrument as a design problem

The first action taken was to understand this problem as a design problem, and to address it from a 'designerly way of thinking'. According to Dorst (2001), when referring to design thinking as a form of problem-solving, there are two main elements of design reasoning: abduction and framing. Dorst proposes that in design abduction, 'the starting point is that we only know about the nature of the outcome and the desired value we want to achieve. So, the challenge is to figure out "what" to create, while there is no known or chosen "how "that we can trust to lead to the desired outcome.' Thus, we have to create, develop and test both a 'what' and a 'how'– or working principle – in parallel and conjunction. (Dorst, 2015:24). In order to do this double creative leap, designers tend to work backwards, starting from the only 'known' in the equation, the desired value and then proposing hypothetical 'whats' and 'hows' to achieve that value (see Figure 4.4)

These hypotheses are 'framings', namely the creation of a (novel) standpoint from which a problematic situation can be tackled (Dorst, 2011). In synthesis, the logic goes: 'IF we look at the problem situation from this viewpoint, and adopt the working principle associated with that position, THEN we will create the value we are striving for' (2011:525).

Figure 4.4: Dorst's model for Design Reasoning (Dorst, 2011)



This general framework assumes a certain 'freedom of perspective' to look into a problem. However, in this case, the project was constrained by different definitions already made in the policy intent, and hence there was a need to align

what was decided with what was unknown at the time to frame the problem in a way that helped to define the space and scope of the intervention. Table 4.3 gives a summary of this exercise.

Table 4.3: Problem framing for the Laboratory before the actions.

What	***How***	***Aspired outcome***
Known (constrains)		Improve the capacity of the Chilean public sector to adapt in a timely manner to changes in the environment and transform itself so as to be able to: (1) Deliver better services to respond to current and future social demands and problems; (2) Contribute to improving trust between public institutions and citizens; (3) Improve the capacity to deal more systematically and creatively with the growing complexity of public challenges.
A Government Laboratory under the legal form of a Public Innovation Committee, governed by an interministerial strategic council with a budget coming from a public innovation fund.	• Leading a systematic effort in Public Sector Innovation. • Having a systemic approach by being agile and flexible. • Being open to new ideas and multiple perspectives. • Break down the silos by improving intersectorial coordination. • Being open and putting people at the centre of its actions. • Piloting innovative projects aimed at resolving citizen-citizen-centred problems	
Unknown (space for design)		
• Who will it serve? Who will be its clients, key stakeholders and allies? What are their needs? • What will be the scope of the problems that it will solve? • What kind of service will it be? • What kind of role will it have inside Government? • Where will it be placed? • What will it be called?	• What kind of projects will it do? • What will be its main functions? • With what kind of team? • Which methods will it use? • How will it use the budget? • What kind of relationship will it have with the different people and institutions it will serve? • What will be the experience of working with the Laboratory?	

Looking at all of the unknowns, the Laboratory could be many things, as there might be different ways to achieve the desired outcome. This is why the problem to solve needed to be reframed and the Laboratory designed accordingly. Following this reasoning, the original brief was changed from:

To implement the Laboratory as a sub-unit of the Public Innovation Committee following best practices in the field.

-to-

What kind of service should the Public Innovation Committee become, so it can contribute to improving the adaptive capacity of the Chilean public sector and equip it to: (1) deliver better services for people; (2) improve trust between public institutions and citizens; and (3) deal with the increasing complexity of public challenges?

4.4.2. Organising a communicable design process

The design process of the project was organised using a known framework for design in service innovation, which is the 'double diamond' model (as depicted in Box 4.1 and Figure 4.5). The model outlines the combined use of divergent and convergent thinking – whose systematic combination is associated with the creative process – in two main phases or diamonds. These are, in a way, coincidental with the ideas of design reasoning explained earlier, in the sense that the diamonds combine the challenge of defining the WHAT and the HOW of a problem in an interactive way (Dorst, 2011).

The stages of each process are aligned in the first two rows. The third row corresponds to what was presented in the proposal and the deliverables are described below each project stage.

Table 4.4: Methodological structure of the first proposal. Author's summary based on the original proposal.

Design Process Stage			
Discover	Define	Develop	Deliver
Policy Process Stage			
Understanding Issue	Objective Setting	Instrument Design	
Action Cycle 1 Process stage and objectives			
A / Discover and Understand Context and Needs	**B / Define the Scope and Conceptual Structure**	**C / Develop a Value Proposition and Design Strategy**	**D / Propose an Implementation Strategy**
(1) Understand the policy intent behind the creation of the Laboratory. (2) Explore the ecosystem of users, clients and interest groups -both internal and external-, with which the Laboratory will engage to understand their needs and expectations, and to determine the set of requirements.	(3) Review and map the international experience to identify what is success and what is failure. (4) Develop a conceptual structure to organise the internal and external requirements and the key learning from the international experience in order to propose a mission a vision and a scope	(5) Develop a value proposition for the Laboratory and a coherent design strategy for all the components of it. This implies taking strategic definitions regarding the key functions, the programmes, the team, brand and identity, location, space and communication strategy.	(6) Define an implementation strategy. This implies giving a sense of reality to the elements designed by assessing their feasibility and developing an. implementation plan.
Deliverables			
Design output 1 The what: mission, vision and strategic objectives		**Design output 2** The how: value proposition, design strategy and implementation plan	

Box 4.1: The Double Diamond as a model for organising a design process

The Design Council in the UK, has been one of the key institutions to support and advance the use of Design and Design Thinking in industry and across sectors, as reviewed in Chapter 2.

In an effort to systematise and transfer the vast knowledge that more than 45 experts –representing various fields of design– had been accumulating in the practical application of their principles to solving complex problems, the Design Council developed a sort of method tool-box called the Methodbank (Design Council, 2003).

A design management model was developed, both to give a sense of unity to the design-driven innovation process, and to organise the different possible methods of application. The model serves as a guide for both method application and the organisation of results.

This model was defined as being a double diamond. As shown in Figure 9.3, the model outlines the combined use of divergent and convergent thinking (whose systematic combination is associated with the creative process), in two main phases or diamonds:

The first diamond is the problem area. This relates to discovering and defining the problem to be resolved. To this end, operations are first developed to be able to explore and understand the users and their situations; then, through a process of summarisation, the true problem to address is defined.

The second diamond is the solution area. Here an attempt is made to find a solution that will effectively resolve the defined problem. To do this, possible solutions are initially proposed based on collective and alternative conceptual development; the solution is then established, based on prototyping, evaluating and packaging a delivery of proven solutions.

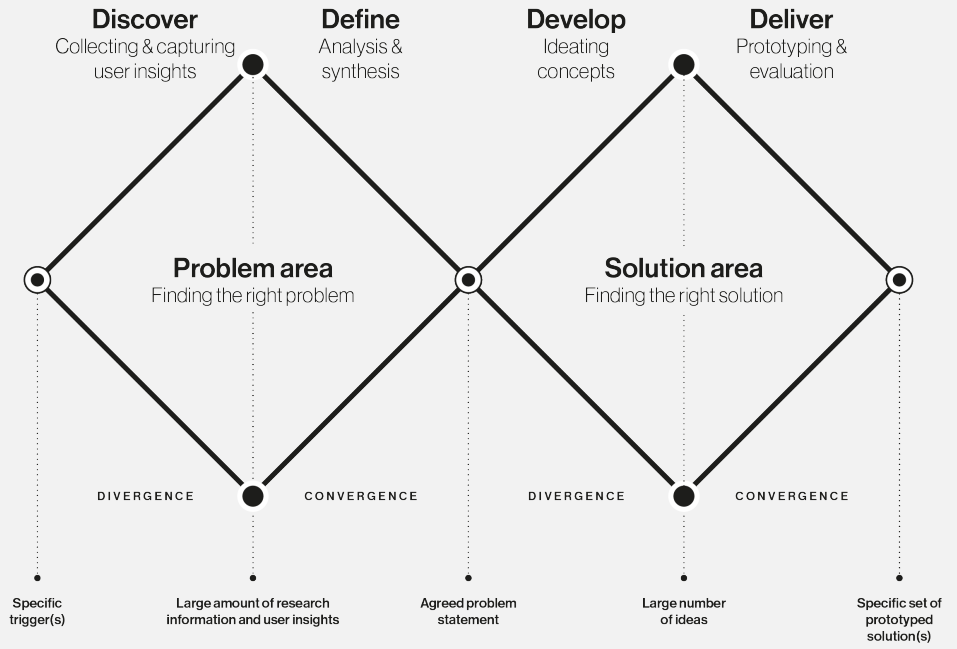
In traditional problem-solving processes, defining the problem often marks the starting point of a project, which immediately focuses on the development of possible solutions and implementation pathways.

This is the main difference between this traditional model and the model proposed in a design-driven innovation process. The latter suggests taking a step backwards in order to properly formulate the type of intervention required to create an impact and then to better define and evaluate its scope before coming up with solutions.

The idea is to understand what is truly necessary, probing what is apparent. In this sense, the first diamond often works in much the same way for many types of challenges, because it is about "designing" the problem we are capable of addressing. In contrast, the contents of the second diamond very much depend on the problem faced, which determines our intervention strategy and the type of expertise needed, whether we are designing a service, a product, a strategy or a system.

It is important to understand that the double diamond model is not conceived as a prescriptive model, but rather as a guide to help manage design resources in the context of an innovation process, and as a tool to transmit and open the process up to the players involved.

Figure 4.5: Double diamond (Adapted from Design Council, 2003)



4.4.3. Orienting design towards public value

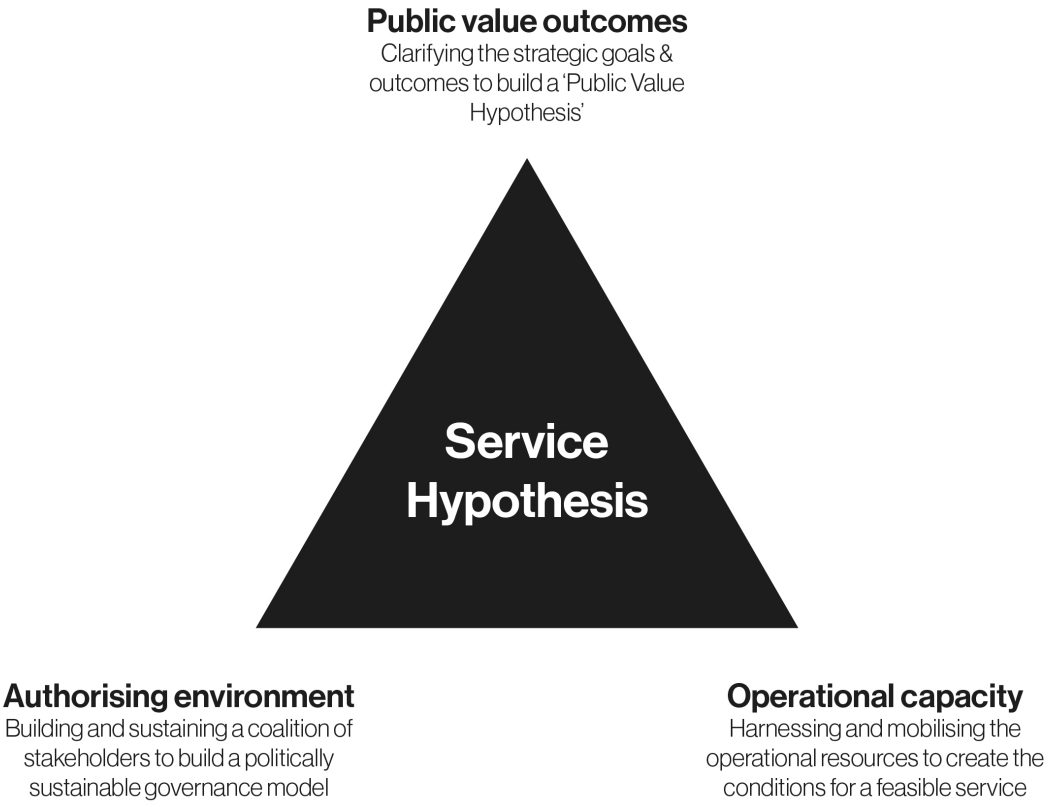
One of the research objectives concerns expanding design practice into the domains of policy and public management. The concept of public value is key for orienting this action. As explained in Chapter 2, according to Benington (2011), the idea of public value comprises two dimensions: first, what the public values (what is useful or perceived as useful by citizens); and second, what adds value to the public sphere (what is useful for society). Introduced by Mark Moore (1995) in the field of strategic public management, the concept of public value originally aimed to build a conceptual framework for strategic purposes for public managers in the same way that the idea of private value did for private sector managers. If public sector innovation is about finding new ways of creating public value, it is necessary to understand the basic processes of how public value is created.

The first step was to refer to the work of Benington and Moore (2011:4), who argue that to develop a systemic approach to public service reform, it is important to consider a 'strategic triangle for public value creation'. Their model proposes that the government's role is not limited to that of a service provider and regulator, but is also as an agent for public value creation. This means, among other things, that government is an entity that is proactive in shaping the public sphere in political, economic and social terms. The strategic triangle is 'three distinct but inter-dependent processes which in their alignment are seen to be necessary for the creation of public value' (2011:5). These are:

- **A clear definition of public value outcomes.** This implies an agreed political definition of the strategic goals and public value outcomes which are aimed for in a given situation and context, together with a set of metrics to measure the expected results.
- **Developing the 'operational capacity'** in and around the organisation through harnessing and mobilising operational resources (finance, staff, skills, technology) both inside and outside the organisation, which are necessary to achieve the desired public value outcomes.
- **Creating the 'authorising environment'** or the necessary political consensus and support to achieve the desired public value outcomes. This would be main-

ly about building, managing and sustaining a network of public and private stakeholders from a diverse set of sectors related to the problem area.

Figure 4.6: Adaptation of the strategic triangle of public value to build the service hypothesis. Adapted from Benington and Moore, 2011



These elements were seen as a type of 'political and operational geography' for the project. The form and function of the service to be designed would be constrained by a negotiation between these three factors: how strong and validated the public value hypothesis[25] is; how politically sustainable the governance model is, and how it can be strengthened throughout the process; and how operationally and administratively feasible the conditions are for creating a service that delivers public value.

Based on this understanding, and as described in Figure 4.6, the practical output of this stage was a service proposition that would act as a working hypotheses of what the service would be, considering these three factors as key strategic objectives for the design process. This hypothesis would later be validated and refined in a 'service prototype' during Action Cycle 2. Under this logic,

[25] To put it in terms of lean entrepreneurship.

the design outputs of the original proposal (Table 4.4) were reframed using the public value categories as:

- **The what:** clarifying public value outcomes through the definition of mission, vision, strategic objectives and a value proposition.
- **The how:** building operational capacity through defining a set of design principles, a design management process with its stages, methods and frameworks, a team to operate and a brand and visual narrative to communicate and engage with the Lab's users.
- **The who:** creating an authorising environment through continuous engagement and dialogue with key stakeholders who could support the Lab's implementation.

4.4.4. The what: clarifying public value outcomes

The mission: innovation through collaboration

Following an analysis of the policy intent, early interactions with the policy team and key stakeholders, and a reframing exercise (see Section 4.4.1), the aspired outcome for the Laboratory was to 'Improve the capacity of the Chilean public sector to adapt in a timely manner to changes in the environment and transform itself so as to: (1) Deliver better services to respond to current and future social demands and problems; (2) Contribute to improving trust between public institutions and citizens; (3) Improve the capacity to deal more systematically and creatively with the growing complexity of public challenges'.

Two workshops were conducted with key members of the Strategic Council to present initial thoughts, understand the political considerations of key stakeholders and develop a general strategy prior to the first official meeting of the Strategic Council.

The main outcome of these workshops was the consensus that in order to advance the intended transformation, it was necessary to develop and cultivate a different paradigm of work within the public sector. The Laboratory should play the role of an independent institution that, in a controlled space, could nurture a new way of working in the State which could then be scaled within and around

public-sector institutions. To this end, there was a need to establish its position both in the policy cycle and in the bureaucratic structure. The strategic position of the Laboratory would determine its relationship with the other public institutions.

This position of the Laboratory was defined as:

An open space: the Laboratory will be an independent institution with the aim of overcoming the State's traditional operational logic, being adaptable and flexible and being open to incorporating new ideas, methodologies, disciplines and a range of perspectives.

A supporter: the Laboratory should not compete with the institutions it serves either in policy design or at an operational level. It does not replace the roles that public officials have at these two levels. Instead, it collaborates with them and for them. The Laboratory is positioned as a pivot between these two axes, experimenting with improvements that can add value to the public sphere.

A coordinator: at the same time, the Laboratory fills a space that does not exist in the current innovation ecosystem. It seeks to be a partner that links different parties for the co-creation of solutions for public problems. This coordination role has three focuses: developing concrete actions, facilitating the meeting and collaboration of entities and agents, and disseminating positive experiences associated with the promotion of innovation.

As a result, the Laboratory defined its mission as to support, coordinate, facilitate and promote open processes of innovation that, focusing on people and based on collaboration, can mobilise multiple players in the co-creation of solutions to public problems to create public value. Its vision is that, while performing its mission, the Laboratory can contribute to building a new relationship between the people and the State.

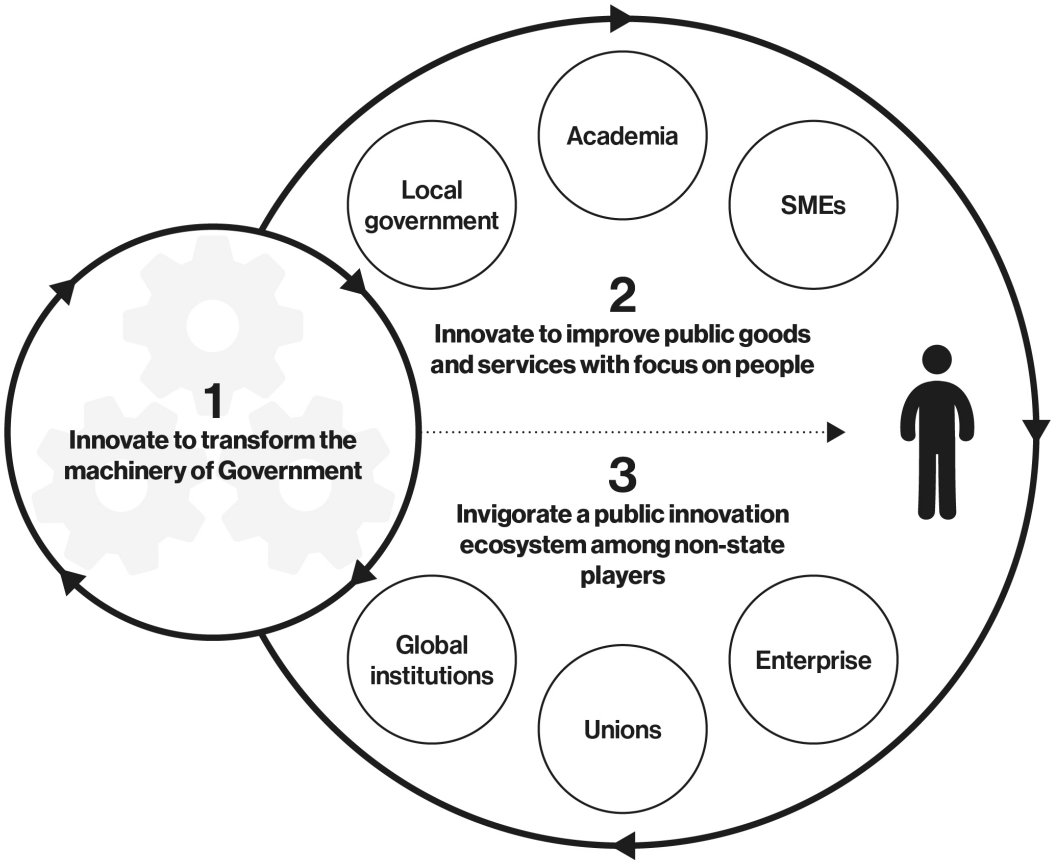
Strategic objectives in three dimensions

With this clear mission and vision, elements of the definition of public sector innovation made by the European Commission[26] (see Chapter 2) were taken into consideration, to start defining the different courses of action for the Lab-

[26] This definition stresses the idea that there would be a kind of innovation 'in' the public sector, which considers both an internal and external focus; and there would be a kind of innovation 'through' the public sector, which promotes innovation elsewhere (European Commission, 2013)

oratory but also, as seen in Figure 4.7, to help produce a 'public innovation environment' that later became an ecosystem.

Figure 4.7: Conceptual understanding of key policy objectives. Author's graphic conceptualisation



These different courses of action took the form of three strategic objectives:

(1) **Regarding the internal functioning of the public sector:** to promote a state that is more productive in its administration, by connecting public institutions, building innovation capacity among civil servants and fostering an innovative culture in order to help transform 'the machinery' of government.

(2) **With regard to what public institutions deliver to citizens:** to improve the goods and services that the public sector provides, through the development of solutions to public problems that place citizens and civil servants at the centre.

(3) **With respect to the environment and the actors outside the State:** to invigorate an innovation ecosystem in a way that promotes and coordinates public innovation processes among non-state players; and which allows the

creation of collaborative and inclusive opportunities and spaces so that solutions to public problems can come from the citizens and various social players.

Figure 4.7 identifies three key segments of users that correspond to different courses of action of the service: 1) public managers and civil servants; 2) citizens or beneficiaries of public services; and 3) key public innovation stakeholders outside the central state, such as local-regional authorities, academia, SMEs, large enterprises, unions and national and international non-governmental institutions.

Value proposition

In the context of this initial phase, the term value proposition was used to refer to 'the bundle of products and services that create value for a customer segment' (Osterwalder et al., 2014). In this sense, the value proposition of the Laboratory should serve these different users in different ways to address its strategic objectives. However, an initial definition was to embrace a B2B2C model, meaning that the main focus of the Laboratory would be to help organisations help citizens by improving their innovation capacity.

The original configuration of the value proposition was highly influenced by the categories of I-Teams described in the Report on Innovation Teams, developed by Nesta and Bloomberg Philanthropies in 2014. Based on an analysis of more than 20 innovation teams, units and funds established by governments around the world, they propose the following categories, according to key activities: Developers and creators, focused on creating solutions to solve specific challenges; Enablers, focused on creating the conditions for innovation from outside government to thrive, through engaging citizens, non-profits and businesses to find new ideas; Educators, focused on transforming the processes, skills and culture of government through providing the insights and knowledge needed to empower others inside government to innovate; and Architects, focused on achieving wider policy and systems change (Puttick et al., 2014).

In the workshops for strategic definitions run with key members of the Strategic Council, where this framework was introduced, we were asked to *'look for an integrative model that can be complemented with the current initiatives and*

also with the key segments to be served"[27] (INT-18), therefore integrating the first three categories.

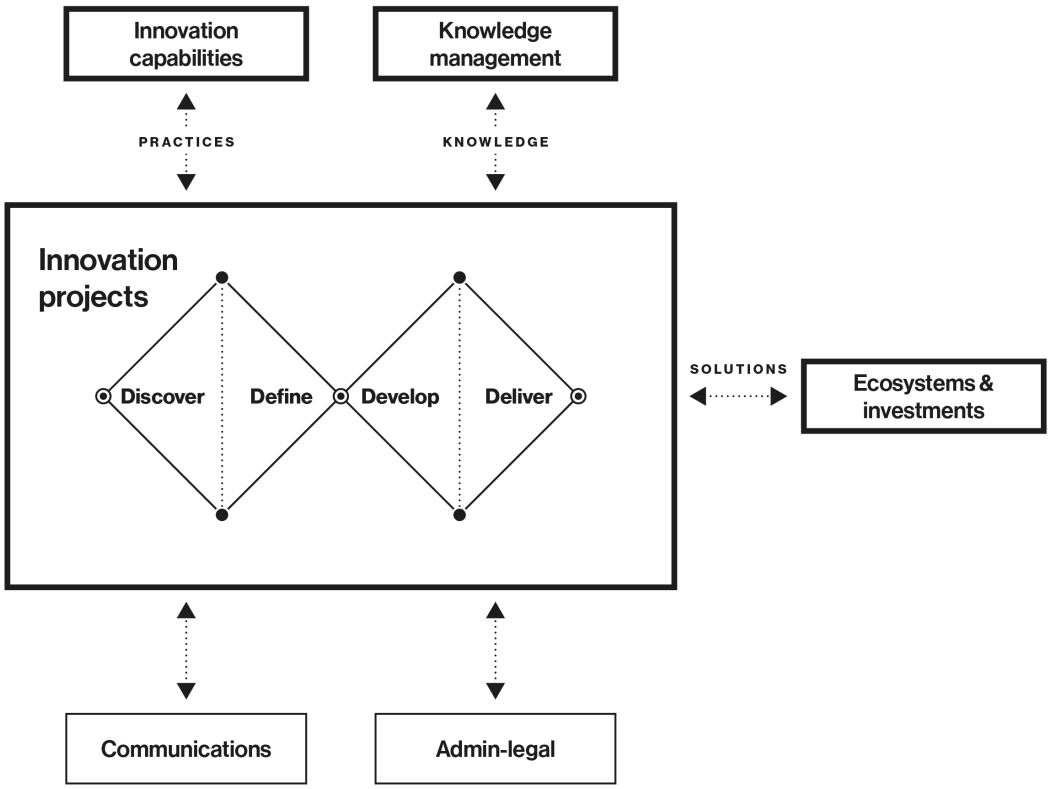
Under this criterion, the first value proposition of the Laboratory was comprised four streams of action:

- **Innovation projects (Developers and creators):** develop innovation projects in highly-demanded public services through human-centred design approaches to create value for society and citizens, while reducing the risks of implementation. This stream will use a design-innovation process (the double diamond) as its core element.
- **Innovation capabilities (Educators):** develop programmes to build innovation capabilities in both civil services and the innovative ecosystem.
- **Ecosystems and investments (Enablers):** open the Government to attract private talent so as to create public value through investing in the development of ideas, solutions and programmes to be run by non-state organisations.
- **Knowledge management:** systematise knowledge from the practice of the Laboratory, share it and build a knowledge management system capable of informing programmes and other policy developments. This unit would later become a transversal activity for all areas and would cease to operate as a unit.

The way these streams of action were organised, as shown in Figure 4.8, corresponded to the theory of change assumed at the time, which was: if the Laboratory can implement a design-driven innovation to address public problems (innovation projects), the process should produce three kinds of output: (a) solutions that can be transferred to third parties so they can be scaled (ecosystem and investment); (b) new knowledge about public problems, that can inform new policies (knowledge management); (c) new practices by civil servants, that can later inform the creation of skills programmes to support more projects in other areas (innovation capabilities).

[27] INT 18, September 2017.

Figure 4.8: Adaptation of the first innovation model of the Laboratory (January 2015).



The model needed the support of two key areas: a communications unit, with the task of informing, educating and diffusing the work of Laboratory, creating a 'new culture' so as to build a network – or 'tribe'– of allies to support the 'adoption' of this new way of working;[28] and an admin-legal team, with the task of helping deal with the bureaucratic 'structure', framing our programmes in legal terms so as to open doors inside the apparatus and give viability to the proposals.

Reflecting back, there were at least four key assumptions of this 'theory of change' underpinning the strategy:

‣The key activity of the Laboratory would be as 'developer and creator', using an open, collaborative and problem-oriented process (as opposed to a closed, expert and solution-oriented one) as the core element of the strategy. It expresses the intent that the Laboratory is about understanding public problems, is about collective action, is happening from the start, and is an opportunity to attract people to participate. It does not have the answers, but rather helps to propose the questions.

[28] The terms 'adoption' and 'tribe' are used to express the start-up logic that this project had at the beginning.

‣To use a design-driven innovation process (the double diamond) was the most appropriate means of organising a collaborative approach to creating people-centred solutions. It makes explicit the focus on people and their problems and, by dividing the process into stages, it acts as a point of reference for all the parties involved to contribute at different moments, delivering concrete outputs which could be more readily assessed.

‣To expand the outputs of the process beyond the 'solutions' would give the Laboratory the space to define its role according to whatever output was more valuable in the system after testing the strategy. This would decrease the risk of being assessed by just one KPI (the solutions).

‣To establish a strong communications unit at the same level of importance as the admin-legal unit would give the ability to make a difference from the beginning, with regard to other public services that had an integrated communications strategy within their hierarchy[29].

4.4.5. The how: building operational capacity

Building operational capacity refers to the process of harnessing and mobilising operational resources to create the conditions for a feasible service. Since we were creating an organisation with a given budget and formulating a value proposition around a design process, this task was mainly concerned with developing a strategy for 'the effective allocation and coordination of design resources and activities to accomplish a firm's objectives' (Olson et al., 1998).

In this case, the operational capacity had to do with organising design resources and activities of the Laboratory, including the method and its activities; the team performing those activities; and the brand and story that would serve as the main communication asset at this stage.

Design principles

The design, management and exploitation of the Laboratory's resources, would be governed by a set of design principles that were established in the workshops referred to earlier. These were:

[29] Most public services of a similar size, have to follow communications directives from above. In this case, was a major challenge to secure the independence of the Laboratory from CORFO, its parent organisation.

- **Focus on people's problems and capabilities:** to start any design activity with the double mindset of thinking 'what problem is addressed for whom?' and regarding people not just as receivers of design outputs but as co-creators. This means considering what they could contribute and how the Laboratory might facilitate that contribution.

- **Interdisciplinarity and collaboration:** to plan any design activity considering multiple perspectives and providing explicit spaces and conditions for collaboration.

- **Policy alignment and political awareness:** to consider in any project, how far it is aligned with the policy intent and seek compromise from the leading political authority in the field.

- **Orientation to action and delivery:** to focus on delivering tangible outputs along the process so as to demonstrate the concreteness of the approach and give reassurance that progress is being made.

- **Attention to quality:** to propose a new level of quality for the public goods and services that the Laboratory will provide.

This last element was particularly important given the need to build legitimacy for the Laboratory. On the basis of various conversations with political officials of the new Government, a central idea in their political project was to recover 'the Public'[30] *'as a fundamental value to move towards a cohesive society that is preparing for a next step of development'*[31] (INT-20). The value of the public in the context of innovation to improve government management is reflected in the aspiration of a 'new level of quality'.

This idea became increasingly relevant during the course of the project, as the search for a 'new quality' of the public was perceived as one of the main drivers for the adoption of design within the organisational environment.

Towards a design-innovation management process

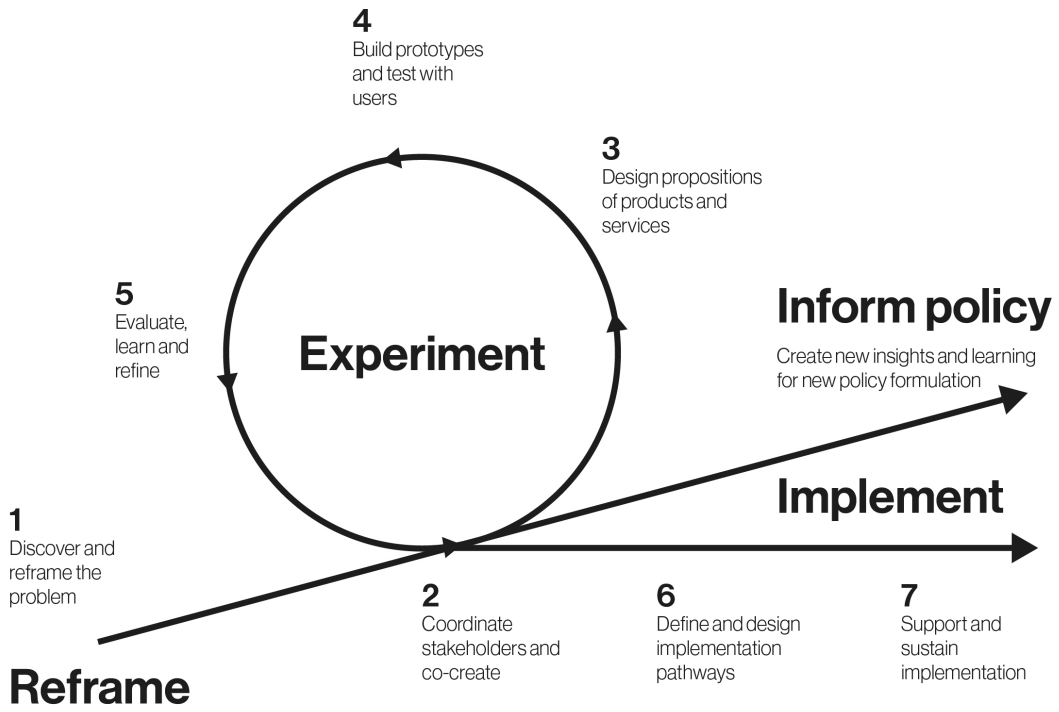
As mentioned earlier, the core element of the strategy is a design-driven innovation process. Looking back, this has been the element that has undergone

[30] This term in Spanish 'Lo Público' refers more to the matters and values of the public sphere rather than to 'the people'.

[31] INT 20, September 2017.

most changes during the four years of this study[32]. This arose because of recurrent confusion between the design process (or organisation of methods to arrive at a desired end) and the innovation management process (or organisation of resources, activities and deliverables across the innovation process).

Figure 4.9: Adaptation of the first design-innovation model of the Laboratory (December 2014).



At the start, the 'double diamond' was seen as the easiest way to organise a communicable design process, explaining what the Laboratory would do and also making sense of its stages. However, it was not enough to explain the range of activities that the Laboratory would undertake to create innovation solutions that could actually work and be implemented. This is why the team proposed its own innovation process to guide the development of projects, and consider both dimensions.

Figure 4.9 and Table 4.5 outline the Laboratory's first innovation process, consisting of three macro phases – Reframe, Experiment and Implement – and seven stages.

[32] See Chapter 6 for the evolution of the model.

Table 4.5: Stages of the innovation process (LabGob, 2014).

Macro-Phase	*Stage*
Reframe	**Stage 1 - Discovering and restructuring the problem:** To create a problem profile out of a public challenge that allows a project to be formulated. The deliverable was a brief validated by the 'project owner' to start the project.
	Stage 2 - Coordinating actors, co-creating ideas: To involve users and stakeholders in the validation of the identified problem and in the co-creation of solutions, producing a portfolio of alternative ideas to solve the problem.
Experiment	**Stage 3 - Designing product and service propositions:** To design a strategy for intervention and to develop proposals for products and services based on the ideas generated in the co-creation phase. The deliverable was a strategy and prototyping guide.
	Stage 4 - Building prototypes and testing them: To test propositions with users and in their context to assess their desirability, viability and feasibility. The deliverables were the prototypes in action.
	Stage 5 - Evaluating, learning and refining: To evaluate the results of the prototyping stage and decide the next step. The deliverable is a decision and a plan. As described in the diagram, depending on the results of stage 5, the cycle of stages 2, 3, 4 and 5, could be repeated.
Implement	**Stage 6 - Defining and designing implementation paths:** To develop together with the project owner, the best way to implement the proposition. The deliverable is an implementation plan.
	Stage 7 - Supporting the implementation and scaling: To support the public institution in the implementation.

This general model was used during the prototyping cycle, after which several changes occurred that are explained in Chapter 6. However at this stage, it helped organise all the activities of the Laboratory during the first six months.

The team

The Strategic Council proposed the forming of a team which would comprise nineteen people organised in four areas: Project Unit, Promotion and Skills, Learning and Management Support. The relevant element to note at this stage is that six of the nineteen would be designers and new public service roles were created, such as a Service Designer and a User Researcher.

This original structure would be developed during the next cycle, prior to holding an open recruitment process. This process is explained in the next section.

The brand, story and visual narrative

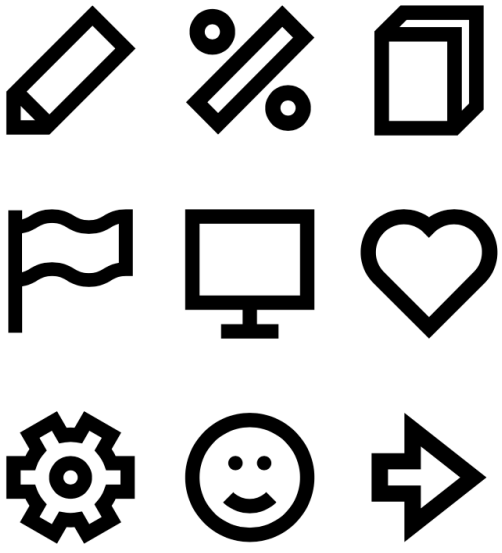
The creation of an imaginary, significant and recordable experience of the Laboratory would later become one its key assets. To have an image of its own, distinct from the Government and more 'modern' would allow engagement with different stakeholders from distinct symbolic positions. The first step in this process was the creation of a brand. Cristian Ordoñez, a Chilean designer who at the time was working as Art Director of Brice Mau Design, was commissioned to undertake this task independently and remotely.

The job was to create a brief and later use the brand guidelines to create the experience that is explained in the next section. The brief for the branding stressed that it should avoid the language of advertising but rather *'express the image of the public institution of the future'*[33] (INT-3). It should address the Government's official brand, but propose something different that could be identified with the Laboratory's new approach.

At this stage, the name of Laboratory became 'Laboratorio de Gobierno' and, to avoid the use of acronyms, the short version would be 'LabGob'. The logo is presented in Figure 4.10. Although the brand was intended to work across all the project's design assets, at this stage the LabGob was still an idea. Therefore, a short video was created to communicate the project's intent and help differentiate us from the 'traditional' or day-to-day public services. In retrospect, the main value of the video was to attract designers and non-state institutions to come and work with the Laboratory.

[33] INT 3, January 2016.

Figure 4.10: The logo and proposed iconography of the LabGob (Cristián Ordoñez, Feb 2015).



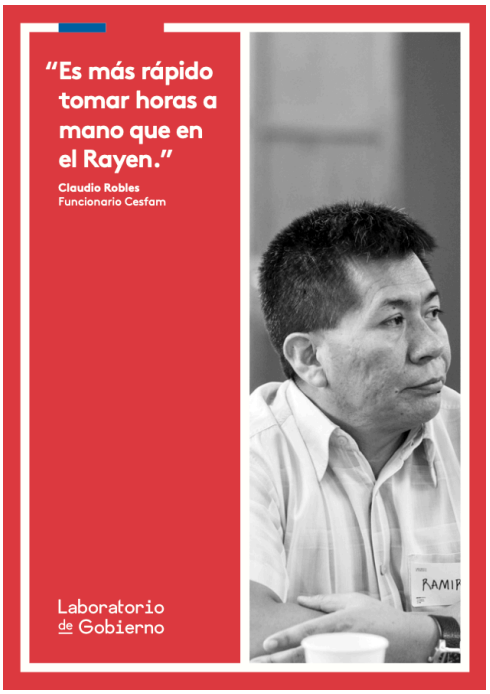
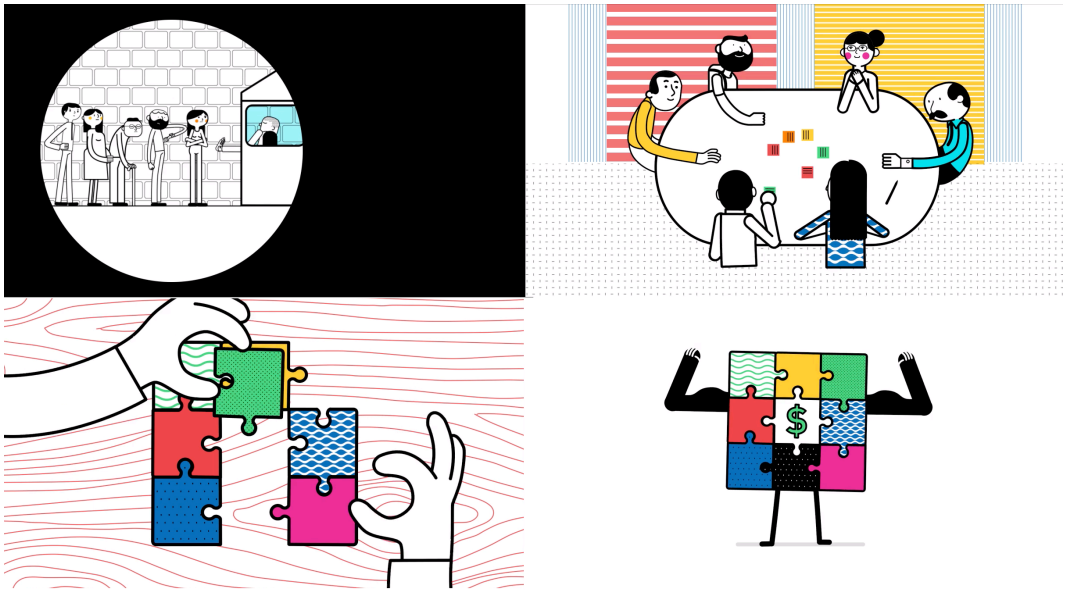


Figure 4.11: Stills from the video of the service proposition (LabGob. Feb, 2015). The full video can be seen here: **https://vimeo.com/473962926/89e837af54**



4.4.6. With whom: creating an authorising environment

During this first process of practice, there was a need to build legitimacy to act on such a scale. This meant two things at this stage:

First, was to explain and win support for the approach from key stakeholders. Apart from the two strategic workshops held with members of the Strategic Council, there were a total of 26 bilateral meetings and conversations with representatives of ministries/services and members of the Board (internal) and 34 meetings with national ecosystem actors including universities, consultants, academics, and innovation centres (external). The objective of these meetings was to inform about the Laboratory and ask about needs, thoughts and public sector innovation. These meetings were informal but noted as part of the process and incorporated into the summary delivered to the Strategic Council. However, the most important element of this engagement was the first network of supporters and potential users of the Lab, with whom we later started working in the demo project.

Second, was to establish a continuous connection and engagement with an international community of practice around PSI-Labs and Public Innovation.

This helped the implementation team first and the LabGob later, to validate and enrich the strategy. Some of the actions during this stage included:

▸Inviting Christian Bason –then head of Mindlab– to Santiago to talk about his experience and run a session at the Ministry of the Economy. This was relevant because it identified 'human-centred design' as an appropriate method for the Chilean Laboratory given its alignment with the political mandate.

▸Starting a collaboration with Nesta, who later went to Chile to run a training programme during the second cycle and act as an external expert to evaluate some of the programmes[34].

▸Establishing a close relationship with the OECD. This started by attending the conference 'Innovating the Public Sector: from ideas to impact' organised by the OECD in November 2014. Myself and Juan Felipe went there representing the Chilean Government. This was extremely relevant because our presence was official and gave an opportunity to meet with key actors in the field such as Geoff Mulgan from Nesta, Marco Steinberg from the Helsinki Design Lab, Alex Roberts from the Australian Lab, and Marco Daglio from the OECD, among others. These meetings provided an opportunity to share the first draft of the service hypothesis and receive feedback and support. Later work continued with the OECD both organising a conference[35] in Chile as a closing event of the first year of the Laboratory and also as a key partner for the capacity-building programme. The relationship with the OECD was a key factor in strengthening the legitimacy of the Laboratory at an institutional level, which led later to collaboration with some of the institutions to evaluate the different programmes of the LabGob in 2018.

[34] See: https://www.nesta.org.uk/report/experimenta-building-the-next-generation-of-chiles-public-innovators/

[35] Later in 2016 I helped organised the international conference Future State 2016. This was a partnership between OPSI and the LabGob. See Rebolledo, 2016.

4.5. Implementing the LabGob through prototyping a Demo project

In the second meeting of the Strategic Council, in January 2015, a plan for the implementation stage was presented and approved. A key element of the plan was to develop a demonstration project or Demo for the innovation projects unit. This Demo involved carrying out a simple project, going through the main stages of the life cycle set out for the unit and using this process and its results to inform the first versions of all the units of the Laboratory.

The aim was to trial the service strategy by learning from its use in a real context. The Demo needed to meet the following objectives:

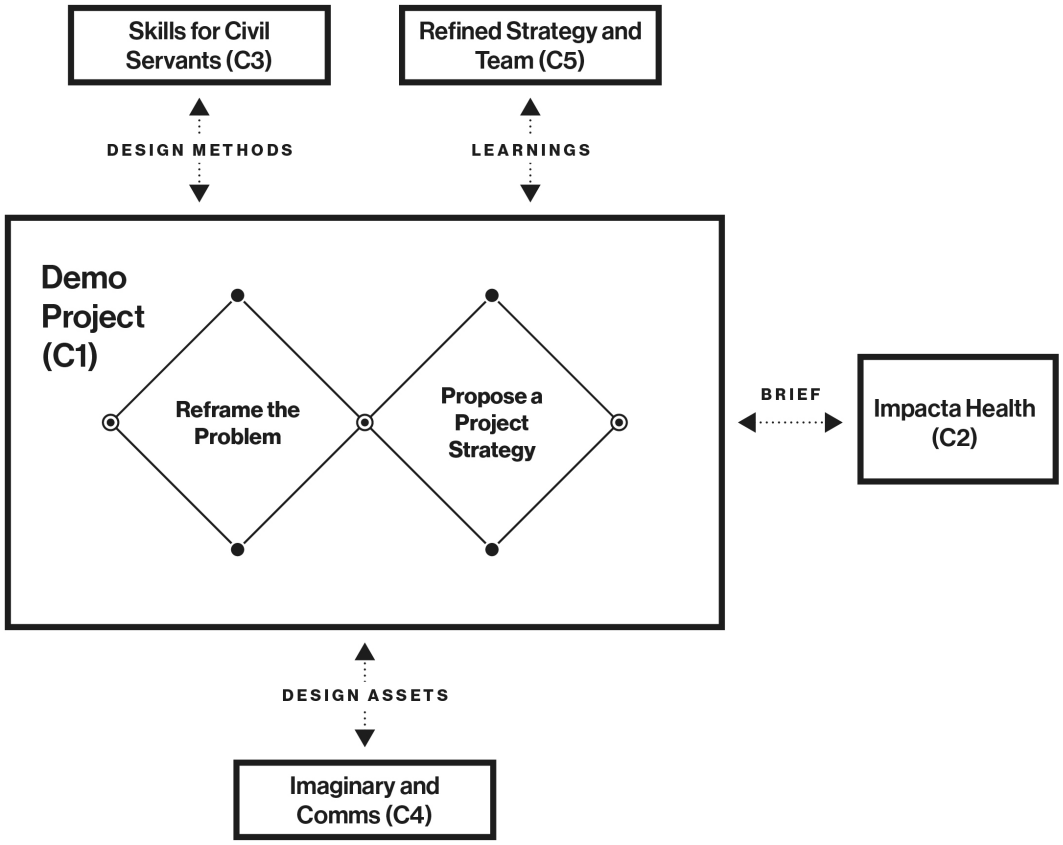
- Test and fine-tune the methodologies defined for each stage of the life cycle of innovation projects.
- Produce results for each stage that could be used to convey the type of work to be carried out by the Laboratory, building a narrative that allows a story to be told through its methods, processes and results.
- Systematise the process in order to provide a useful resource for the Laboratory's internal team in developing the second project and the first version of the skills programme.
- Produce a brief, based on the experience, that could serve as a starting point for the investment and ecosystems programmes.

The project at this stage was organised into five components, each one corresponding to prototyping and refinement of the different areas of the Laboratory's strategy. Following the model developed during the previous stage and presented in Figure 4.8, the five components, correspond to each unit.

Figure 4.12 illustrates how the Demo (C1) would act as the dorsal spine of the process and by focusing on one project, produce as outcomes: the brief for a solution for the first open innovation challenge of the investment and ecosystem area, Impacta Health (C2); design methods tested in action, to inform the first skills programme for civil servants preparing new projects (C3); serve as a sand-

box for developing the vision for the communications area (C4), offering the first assets to build a communications strategy; and produce learning from the design process in action, to inform the refinement of the strategy and the recruitment of the future team of the LabGob (C5).

Figure 4.12: Action process for AC-2 with five components



4.5.1. The Demo project

Redesigning access to primary healthcare in Recoleta

The project was about 'Redesigning Access to Primary Healthcare'. The initiative was carried out jointly with the Ministry of Health, the Municipality of Recoleta, Quinta Bella CESFAM[36] (Family Healthcare Centre), and later with the North Metropolitan Health Service. This project arose out of a concern to strengthen the family healthcare model in Chilean primary healthcare. For this

[36] Figure 5.12.

purpose, it was decided to use access to healthcare in Recoleta's primary care centres as a case study.

Regarded as a pioneer, especially in public health - from its regional teams to Chile's first municipal community pharmacy - the Recoleta Municipal Government Programme 2013-2016 had the primary objective of caring for the health of its population. To achieve this, it sought to facilitate access to healthcare and jointly create solutions with the community to respond to their needs. The main problem was that despite the increase in resources and the development of strategies within the CESFAM,[37] there were still important unresolved problems in the municipal healthcare system, especially regarding the provision of medical appointments.

The challenge was 'to improve the delivery of medical appointments in Municipality of Recoleta doctors' offices, with a focus on older adults and the vulnerable population'. The challenge profile specifies:

'The delivery of medical appointments in doctors' offices violates the dignity of the most vulnerable people, mainly the elderly population. They arrive at the doctor's office at 6 a.m. to have an appointment that day. Approximately 40 arrive for 20 appointments and the remaining 20 then need to come back the next day to repeat the procedure. Some municipalities - Recoleta included - have experimented with different solutions (more doctors, process re-engineering, etc.) all without success.

- What the Laboratory should explore: new models for the delivery of medical appointments that are efficient, of good quality and have the user in mind.
- Expected achievements: that citizens who need to be seen at a doctor's office in the municipality receive an actual appointment when they will be seen.[38]

In general terms, based on the development of the stages of the proposed methodology, as a final result, the Demo should deliver a prototype solution to the challenge and routes for implementation.

[37] CESFAM: 'Centres of Family Health'. These centres are similar to GP clinics in the UK.

[38] From the challenge profile submitted to the Lab.

Box 4.2: Selection of public challenges

To choose the first projects to be undertaken by the Laboratory, the team carried out a process of exploration within public institutions between November and December 2014 through a qualitative process. Out of a total of 23 ministries in the Government, 15 were prioritised. We established six selection criteria, based on the design principles:

1. **Programmatic relevance:** how important and aligned with government priorities is the challenge?
2. **Institutional commitment:** how committed to the challenge are the counterparts and how far is the political authority involved?
3. **Centred on the citizen:** how citizen-focused is the challenge? (external vs internal improvements)
4. **Not contingent:** how contingent is the issue? The approach was to avoid solving a crisis but rather focus on problems that could let the Laboratory innovate with less political pressure
5. **Important for public opinion:** how important is the subject for citizens and public opinion?
6. **Controlled complexity:** is the topic too difficult to address? Does it have many elements and players? The idea was to narrow the scope for the early projects.
7. **Multi-stakeholder:** does the challenge involve more than two and less than five key public players? The Laboratory intended to test cross-sector collaboration, so there was a need to have more than one player.

The process consisted of five stages. Following this process, of the 71 topics raised, 28 were excluded because they looked for specific developments or management rather than processes of experimentation to generate solutions. This left 43 challenges, of which 20 were selected under a ranking method of ratings following the criteria. The Strategic Council then selected 12, one for starting a Demo and 11 as a 'bank' of challenges with which to start the work of reformulation and understanding in parallel.

The process in practice

The project was to be developed following the three first stages of the model[39]: (1) discovering and restructuring the problem; (2) coordinating actors and co-creating ideas; (3) designing product and service proposals. With the decision made, the implementation team of the Laboratory was expanded from five to eight, of whom five were designers, three social scientists and one tech developer[40].

Table 4.6: Activities and results of the Demo project

Stage	*Activities*	*Deliverable*
(1) Discovering and restructuring the problem	• User research: 1 Discovery workshop with users; 10 sessions of participant observations; 65 interviews with users and public workers • Understanding the policy area: 7 meetings with experts; 6 weeks of data analysis; desk research on the policies involved • Reframing the problem: User journeys; 'personas'; problem statement	**Reformulated problem and design brief**
(2) Coordinating actors and co-creating ideas	• 4 co-creation workshops (with users, doctors, public workers and public managers) • 8 meetings with experts • Development of a portfolio of ideas and interventions	**Portfolio of ideas and spaces of intervention**
(3) Designing product and service proposals / strategy	• Review of international experience • Review of user profiles and stories • Conceptual framework • Profile of projects	**Service proposals and actions**

The whole project can be reviewed in Appendix 1. However for the purpose of this thesis, a synthesis of the results is offered., For phase 1, the double diamond model set out in Table 4.6 was loosely followed, delivering the three results. This stage entailed a design process lasting over six months, during which

[39] See Figure 5.7 for the model of the process.

[40] The additions were: Design Research Consultant, Service Design Consultant, Design Manager, Communications Manager, Graphic Designer, human factors research support, audio-visual recording and editing, web design and development.

there were field observations, interviews and workshops with users and officials, workshops with managers and meetings with experts.

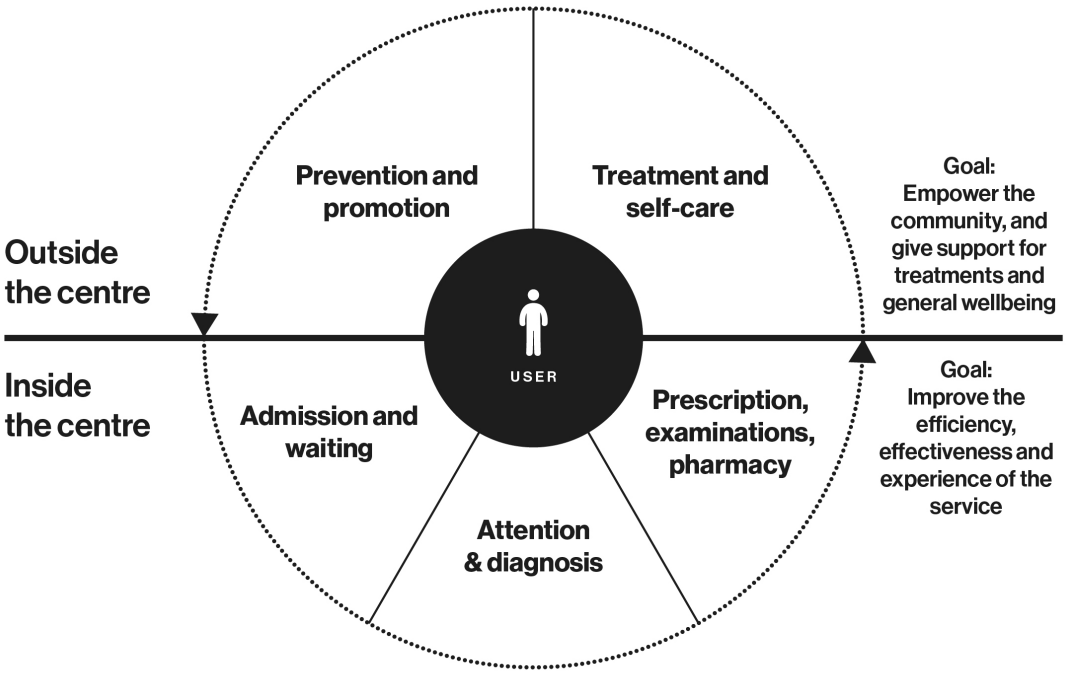
Results and key findings

During this process, it was acknowledged that the queues were a symptom of a major problem: a poorly-formed relationship between the logic that governs services (supply) and the motivations and problems of the users (demand). On the one hand, the service did not know the reason why people had requested a medical appointment, and therefore they could not determine whether an appointment was the solution to their needs. In addition, the order of arrival was prioritised over need, which is why sometimes people with a pressing medical need were left without an appointment, while others, who could have waited, were seen because they had arrived earlier.

On the other hand, there were the users' problems and motivations. People had to attend in person to ask for an appointment and receive medical advice, instead of having the opportunity to have their needs resolved without being seen by a doctor. Users also expected a more comprehensive approach, not just a clinical one. People with a high rate of morbidity consultations who also had psycho-social diagnoses were identified, requiring support that could not be provided by the health centre. This was made worse by the lack of knowledge on the part of the users regarding the provisions and how the service worked. As there was no clear access to information, there was a distrust in the service, which eventually led to the experience being perceived as negative.

The approach of the team was to understand these problems using a conceptual framework of the primary care cycle. In Figure 4.13 the service is modelled as a cycle. In this cycle some components are outside the service (prevention and promotion, treatment and self-care) and some that are inside (admission, attention and prescription). In this abstraction, the goal inside is to improve the efficiency, effectiveness and experience of the service; and outside is to empower the community, and give support for treatments and general wellbeing. Under this logic, the strategy was to understand all the accessible interventions in the context of the cycle of care, both inside the centre (how to improve admission) and outside the health centre (how to bring health closer to people).

Figure 4.13: Conceptual model of the primary care cycle (LabGob, 2015)



Following this general approach, the Laboratory decided to divide the project in two: internal and external dimensions.

For the internal dimension, the project would become a project for the 'Innovations Project Unit' with the focus on redesigning the admissions service to improve efficiency, effectiveness and experience. This would have a strong focus on internal processes and would be developed in close alliance with the key internal stakeholders.

Later in the year, the Laboratory started a specific project to address this internal dimension, creating two solutions that were implemented in Quinta Bella. The first was an appointment system, including a platform with the user's medical information to provide appropriate guidance. The second was a health centre schedule synchronised in real-time for appointment scheduling. With regard to the on-site experience, there was a categorisation and standardisation of graphical language, including improved signage and information related to the health centre. In addition, a digital device was installed to give people their turns in various services (information totem).

The prototypes were designed to be tested in a 'living laboratory', an experimentation and co-creation concept where ideas are tested in hypothetical and/or ideal scenarios, with the participation of users and/or employees. The ob-

jective is to evaluate and perfect ideas, products or services, so as to learn whether the project can be applied in real-life environments in the short or long term. The project managed conceptually to define a new user experience for CESFAMs. This achievement was reflected in a report for the management of the municipality, which was also used as a resource for the Primary Healthcare Division of the Ministry of Health (MINSAL).

For the external dimension, the project would become the first open challenge for the 'Ecosystems and Investment Unit', calling for solutions in the area of prevention and telemedicine under the question of how to bring health closer to people. This would have a strong focus on aligning internal stakeholders with external entrepreneurs.

It was thanks to this primary healthcare project that the Government Laboratory was able to experiment and test its own working methodology. This project was therefore a very useful trial for how a Laboratory should function within government, a lesson that paved the way for the design and implementation of subsequent projects and initiatives.

A synthesis video of the process can be seen here: **https://vimeo.com/473963092/9591e591ce**

Figure 4.14: CESFAM Quinta Bella (LabGob, 2015)

Figure 4.15: User Research in Quinta Bella (LabGob, 2015)

Figure 4.16: Discovery workshop in Quinta Bella (LabGob, 2015)

Figure 4.18: Co-creation workshop with workers and doctors (LabGob, 2015)

Figure 4.19: Co-creation workshop with users (LabGob, 2015)

Figure 4.20: Staff from LabGob and Quinta Bella (above) and presentation with the Minister of Health (LabGob, 2015)

4.5.2. Open innovation for public problems

The Ecosystems and Investment Unit was focused substantially on one particular objective, namely to 'invigorate an innovation ecosystem, which allows the creation of collaborative and inclusive opportunities and spaces so that solutions to public problems can come from the citizens and various social players'. In the first versions of the strategy this area was not considered as such. However, later in the process the team realised that there was a need to have a specific unit that could focus on:

- Developing a clear strategy to manage the investment of the Laboratory in innovative solutions, and the need of doing this at scale, by introducing new mechanisms for the promotion of projects beyond the capacities of the internal team.
- Helping to manage the complexities generated by different political visions, to promote public innovation projects.
- Strengthening the visibility of the Laboratory at scale among the different players, internally and externally.

In pursuit of these objectives, two main theoretical frameworks for building the strategy were considered: 'open innovation', as a general model offering an alternative mechanism for the development of innovation projects; and 'customer development', as an entrepreneurial approach focusing on people's problems as a driver for entrepreneurial processes.

Open innovation in the public sector

The term was originally made popular by Chesbrough (2003). Looking at how innovation happens within companies' R&D processes, he defined it as 'a paradigm that assumes that firms can and should use external as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology', combining those ideas 'into architectures and systems whose requirements are defined by a business model' (2003: xxiv). Although the paradigm was coming from R&D in the private sector, it seemed an appropriate lens to understand the problem the team was dealing with.

We were looking to advance a new way of developing solutions to public problems (public innovation), and it was not acting in a vacuum. Rather it was operating in a system with much more knowledge and expertise in particular areas (around the public challenge of a specific project) than a small internal team whose knowledge and expertise were more general. So the challenge for the Laboratory in this paradigm, was how to use internal and external ideas that, in combination, would fit public systems whose requirements were defined by the pursuit of public value outcomes in policy and delivery processes.

This logical translation between the two realms is of course reductionist, but helped bring clarity to a process that intended to go beyond the mere attraction of 'solutions looking for problems' as one public official put it at the time. The challenge was to use a collaborative process at the service of the Laboratory's core objectives to find new ways of creating public value. The hypothesis was to acknowledge that the Government did not have the solutions to all problems. Rather, by coordinating a diverse set of stakeholders – public managers, directives, workers, entrepreneurs and citizens – different views could offer a more integral perspective of reality, and so help find the best solutions to public problems.

The basic model consisted of first developing a public challenge rooted in a problem that was relevant and that the institution was willing to act upon, and then looking for ideas that had potential to address it.

Aligning and developing ideas

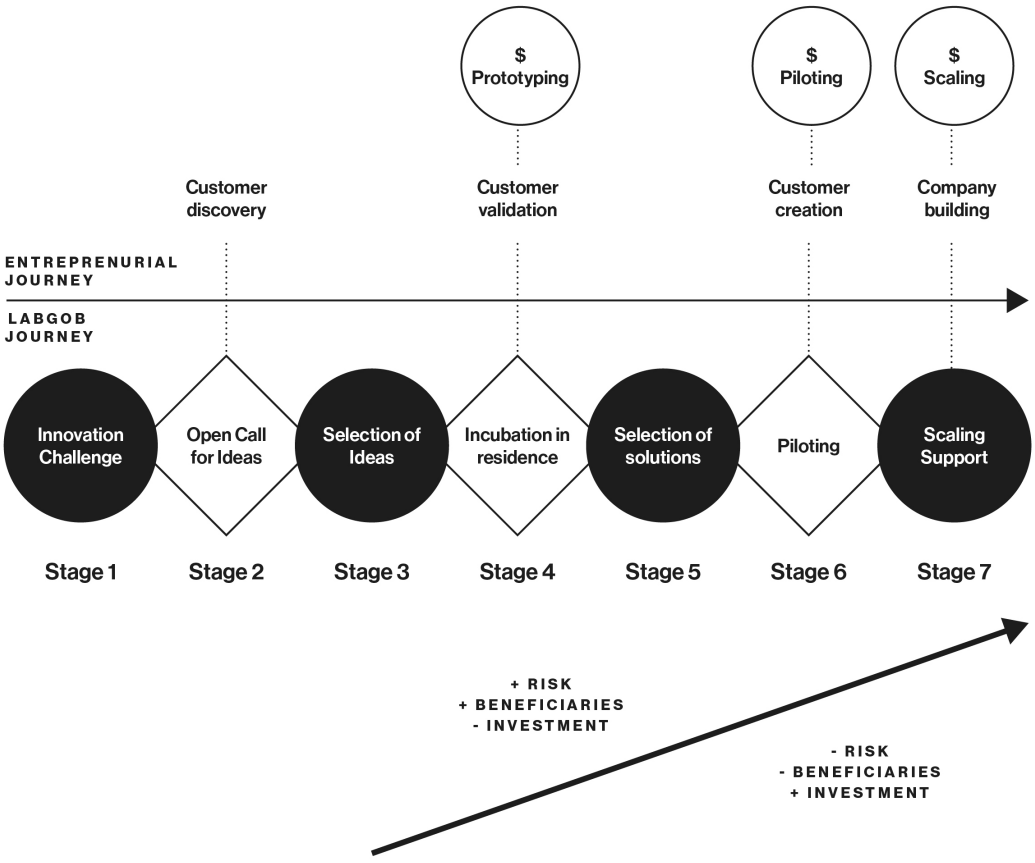
The process of developing the challenge was one of the outcomes of the Demo project. So the problem was how to propose a process that could motivate people to participate and then how to align the emerging ideas with the reality of the context and the organisations dealing with the challenge. For this, we developed an 'open innovation funnel' that was aligned with the macro phases of the Laboratory's innovation process, namely: Reframing, Experimentation and Implementation.

The way these stages were organised and financed was based on the key ideas of the 'customer development' entrepreneurial model, one of the building blocks of the lean startup framework initially developed by Steve Blank (Blank, 2003). Drawing on his experience as a successful serial entrepreneur in Silicon Valley, Blank realised that a 'start-up was not a small version of a large estab-

lished firm' and thus, that it requires a different approach to be successful in its search for a 'repeatable and scalable business model' (Blank, 2013). In fact, the traditional linear product development process - product idea followed by design and technology deployment, without knowing whether they would be able to meet customer needs and generate revenues – could be a 'path to disaster' (Blank, 2003). Instead, Blank proposed that entrepreneurs should adopt an outward-looking, accelerated learning mindset—that is, they should quickly develop hypotheses about the value proposition of their new venture, embrace a 'get out of the building' practical approach and test their hypotheses, adjusting them iteratively until they find a viable business model, that is, a product-need fit.

Blank pioneered this 'path to epiphany' to aid entrepreneurs' in their search, learning, and validation activities through the novel customer development process, which comprises four steps: 1) customer discovery, 2) customer validation, 3) customer creation and, finally, 4) company creation (Blank, 2003; Blank & Dorf, 2012).

Figure 4.21: Open innovation funnel for the LabGob, 2015 (Synthesis by the author)



This model is based on the premise that any business investment is made after having tested its desirability, feasibility and economic viability with real customers, which makes it highly complementary to the innovation process proposed by the Laboratory. As can be seen in Figure 4.21, the 'innovation funnel' proposed by the LabGob considers an alignment between the four customer development stages of the entrepreneurial journey and the seven stages, with proposed activities and financial instruments to be managed by the LabGob. Following this logic, the LabGob invests in start-ups according to the level of maturity of their understanding of the user/customer. These stages are described in Table 4.7.

Table 4.7: Stages of the innovation funnel for the LabGob, 2015 (Synthesis by the author)

Stage 1 is the development of the innovation challenge which, as explained earlier, has to be a 'validated problem' and have an "owner" who is willing to support the implementation of the solutions.
Stage 2 is about looking for and attracting ideas through an open call.
Stage 3 involves the selection of ideas by a panel of experts and potential clients, which allows for the first alignment: finding solutions that someone needs.
Stage 4 is about aligning these ideas with the context of implementation through prototyping. The selected projects are given relatively small funding (£5,000), which is linked with participation in the subsequent accelerated nurturing process (incubation in residence or 'bootcamp') to ensure the development of the second alignment: that the ideas work in solving the problem they claim to solve. This is achieved through an intense process of prototyping and validation with a group of users who have the problem they are looking to solve.
Stage 5 is about the potential for implementation. The ideas that have proven their effectiveness are chosen and given larger financing (£50,000-£100,000) together with the commitment of the relevant institutions to the pilot schemes.
Stage 6 is the piloting stage, where ideas are scaled in a controlled context (one service). This stage of implementation examines whether the solution is not only desirable but also feasible and economically viable.

If the solution is feasible, it is then much better prepared to progress to **Stage 7**, which is about helping the teams to leverage other types of financing, either in the form of public investment (CORFO), private investment or through a customer contract with a public institution.

The first challenge: Impacta Health

At this stage, all the strategy described was an informed hypothesis for action. The purpose of the first challenge then was to validate this hypothesis. However, it was also about testing an alternative model of public-private collaboration. With the help of expert partners[41], the Laboratory developed the first open challenge, which was called Impacta Health. This started from the brief developed in the Demo project and evolved into the question: how can we bring health closer to people?

Following the process described above, the Laboratory partnered with fourteen institutions across sectors and launched an open call. Two hundred and eight applications were received through a digital platform, many from abroad, but most of them from Chileans throughout the country, with a focus on primary and preventative healthcare. The projects sought were to systematically address the issues of bringing healthcare to people, alleviating overcrowding in family health centres and promoting disease prevention and self-care.

In stage three of the process, twenty teams were selected and they had the opportunity to present their ideas in front of a panel composed of private and public partners. Twelve ideas were selected for the incubation in residence, which lasted five weeks in an intensive process of engagement with representatives of the public sector and panels of different sets of users. At the end, the Laboratory mounted an exhibition with all the projects, and four were selected and financed for the pilot stage. Those selected are described in Table 4.8.

All winners piloted their ideas in Recoleta during 2016 and 2017. In 2018, DART won a contract to be implemented in 29 health services across Chile

[41] In the first instance, the Laboratory approached different external partners with experience in tackling open challenges for local governments, to seek help with stages two and three, so as to add legitimacy to the plan in the eyes of the Strategic Council. Later this became an internal capability of the Laboratory that was developed in subsequent challenges.

with the claim of reducing the annual budget for diabetic retinopathy by 50% and reducing the waiting list for treatment.[42] [43]

Table 4.8: Selected ideas of Impacta Health (LabGob, 2015)

DART - Digital solution designed to prevent the most common cause of vision loss in the adult population, diabetic retinopathy. Through a digital platform, it automatically detects digital images and allows an early diagnosis through telemedicine.
Primavera Salud - Redesign of test results to make them more user-friendly and accessible for patients and their families. This solution helps to create a culture of self-care in patients with cardiovascular diseases.
Hora Salud - Management, administration and modelling data platform, which allows people who use the health system to make public reservations and cancel medical appointments, through different communication channels.
App CESFAM - Web platform with mobile and offline functions, designed to improve the management of public health services, through a support system based on the family health management model.

Figure 4.21: Minister of Health presenting DART in 2018 (Minsal, 2018)

Video with some reflections and impressions of participants of this programme can be seen here:

https://vimeo.com/473963466/2b6ad52aff

[42] https://lab.gob.cl/noticias/lanzamiento-dart/

[43] https://ehealthreporter.com/es/noticia/presentan-software-que-permitira-triplicar-la-cantidad-de-examenes-para-prevenir-la-ceguera-diabetica/

Figure 4.23: Jury of Impacta Health (LabGob, 2015)

Figure 4.24: Bootcamp Impacta Health (LabGob, 2015)

Figure 4.25: Winners Impacta Health (LabGob, 2015)

4.5.3. Nurturing capabilities for supporting a design-driven innovation project

As established in the objectives, the Demo project gave the team the opportunity of systematising a set of design frameworks and methods to drive an innovation process in the public sector. These methods were used to prepare the projects selected by the Strategic Council (see Box 4.2) for entering the pipeline of projects of the Laboratory.

The hypothesis for this process was that if we were to start a collaboration with a public institution, we needed to have a basic common understanding in the three areas of the public value strategic triangle: clarity of the public value outcome, the proper authorising environment to support the endeavour, and the required operational capacities to be able to move it forward. The first two were given by the process of selection in a previous assessment. However the operational capacity, in this context, was a function of the capacity we had to collaborate.

This 'readiness' referred to how prepared the public institutions were to start an innovation process. It also related to the skills the team had to deal with an innovation problem. This approach was quickly changed to a broader understanding encompassing 'capabilities'.

According to Dong (2008:78) 'capabilities theorists claim that increasing the capacity of people to live the type of life that they value should be the primary concern of public policy organs' and, building on the ideas of Sen and Nussbaum (1993) this has to do with 'a person's capability to achieve certain actions (functioning) that the person deems valuable for living'. In design, Dong argues, 'the capability set denotes the requisite conditions for "doing design" and the question is not "How capable of design am I?" but "If I wanted to engage in design, what set of capabilities would I need?"' (2008:79). In his argument, this is about looking for what resources are available for people to transform the capability set for design into the "function of designing", meaning those capabilities necessary to achieve their own objectives.

Within this conceptual framework, the issue concerned what was needed by the teams if they wanted to engage with the Laboratory's proposition, namely to address their problems using design. The team's view was that this involved a

combination of the skills, the experience of collaboration, and the political support the Laboratory could give as an inter-ministerial institution[44].

Starting from their own brief and following this logic, the Laboratory offered a programme of two workshops plus a period for developing their projects before the decision of the Strategic Council. The idea was to help them develop their capabilities focusing on their own problems, forming their own teams, understanding their users, learning how to plan and present a project and looking for support in their own organisations.

The first workshop was with 'project owners' and the task was to reframe the problem, identify their key users and identify a team. The second workshop was with the team, to learn the basis of the design process: user research, journeys, personas, ideation and opportunity statements. Then they had one month of mentoring with members of the Laboratory. This finished with a final decision of the Strategic Council in a pitch, where four projects were selected. These projects became the portfolio of Innovation Projects of the Laboratory for the next two years.

4.5.4. Building the branded experience and visual narrative

All of the activities conducted by the Laboratory were supported by a set of design assets developed specifically for each instance, as seen in the images across this chapter. The communications designer of the team said: *'although there was a brand in graphic terms, this was empty, so the team had to build from the imaginary'* (INT-3[45]).

This allowed the team to design graphics products for different instances such as templates for the workshops, signs, merchandising, and leaflets. Later this would evolve to a family of branded products for all the programmes of the Laboratory. At this stage, the goals of this component were: (1) to reduce the entry barriers for people to approach governmental activities, by using a 'softer and closer' visual language; (2) to get the attention of people over the standard image

[44] Later this initial approach was further developed by the OECD considering, skills, motivations and opportunities for innovation capabilities in the public sector. See OECD, 2017.

[45] INT 3, January 2016.

of the Government; and (3) to establish a symbolic relationship with the people, by delivering a branded product that would be memorable.

This material dimension, where all the products of the Laboratory should be branded and designed, also permeated the internal deliverables. The communications designer also said: *'for example, a meeting with the Strategic Council is not organised, it is designed. We deal with the content and put all the logistics, food, images and production at the service of the objectives that the Lab has for that meeting'* (INT-3)[46].

The physical space where the Laboratory was based was also influential in facilitating a positive material experience. The Laboratory was located in a rented open floor, two blocks away from the House of Government. The architectural project commissioned Emilio Marín to refurbish the open floor allocated to the Laboratory –with the standard budget provided by the State for any governmental installation– but focused on providing what Marín defined as *'a frugal approach to a workspace*'. With this aim, he chose to use raw materials and glass, and invested in quality chairs and tables. The project was finished in January 2016 –when my practice cycle had ended – and made an important contribution to provision of an integrated experience.

4.5.5. Recruiting the appropriate team

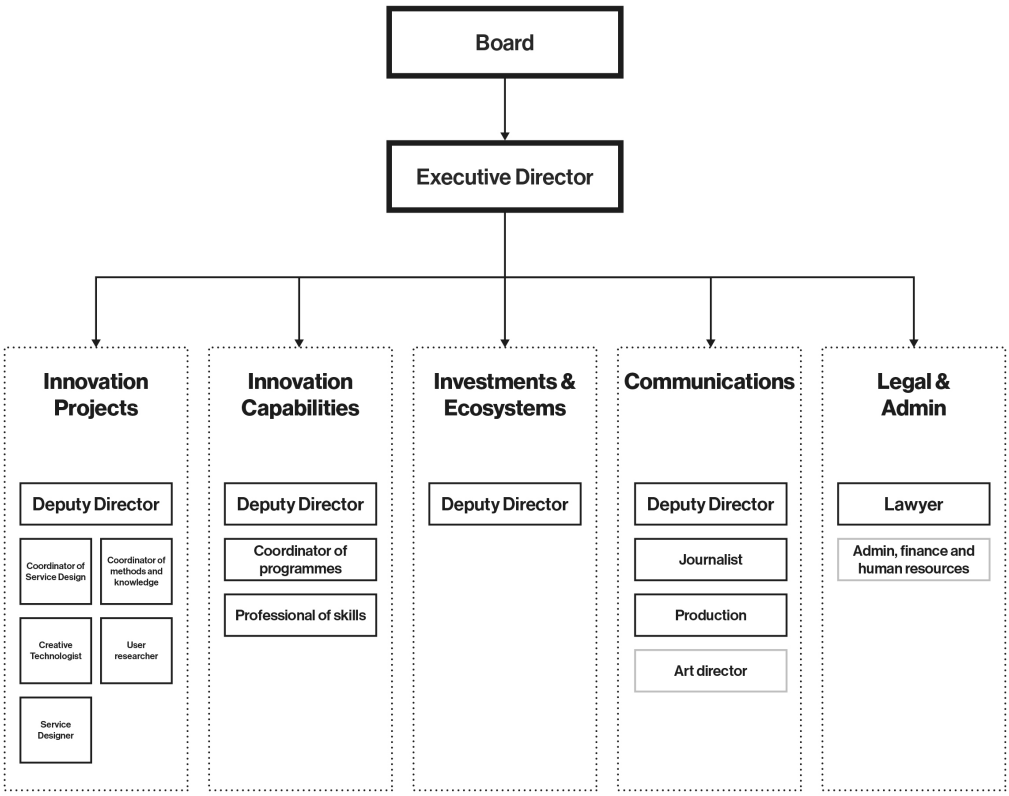
Following the learning from the demo stage, the Laboratory refined its strategy combining the different areas and proposing a revised organisational structure. The main change was to remove the knowledge management area, and also to eliminate this function across the team. The revised version of the team structure can be seen in Figure 4.26. All of the other roles described earlier were maintained.

After the team structure was decided, the Laboratory published an open call for the job positions in the main newspapers of the country; 2,758 people submitted 4,007 job applications. This was considered 'a massive call' for jobs in the Chilean public sector. The Laboratory then went through a two-month recruitment process to find the most suitable candidates, followed by an on-boarding process with the support of the skills team of Nesta.

[46] Ibidem

From all the applications submitted, 398 people applied for the Service Designer post, 390 for the Skills Director post, 383 for the Head of Communications, and 369 for the Head of Innovation Projects. Only 15 candidates were selected and were part of the skills programme by Nesta. Most of them became key members of the Laboratory for the three years of government, and many of them still work there. The process of recruitment became one of the key factors in the success of the Laboratory.

Figure 4.26: Revised team structure (April, 2015)



4.6. Closing remarks

In this chapter I have explained how design was introduced and integrated into the policy cycle of PSI by designing and implementing the Chilean LabGob as a policy instrument. As a consequence of the actions described, the Laboratory was able to build significant resources with which to operate in the course of its evolution. There was an agreed political-administrative 'chassis' and a budget to support operations; the design process had demonstrated it effectiveness to address the people-centricity element of the mandate; the authorising environment was still being built, but the Lab already had a small network of allies and there were seeds of a culture of public innovation growing in Government; there was a team that had been recruited through a rigorous process; the brand was being successfully developed and exploited; there was a new space ready to be used; there was growing social capital across sectors, and Impacta was considered a success.

However, perhaps the most important asset that the Laboratory built in this context was a network of committed people and validated learning from their practical interaction with the first versions of the Lab's offerings. This acknowledgement implied significant organisational changes later to re-orient the strategy towards those areas perceived as more valuable, but also to address the different challenges that emerged during the action cycles.

The next chapter discusses the main observations and insights on this process, giving a detailed account of how the different challenges of introducing design in the Chilean public sector were overcome.

Figure 5.27: Process for maturing projects with civil servants (LabGob, 2015)

Figure 4.28: Capacity building with Nesta (LabGob, 2015)

Figure 4.29: Initial touchpoints for the branded experience (LabGob, 2015)

Chapter 5

Integrating Design into the politico-organisational context of the LabGob

5.1. Introduction to the chapter

In the previous chapter, I explained how design was introduced and integrated into the policy cycle of PSI by designing and implementing the LabGob. In this one, I reflect on the evidence gathered along with the research project and discuss the challenges of introducing design into the policy cycle and power structures of a new PSI-Lab's specific politico-organisational context.

The chapter is organised into two sections. Section 5.2 discusses how the team was able to turn the politico-organisational aspects of the LabGob context into matters of design. It explains how design was intertwined with politics to build legitimacy across sectors and implement effective collaborative PSI.

Section 5.3 discusses how, once these initial barriers were overcome, the LabGob changed its strategy to address the challenges of scale and increase its impact. This was done by changing the logic of innovation from a product orientation to a service of collaboration experiences, leading to the consolidation of the LabGob as a service system for public value co-creation.

5.2. Turning politico-organisational factors into matters of design

5.2.1. Introducing a design approach at the policy level

From the outset, considering the brief of implementing the Laboratory as a design problem – and therefore using a design process for the task–, was accepted and supported by CORFO at the higher level. During service implementation, this approach was enacted on a larger scale, giving the Laboratory the foundations on which it would build. The nature of this practice and research process reflects the orientation given to design when introduced in a new field, namely to understand design as an integrative discipline involved in the entire process of the project and positioned at the intersection of the several fields of knowledge and domains of practice required for a given outcome (Buchanan, 1992; Friedman, 2003).

At the beginning of this project, the term 'design' was deliberately left undetermined in relation to the several sub-disciplines of the design profession, with the expectation of observing what it could become after the process of expansion, adaptation and change that it would experience during the reflective practice.

The experience of the project and the evidence collected through interviews and observations suggest, however, that the introduction of design in the politico-organisational context of the public sector at this level has more to do with introducing a 'design attitude'[1], to be embraced across different disciplines. Although the original approach to the problem was led by me as a designer, the successful integration of design in the LabGob as a valid approach for policy de-

[1] This concept was originally coined by Lazlo Moholy-Nagy –one of the Bauhaus directors– who argued that 'designing is not a profession but an attitude' and that for addressing the complexity of social problems 'the idea of design and the profession of the designer has to be transformed from the notion of a specialist function into a generally valid attitude of resourcefulness and inventiveness which allows projects to be seen in isolation but in relationship with the need of the individual and the community' (Moholy-Nagy, 1942)

sign and implementation was driven by multiple non-designers, who developed a design-led approach beyond disciplinary constraints.

Design attitude

Design attitude' can be defined as a 'set of abilities that impact innovation and organisational learning'[2] (Amatullo, 2015) that starts with a 'thorough, ongoing expectation and orientation, that views each project as an opportunity to create something new and remarkable'. By questioning the basic assumptions of the project situation, this attitude 'resolves to produce a positive impact in a way that has not been done before' (Boland and Collopy, 2004; 2008).

It was with this orientation that a process and methodology was proposed and accepted for designing the Laboratory as a service (see Section 4.3). However, initially, there was no agreement among the internal stakeholders about what the Laboratory should do. By adopting a design orientation, the possibilities were opened up: the Laboratory could become many things. The decision to frame the policy instruments' development as a design problem, and then sustaining this approach throughout the process, helped orient and clarify possibilities by moving from 'a decision to be made on paper' among known and available options, to a process of 'designing the best instrument' to fulfil the mandate (see Section 4.4).

As one of the participants in the first strategic workshop put it: *'We need an appropriate model for our context and for our Government. We should work to propose an integrative model that while considering these functions*[3]*, could incorporate what we already have, stressing the citizen focus of our Government'* (INT-17)[4].

The position that the Laboratory had at the start, as a public initiative – a sub-unit under the Public Innovation Committee – was challenged and later changed[5], transitioning to a stronger institutional position but also to an evolving

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[2] Amatullo (2015) building on Michlewski, K (2015) defines design attitude as a composite of distinct abilities (skills, capabilities, aptitudes) that designers apply during the process of designing. These are: 1) ambiguity tolerance; 2) engagement with aesthetics; 3) systems thinking; 4) connecting multiple perspectives; 5) creativity; and 6) empathy

[3] Referring to the presented categories of I-teams proposed by Nesta.

[4] INT 17, September 2017.

[5] Before the official launch in May 2015, the Public Innovation Committee added the name of Government Laboratory to be used indistinctly. Res 44 CORFO. 27 April 2015.

conceptualisation of what the Laboratory was. The LabGob as a concept ended up being at the same time the policy, the institution, the organisation, the service and the physical space for public innovation in the Chilean Government. This evolution was mainly due to the success of the Laboratory in practice. However, at the start, there was a key decision that made this possible: to understand that the Strategic Council was also an object of design, and its members were both users and stakeholders.

It was about dealing with what Dan Hill has called the 'Dark Matter' – the organisations and culture, and the structural relationships that bind them together – and considering the process of shaping these 'materials', as matters of design (2012).

As the Executive Director put it: *'We understood that the given political-institutional conditions were a mandate, a governance model, a regulation, and a budget, and all the rest was a matter of design. So we needed to address the complexity of the interests in dispute that were present on that Council and try to serve each interest in a coordinated way to achieve our objectives, but also to be able to implement what we were promising, respecting the mandate, following the regulation, and keeping track of the expenditure, of which we had achieved more than 95% execution in the first two years'* (INT-12)[6].

This approach considered that the political-institutional conditions were a given, setting the boundaries for designing and implementing the service. In administrative terms, this implied a rigorous compliance with the rules and regulations of public management, together with creating a specific admin-legal unit for this task. *'Each instrument, programme and activity done by the Laboratory, has an administrative backup'* (INT-1)[7].

In the words of a member of the leadership team, the key element for sustaining a design approach in this context was to *'play under the rules of the bosses'*, separating the process of the maturity of the Laboratory as a service from the maturity of the Strategic Council as an institution. In his words: *'At the end, the service was so powerful that the Strategic Council had to change the regulation to reflect what the Laboratory was in practice'* (INT-12)[8].

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[6] INT 12, September 2017.

[7] INT 1, December 2016.

[8] Ibidem.

The effort of making space for this 'design attitude' from the start, influenced the course the project would follow. However, since the project required a deep transformation in the way that Government approached innovation, this orientation also challenged some of the fundamental assumptions at the policy and institutional level.

Emerging tensions between policy and design

Junginger and Sangiorgi (2009) suggest that when design projects confront the transformation of organisational systems, higher levels of resistance are found, so there is a need for reflective enquiry into the system to unveil their assumptions, agree on a vision and build a strong commitment. However, in this case, this reflective inquiry –described in Section 4.4– was not enough.

As soon as the project began, we realised that introducing design at this level brought tensions in multiple dimensions beyond the technical considerations of the service to be designed. Apart from the project's underlying political considerations (discussed in the next section), there were tensions related to the clash of two distinct ways of thinking and doing. The challenge of reconciling design and public management as two distinct epistemologies, as explained in Chapter 2, became concrete.

The tensions started at the outset with the introduction of the word 'design' into the language used to describe and support policy strategies. According to one of the team members: *'the term produced a lot of noise, no one really understood what we meant with design (…) even some of us who were designers, we never heard before that what we do was useful for something else beyond our traditional creative activities'* (INT-9)[9].

'Are you saying that you will hire artists to solve the problem of the queues?' argued one public official in one of the first meetings of the Demo project (INT-21)[10].

This basic tension concerning terms, later scaled into a constant questioning from some of the public managers about the 'added value' of the approach for tackling policy problems. Regarding user-centricity, some felt chal-

[9] INT 9, January 2016.

[10] INT 21, September, 2017

lenged by 'this foreign' approach that seemed in many ways like 'a new fashion' with no clear distinctive contribution.

Some of the policy-makers claimed that they were already 'considering users': *'We have many surveys that are telling us how to prioritise the most pressing issues of the public. And we also do some focus groups with our target segments'* (INT-16)[11]. Others thought that this was not enough, and they were advocates of citizen participation programmes that were already running: *'We just pass a law that obliges all public services to incorporate citizen participation processes in their policies: what you call design, we call it citizen participation'* (INT-20)[12].

During the first years of the LabGob, such resistance was a constant source of tension throughout the process: in terms of the validity of design methods against the 'traditional' methods for understanding people; in terms of how policies with similar intents could be enacted more practically, rather than merely as rules and regulations[13]; and tensions between different 'attitudes' towards decision-making.

The tensions were between what Boland and Collopy (2008) called a 'decision attitude' – one that chooses from among the alternatives that are already at hand – and a 'design attitude', that strives to construct a more satisfying solution than has so far been proposed. This tension was increased by a third 'integrative' attitude, which was concerned with including under the Laboratory existing initiatives that were aligned with the purpose.

In the long run, the process would become a negotiation between the three cultures. While the Laboratory was creating its own design-led flagship programmes, it was also integrating existing initiatives, such as an innovation prize run by the Civil Service for civil servants. This negotiation was characterised by a strong political drive (see Section 5.2.4) to reconcile these different views. However, as explained in the next section, there was also a need to validate the design approach in practice before it could scale.

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[11] INT 16, September, 2017

[12] INT 20, September, 2017

[13] A clear expression of this last element was the constant pressure to write and publish the 'public innovation policy' of the Government, before starting implementation. Eventually, this piece of writing was never published and the output in this regard was the book of the Laboratory in 2018 that contained the whole experience. See Laboratorio de Gobierno (2018)

5.2.2. Validating design in action

This initial resistance at the higher level of the policy structure started to wane as the Lab's work became tangible and valued by external stakeholders. This was due to the strategic decision to put people at the centre of the value proposition, mobilising and attracting people from different segments to participate and collaborate in each one of the programmes. The aim was to understand their needs and motivations, so as to help the Lab refine its offerings and serve these various segments. In practice, it implied establishing a collaborative dialogue on governing the Lab, understanding it as a complex process responding to complex problems where 'many different institutions and stakeholders have some responsibility for or influence over the public outcomes' (Ansell and Turfing, 2014:10).

Apart from the Strategic Council, this collaborative dialogue was established with three of the stakeholders who were the Lab's main public sector clients: senior directives of central government, senior directives of local governments, and civil servants and public managers. Each one validated the initial work of the Lab in different dimensions.

A citizen-centred and practical inquiry

The initial evaluation of senior officials of the Ministry of Health, who were the first clients of the Lab, confirmed three of the key aspects of the value of design present in the literature. First, they valued the way the problem was framed as an opportunity to examine and reflect on the service processes from a human perspective but also visually and synthetically. According to them, the design approach made this reflection more productive and specific. As one member of staff put it: *'despite [the fact] that you are not experts on health, you have been able to put most of the problems of the different dimensions of the process that although we know they exist, we never have the time to sit down and look at them altogether in such a visual and systematised way. You have put faces and images to very general problems that we have'*[14].

Second, they valued the idea of prototyping before implementing: *'piloting solutions in delimited and cared spaces is an excellent way of engaging different*

[14] Feedback from the workshop held with the Ministry of Health June 2015. A summary of feedback from these workshops can be seen here: https://vimeo.com/473963092/9591e591ce

kinds of people and stakeholders in the process'[15]. They acknowledged, however, that success was a function of the commitment and engagement of the different stakeholders in a process. This was highlighted as a key challenge for scaling.

Finally, they valued an approach that, although using technological means, was focused on involving citizens in the process. As one of the officials said: *'Here we are full of technological failures because we never think of the users. When the system is not clear and when the processes are confusing, there is no technology that can work'*[16].

Local governments also considered the people-centricity of design as one of the most valuable elements. In their case, they saw it as a practical way of implementing active citizen participation in connecting policies and services. In the words of one of the public managers involved in the Demo: *'In public policies [coming from the Government] guidance always tends to be much more vertical, so the view of development based on active listening to the community, analysing the problem and being able to generate a proposal, was very well received by the community. We were looking to nurture community empowerment to generate solutions and the LabGob was very consistent in following that objective'* (INT-16)[17].

For these stakeholders, however, the value of prototyping had a different meaning. They saw the provision of concrete and visible deliverables for the local context as a basis for trust in the process. For them, to have access to an experimental process such as this one, created an opportunity to innovate, leveraging existing resources and moving away from solutions that focused mainly on infrastructure, for which the resources were not available. In the words of a senior official of the local government: *'traditionally, when we think about expanding primary health coverage, we tend to imagine ourselves building 5,000 new centres for which we don't have the resources, and maybe it's not necessary if we take a more systemic view and start thinking how we can leverage what we have, while focusing on improving the work of doctors and bringing health closer to people'* (INT-15)[18].

Apart from confirming some of the core values of design in this field, this evidence suggests that the most valuable element was in the process itself. It perceived as a form of practical collective inquiry into known and shared problems

[15] Ibidem.

[16] Ibidem.

[17] INT 16, September, 2017

[18] INT 15, September 2017

but from a different perspective. Although based on citizen problems, it focused on human and cultural elements rather than technical ones. It created new relationships among diverse stakeholders while collectively unpacking a public problem from a citizens' perspective.

A collective process based on experiences and new relationships

For local governments, this collective process was considered as an opportunity to collaborate with the central government in finding solutions to problems they shared, bypassing the regular bureaucratic structure and leading to a more direct relationship. In their words: '*This project provided a setting that ran in a parallel stream to the regular interactions that we have with members of the Government'* (INT-15)[19]. This offered a way to build new relationships across sectors, opening channels to discuss other projects and initiatives less hierarchically and more directly.

These new relationships being built at an institutional level, were a key element that civil servants and public managers started to value. During the whole process of practice, the team and I engaged with a great number of civil servants and public managers. At the early stages, members of the team felt that although the Laboratory's business did not require any special treatment from a legal and administrative perspective, there was still resistance to our way of working.

This was due to what interviewees called 'the institutional tradition', referring to how people and institutions follow a 'way of doing things' that owes more to time and institutional culture than to a regulatory framework. As one team member said: *'Although we are not transgressing norms, we are doing things in a different way, but since the rest of the institutions are not used to that, we find ourselves with a big "no, or it can't be"'* (INT-2)[20].

According to most interviewees, this tradition is sustained by at least four issues: (1) rigidity due to a focus on the day-to-day; (2) fear of the consequences that change might bring in front of their bosses, and respect for regulations; (3) the lack of a known valid alternative to the traditional ways of doing

[19] Ibidem.

[20] INT 2, December 2016

things; and (4) the impact of peer pressure, isolating those who are more willing to innovate in their environments.

Most of the public managers and civil servants who started to engage with the Lab valued the support they received in terms of innovation capabilities[21]. However, the contribution of the approach was much more related to the conditions it was creating to overcome the cultural barriers described above, enabling the emergence of an innovation culture inside the public sector. This was through allowing them to be active agents of the innovation process, supporting the development of new skills, providing a space where they felt valued, enabling the appropriate 'authorising environment' for them to engage in innovation activities (see Section 5.2.3), and connecting them with other civil servants who were dealing with similar issues, contributing to building a 'sense of belonging' based on these new relationships.

They considered that this experience of working with the Lab was helping them internally by improving the way they worked and the way they felt about their work, and by impacting the cultural environment in which they worked. In the words of one public manager interviewed, *'The Laboratory is contributing to improve the quality of life of public officials by giving them a more active role and valuing their opinion (…) when the official sees that their ideas can be considered, and that there are others like them with the same attitude, it is not the same as when they found themselves isolated trying to do something different, and with fear of making a mistake'* (INT-13)[22].

This attribute of being allowed to create or being considered is what the literature identifies as the main element of collaborative PSI. According to Torfing (2018), its value is that by opening up public bureaucracies and engaging a diverse group of actors, it is possible to 'exploit the creative potential of people arising from sustained dialogue'. Creative dialogue in this case was conceptualised as experiences to foster creative collaboration and was designed as such.

Each instance where there was engagement with teams outside the Lab was designed, considering objectives, methods and desired outcomes. They were always based on a specific agenda, that most of the time belonged to one of the stages of the design process with their corresponding methods. The selected de-

[21] This was mainly done in the process of selecting project and teams to work with. See Box 4.2 and Section 4.5.3

[22] INT 13, September 2017

sign method functioned as an organising structure for fostering a learning process that could build a common language about innovation among stakeholders from different backgrounds. Later in the process, terms such as 'user journey', 'co-creation', 'prototype' or 'canvas', were widely adopted.

Beyond the methods, these experiences were also supported by design resources for learning such as templates, videos or slides; but also with specific food and branded elements to build a sense of space. A key component was to understand them as a sequence in time, so there was a 'before, during and after' of each activity, which helped build loyalty with users and a large database to keep participants informed.

This rigorous and sensitive approach was possible thanks to a specific team recruited for the task, comprising people with strong training in events and digital campaigns who were coming from music and creative industries. For them, the public sector was new but the focus on building engaging experiences was thoroughly familiar.

In the words of one of the members of the communications team: *'I think we have managed to design different experiences of transference, which in the end make learning a more meaningful process because it remains with them. They have the material they take away, the tools, the photos of the results, etc; but, perhaps, the most significant thing is that they have the memory that they had a good time and met new people. They have the networks, the contacts. Most of them write back and later come to our events'* (INT-3)[23].

In the long run, the systematic provision of these experiences – some short, such as a meeting, and some long, such as the bootcamp – and their alignment with specific projects, supported a culture of 'experiential learning'[24], that was embraced as the main principle of the training programmes of the Laboratory.

5.2.3. Building political legitimacy

The validation of design as an approach was more concerned with the collaborative process entailed and the culture of practice proposed. These became key elements in overcoming the initial resistance of the Strategic Council.

[23] INT 3, December 2016

[24] See Kolb, 1984

As one of the members of the leadership team observed: '*At the end, our validation came from the users of the Lab, who became our speakers. When it's a mayor or a minister who defends our work in front of the Council, the tensions stop being about technical issues and start being a political matter'* (INT-12)[25].

This quote reflects the fact that validation of the approach was not just a technical issue. The idea that the approach was 'foreign,' as seen before, was not a problem of its validity, but rather a political problem. The design approach and the visibility that creates, represented us as new agents and the Lab as a new initiative, trying to influence a traditional politico-organisational context. For the success of the Lab (and us in it), we needed to build political legitimacy.

The space of the political in PSI

There is substantive literature that argues that social policy problems are 'wicked' (Rittel and Webber, 1973; Mulgan, 2009; Muir and Parker, 2014) and that design thinking can offer an alternative epistemological approach to positivistic science to address them (Buchanan, 1992; Dorst, 2011; Bason 2014). Interestingly, Rittel and Webber, who were the first to propose that social problems were 'wicked' back in 1973, stressed the fact that in a pluralistic society, social problems cannot be meaningfully correct or false; and that there are not definite and objective answers to these problems. They suggest that policy problems are socio-political constructions whose framing is mediated by different reasoning methods and subjective considerations –such as individual and collective perceptions, relationships, and behaviours.

Following this reasoning, if social policy problems are by definition 'public', the complexity of dealing with them in a democratic society is not just an epistemological problem; it is primarily, a political one. This political complexity for governments lies primarily in the power disputes of defining what is desirable (and what is not) and what to do to make things happen (and what not to do). What is important or perceived as valuable for some may not be for others. As the classic Von Bismarck quote states, 'Politics is the art of the possible, the attainable and the next best'.

According to Birkland, the process of negotiating which problems are worth addressing by the government (and which are not), the method and ap-

[25] INT 12, September 2017.

proach by which the issue is addressed, the timescale and for whose benefit, is what, under a democratic system, is understood as politics. Scholars define as public policies the statements by governments which outline what they intend to do (and not do) about the agreed (or not) public problems (2015).

Innovating to increase the capacity of the government to address complex 'wicked' problems is, therefore, as much about looking for new ways to design policies and services to address this complexity, as it is about innovating in politics. It offers new ways for collaborating, negotiating, and aligning interests and needs among a diverse set of people and actors in a democratic context. This approach to innovation is necessary to give legitimate and sustainable framings to the problems that are agreed to be worth addressing.

Sorensen (2017) observes that while policy and service innovation, as subsets of PSI, involve step changes in the way public value is produced, provided and distributed, 'political innovations constitute new perceptions of what counts as public value and new ways of transforming these perceptions into authoritative goals, principles and rules for public governance'. However, she argues that research in PSI tends to overlook the fact that, 'unlike in the private sector, PSI takes place in a politico-organisational context' and it is not only conditioned by what users want, but also by what political decision-makers prioritise' (2017).

This neglect has also been raised in recent literature regarding the introduction of design in PSI, highlighting the fact that when design thinking comes in contact with power and politics, it faces significant challenges (Lewis, McGann and Blomkamp, 2020) as it is not able to provide guidance on how to address politically contentious policymaking activities in practice. Hence, it is not surprising that it focuses on service delivery (Clarke and Craft, 2018). If design is divorced from institutions in the public sector and is incapable of creating strong links, it will remain isolated and have little impact (Peters, 2018).

Politics as an enabler

The introduction of design approaches into the Lab's organisational context was much about being persistent in direction and flexible in stewardship, considering politics as the principal enabler for dealing with different perspectives on policy decision-making. In simple terms, the approach was the opposite of what the literature suggests: we thought of the political as a matter of design, and not a barrier, so we dealt with it as such. When I claim that the political was an

enabler, I mean that the approach was to build political legitimacy to act, validating design as an approach and the Lab as an institution within government, to expand its impact and reach.

As one of the service designers of the team said: *'I realised that for me, the role of politics is vital; it is almost as important to me in the Lab as it is design. It is like an amalgamation, two elements that are somehow transversal to the whole process, that without either of them, the process does not work. On the one hand, the policy is enabling steps within the innovation process and design is being the guide and the light of that process'* (INT-9)[26].

This process of enabling 'innovation steps' might be one of the most important elements of the viability of PSI efforts, when we think of it as a way of getting the authority to 'either disrupt established practices or challenge the common wisdom in a certain field' (Ansell and Torfing, 2014). In the words of the Executive Director: *'I believe that politics ultimately allows you to have a certain type of support for not doing the things that the law tells you to do. To advance beyond what is known as possible in public administration. In other words, politics to me, in particular, at this time, has allowed me to cross the border of what is possible'* (INT-7)[27].

This enabling political legitimacy was built through three systematic efforts: first, at the policy level, explaining, demonstrating and validating the approach while negotiating and aligning the 'political will' of different leaders inside the Government to support and participate in the Lab; second, at the service level, building the legitimate 'authorisation' of external stakeholders, partners, institutional clients and civil servants to pursue public innovation in this way; and third, at the external ecosystem level, building legitimacy with private partners and entrepreneurs.

Leveraging support of the authorities

As seen earlier, at the policy level, legitimacy had to be built within the Strategic Council and its relationships with other ministers or heads of service. Most of the interviewees agreed that at this level there were two key drivers of success in the long run: first, as a pre-requisite for engaging with any institution, to secure the visible involvement and commitment of the highest level of political

[26] INT 9, March 2016

[27] INT 7, March 2016

authority; and second, to discuss, validate and negotiate the project brief with the highest level technical teams.

With these elements in place, two things would happen: first, we would make the case in the Strategic Council and the negotiations and disputes would be developed among peers, most of whom were ministers; and second, there would be a guarantee that the teams inside these partner institutions would commit resources in a project that was part of their policy agenda, had political priority and enjoyed support at the highest levels of the organisation.

To secure this political commitment at the highest levels, the social capital we had in government was of the utmost importance. We knew some of the ministers from the campaign and the Lab also had the full support of the President, so most of the interactions with the first allies were based on the underlying commitment to the Government's political project of putting the State at the service of the people.

Building a movement around the LabGob

Winning visible political support at the highest levels also motivated civil servants and facilitated relationships at other levels. One of the team members noted: *'It is very important to give visibility to the political partner. When the Minister of the Interior came to the Lab to present the initiative, for example, it made their teams feel committed to our teams and to the process. This made later that their people was in this office every day, leading not just to a rational collaboration with the projects, but also emotional, and in the end, we are people, so if that emotional connection works, it is very difficult for the commitment to be diluted'* (INT-13)[28].

Again, this quote suggests that the Lab's principal value lay in its capacity to allow and support collaboration, creating strong bonds between people beyond the technical dimensions of the work. It was about being authorised to collaborate. Cumulatively, these experiences of collaboration built a culture of practice nurtured within and around the Lab.

Thus, political legitimacy had to do with building a culture and a movement of people behind, within and around the LabGob. This was developed as a process across all of its programmes of identifying, connecting and showcasing

[28] INT 13, September 2017

public innovators and initiatives that, despite the barriers, were already happening in different places. The process was supported by the development of events and open branded resources.

This strategy started to attract a growing network of allies in public institutions who saw the Laboratory as a space of validation for a more innovative attitude in the public sector. This perception was strengthened by the fact that the Laboratory, in their eyes, had political legitimacy as an initiative coming from the President and governed by ministers. The combination of these two elements, cultural and political legitimacy, instigated an 'authorising environment' for civil servants to become 'public innovators'. Later, this effort took a central position in the service strategy and was supported by new programmes such as the Network of Public Innovators[29].

Engaging with the external ecosystem

When the open innovation programmes were launched (see Section 4.5.2), entrepreneurs and key stakeholders from the private sector valued the open and people-centred approach that the Laboratory was proposing for 'opening the state to non-state players' through conducting collaborative cross-sector innovation projects. However, to get their commitment was a difficult task.

While this was mainly perceived as a good opportunity for doing business, the challenge was to break the barriers of distrust with the private sector, and then, to build new relationships with the key stakeholders in the entrepreneurial ecosystem. This was particularly important as the Lab was a new player in an ecosystem that has been growing in Chile during the last decade and had many programmes devoted to entrepreneurship and social innovation. Their validation and support were needed, especially coming from a Government that had recently been labelled as anti-enterprise. As a member of the team who was leading the Impacta initiative said, to build social capital was mainly an issue of time: *'It was about establishing close communication, receiving a lot of people, having chats, finding the time to go to events, etc (…) The challenge was how to build trust when the Laboratory was perceived as competition for some. Since we were providing co-working spaces, we had a great branding that was different from Government. We had a big budget and we were new'* (INT-8)[30].

[29] See https://innovadorespublicos.cl/

[30] INT 8, March 2016

Another barrier was the fact that previous public-private projects had failed because of the lack of support or lack of funding in the implementation stages, and also because of the perception in the private sector of government as *'bureaucratic, slow and rigid'* and *'only concerned with making announcements'* as one of the participants of the opening event of the Lab observed.

The way to overcome this barrier was to effectively 'open the state' in reality and expand the institutional relationships the Laboratory had with public institutions and local governments to incorporate private and civil society partners from the entrepreneurial and social innovation ecosystem, and include them as co-owners of the open challenge. As one senior public official said: *'the only way we can regain trust from members of civil society is to start working together on something concrete'* (INT-16)[31].

This was implemented in practice by giving all partners space to participate in the promotion, delegating decision power by including them in the selection panel and including their innovation perspective by inviting them to be part of the bootcamp as mentors. All of these instances contributed to building dialogue and new relationships between entrepreneurs, civil servants, public managers, representatives of trade unions, local governments, politicians and representatives of civil society. These new relationships became the core of the cross-sectoral social capital of the Laboratory, allowing it to strengthen what would later become a public innovation ecosystem.

Political legitimacy was about distributing power

The cross-sectoral political legitimacy of the LabGob was based on distributing power at both the policy and service levels, giving stakeholders and partners visibility, responsibility and ownership of their own efforts and projects. The systematic provision of experiences of collaboration for a diverse range of stakeholders were opportunities not just for co-creating value but also for distributing power, which means to give and to get. This open approach was possible because it was a controlled space and the elements of that distribution were carefully managed. However, it helped to improve the cross-sectoral social capital and, by doing so, created new relationships and power dynamics that in the end reinforced the institutional position of the LabGob, which resisted the change of government and survived.

[31] INT 16, September 2017

Figure 5.1: Inauguration of the Public Innovators Network (LabGob, 2017)

5.3. Making design scalable through experiences for collaboration

5.3.1. From innovation as a product to innovation as a service

Given the mission, the budget assigned, and the institutional position of the LabGob it was expected that it could have impact on a national scale. However, as already explained, it started small. The demo project –as a prototype– with very specific interventions and associated programmes, allowed the team to test the value proposition, strengthen some elements, change others and, perhaps, most importantly, discover new ways of creating value.

During this first period, the Lab was able to validate its approach with different stakeholders. However, the main perceived value was not the concrete results that the LabGob was producing at this stage, but rather its capacity to transform culture through collaborative experiences that led to new relationships and social capital among a diverse set of actors. The mission to 'articulate multiple players in the co-creation of solutions to public problems' was being fulfilled and 'innovation was happening', as one civil servant said at the time[32].

This was possible because the Lab was able to turn what were considered 'the natural factors' of the politico-organisational context, into matters of design, and the problem of dealing with those factors, into a design problem. This reflected a sustained 'design attitude' towards the LabGob as a project in constant evolution, and the political management of multiple views, interests and cultures of policy and decision-making. From the dynamics of the board, to a meeting, an event or an open challenge, the LabGob embraced a design attitude as a 'culture of practice' that was sustained and enabled by political legitimacy.

[32] Impressions of one attendee at a session of one of the open challenges in January 2016, where I gave a lecture and did tutoring for projects.

This cross-sectoral political legitimacy was about distributing power, which also meant giving away some levels of ownership and control of the innovation processes and its results, leading to a shift in the core role of the Lab as a 'developer and creator' (see Section 4.4.4) to an enabler and articulator of the creative potential and willingness to innovate of its users and stakeholders, who were its source of legitimacy and the main resource of change.

This implied a shift in focus from considering innovation as an end product –and the process as a means–, where the value is in the final result. Instead, innovation is considered as a service, where the value is in a series of processes and experiences enabling cultural change in the sector by allowing civil servants to become innovators.

In implementing this new approach, most of the interviewees agreed that the team's strategy was to strengthen and multiply the effects of the collaborative experiences that the Lab was delivering, by organising a process around them as a service designed, managed and provided by the LabGob within its different programmes. This, eventually, would lead to a more scalable approach to PSI, abandoning the idea of developing single intensive projects with public institutions and instead fostering, catalysing and supporting design-driven innovation processes in multiple institutions, each owning their projects and problems.

5.3.2. Developing an integrated approach of design for public innovation

Design had a double function in the process of creating and implementing the Lab: as a way of developing the service and as the main approach for delivering its offerings, as seen in Chapter 4. This led to a situation where it became integral to all aspects of the organisation, which was functioning while it was being designed, becoming a 'tool to align resources and structures around a purpose that serves people' (Junginger, 2009:7).

Junginger (2009) suggested that in this situation, design thinking and practice drive the generation of principles, methods, strategies and products that make an organisation useful, usable and desirable to the people it seeks to serve. This implies that managing and designing are not treated as activities that apply to different organisational realms, but rather that organisational problems also become design problems and vice versa. Junginger goes further and propos-

es that managing and designing –together with changing and organising– are intertwined activities and depend on each other, and it is innovating around people that gives them purpose and direction (2017).

To change the Lab's strategy, there was a need to reflect and make sense of the process internally with the team and externally with the Strategic Council to redesign the way that resources, people, activities and deliverables were organised. In a process that lasted more than three months, the team reviewed all the activities and methods in which they had been involved to unpack the key elements that needed to be adapted. This process focused on integrating the values that the design approach brought with the requirements and logics of the policy world.

Integrating the design and policy processes

The tensions between different traditions and cultures of thinking and doing that emerged within the Strategic Board were also present within the team. They were expressed as disciplinary tensions between analytical and creative thinking, between the use of words and images and between what was considered valid evidence between social scientists and designers.

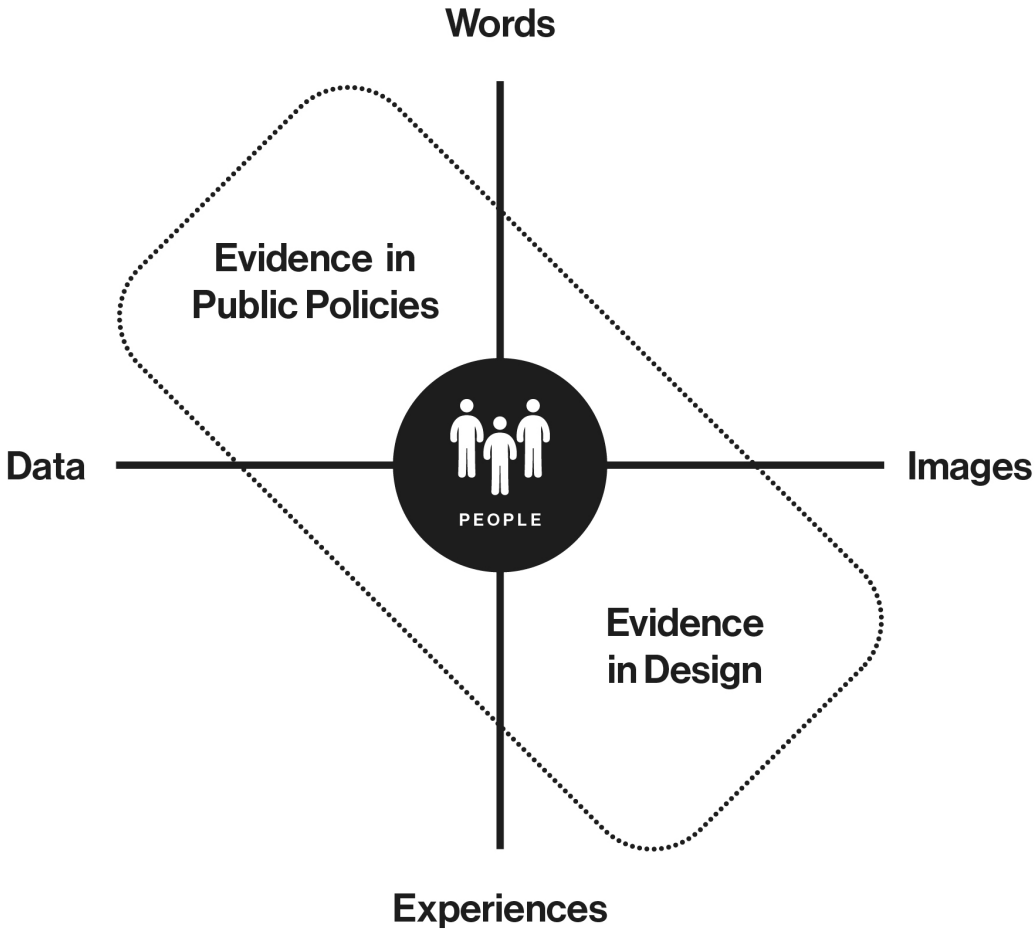
For example, it was observed that policies are enacted in the form of words –laws, regulations, and protocols, as depicted in Figure 5.2. Most of the evidence managed in policy-making comes from facts in the form of validated 'data', so other types of material are not considered valid. Design, on the other hand, is enacted in experiences that people live, evidenced in the form of images –diagrams, photographs, videos, and visual abstractions.

The problem is that most design practice does not rigorously consider the policy evidence and tends to expose and challenge the political institutions and policy professionals they seek to change (Bailey and Lloyd, 2016). And policy-making practice is resistant to non-science-based approaches for building evidence (McGann et al., 2018). These two cultures of practice clash when designing a public service. The challenge then, is to reconcile these worlds and encourage collaboration, with the focus on improving people's lives.

In practice, the integration of these two distinct practices became one of the main agendas of professional development within the team of the Lab. Three

elements were observed that helped to foster a more interdisciplinary way of working within the team.

Figure 5.2: The tensions between policy and design (LabGob, 2015)[33]



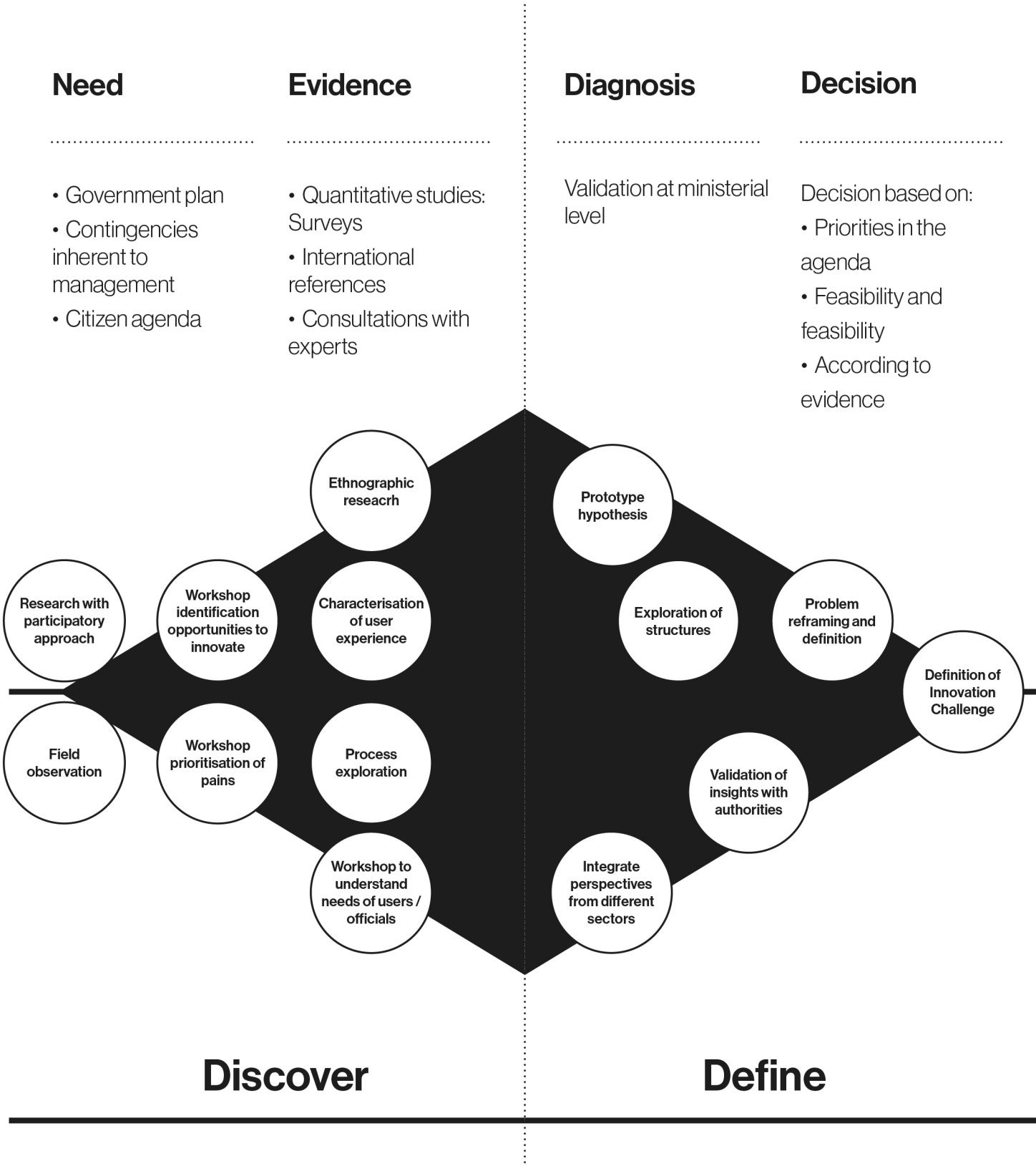
Integrating processes and activities

Aligning the service process with the policy process was important for building cognitive legitimacy and co-ownership with the project partners. After unpacking the service process, the team aligned activities and milestones with what they considered to be the existing policy process of many of the institutions. This was driven by an effort to reconcile two ways of operating. The team produced a draft model[34], as shown in Figure 5.3, that aligns a version of the double diamond

[33] A version of this argument has been published in López (2019).

[34] This model was developed by the Lab's team and presented in the Strategic Council. It has been redrawn but is presented here as it was with the purpose of providing evidence of the exercise.

Figure 5.3: Schematic alignment of the policy and design process (LabGob, 2015)



Planning

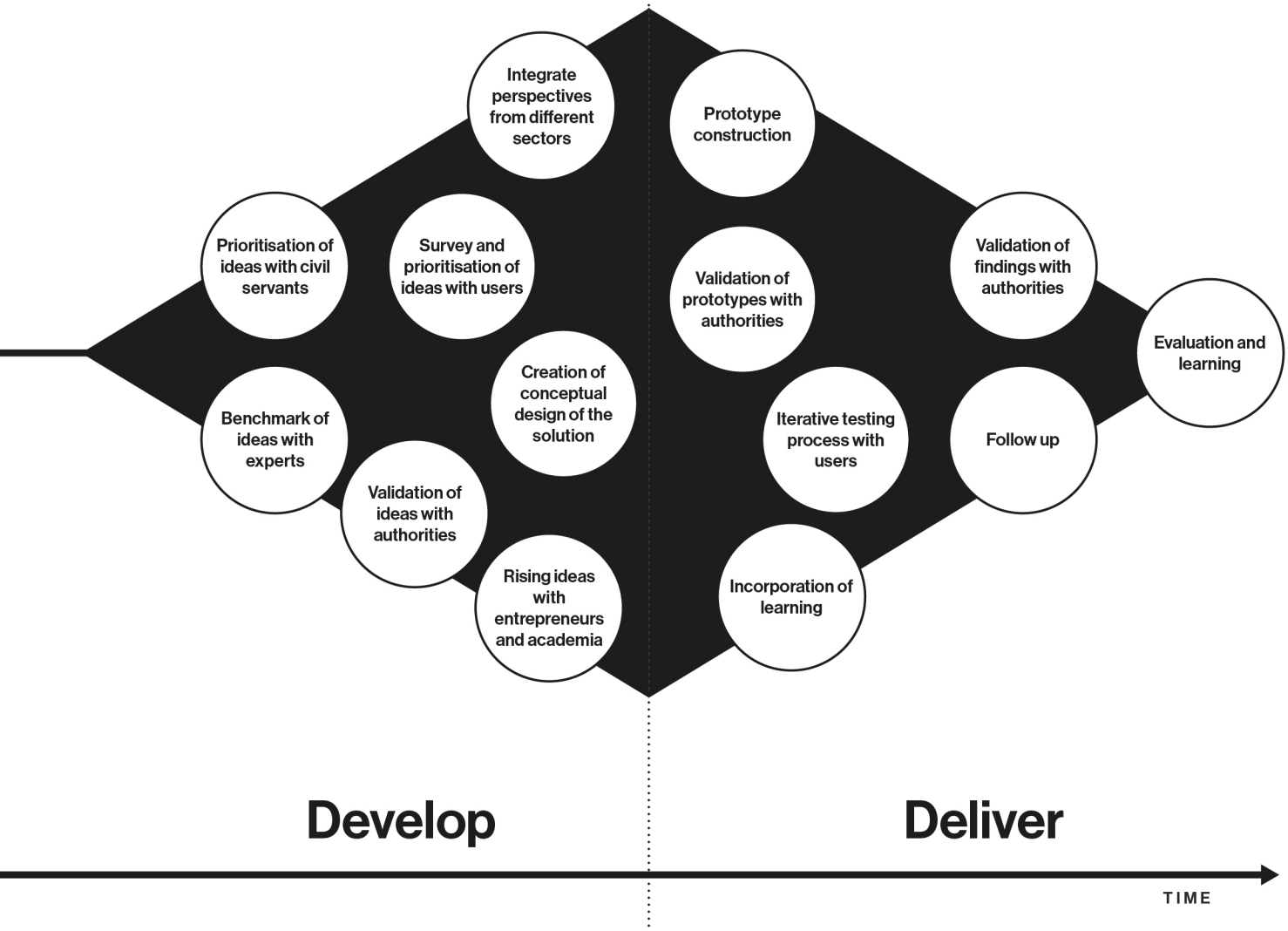
- Public policy design
- Action plan

Implementation

Officials and regional offices operationalise the design

Evaluation

- Internal evaluation
- Finance ministry
- Evaluation of results
- Impact evaluation



with the different stages of the policy process as it was framed in most of the public institutions with whom the Lab worked.

Both start with a definition of a policy agenda. While policy defines the need, looks for evidence and creates a diagnosis, the design process complements this with activities at the discovery and definition stage such as user research, user journeys, validation of insights and discovery workshops with users and stakeholders. The key milestone, in the middle of the process, is to define the innovation challenge. Here, the purpose is to validate the alignment between the policy objectives and the design objective. The hypothesis is that collaboration starts at the beginning. This milestone would be about decision-making and alignment.

In the second diamond, in the policy process, the heads of department create action plans, the civil servants in different locations start implementing them and there is an evaluation at the end. The design process proposes to undertake activities such as co-creation with local civil servants, building prototypes, validating and testing, and evaluating with the authority.

This model was used as a way of making sense of the opportunities for collaboration that the Laboratory could offer depending on the scope and scale of the problem. The activities in circles were later organised and packaged as toolkits[35] to be used by others in different moments of the consolidation process[36]. In the long run, this allowed the consolidation of a method that became the seal of the LabGob.

Re-organising the team

The key principle for re-organising the team was changing the way whereby the different disciplines were associated with the tasks they could perform. At the beginning, the natural orientation was that designers design and researchers research, leading to stagnation and confusion.

This confusion arose because, in reality, the management team was consistent with the expansion of a 'design attitude' in all the activities of the organisation. In the words of the Executive Director: *'In the Laboratory, we see everything as a design problem and as an opportunity for improvement, from the creation of a*

[35] See http://lab.gob.cl/metodologias/

[36] See Appendix 3.

new programme, the design of an event or even a meeting with the Strategic Council. There are always some users involved, some tensions between parties that need to be dealt with and a deliverable that needs to be designed, produced and implemented under these constraints' (INT-12)[37].

The team incorporated the 'double diamond' for framing and communicating their work to all the stakeholders involved. It was always used at the beginning of any presentation to indicate the current stage in the programme, where we were coming from and where we were going. The validity of this model in other contexts gave reassurance to the key stakeholders that we were using a 'proven framework'. It also worked as a structured way of communicating that uncertainty had a defined and specific stage in the process (discovery and development), but also that the process contained very concrete instances of delivery.

The introduction of the double diamond as a communication and design management tool was successful in different situations and later was adopted as a key element of the Laboratory's approach in its day-to-day activities. Most of the interviewees claimed the same: '*We use the double diamond for planning everything!'* This was acknowledged as a very simple framework for understanding a problem and searching for the best solution to address it within the constraints of the situation. This approach can also be seen in most of the internal presentations of the Laboratory.

Following this orientation, and once a clear process was in place (also framed as the double diamond), the team was reorganised with a more integrated and interdisciplinary approach, associating small teams with deliverables that aimed to support outcomes. For example, when there was a need to define a problem with a public institution, the outcome was set as: *'agreement on an area of intervention'* and with this brief, the team proposed the most appropriate method and design of the workshop, allowing interdisciplinary work at a micro-level.

Consolidating public innovation principles

The third element, was the consolidation of general 'public innovation principles' that were first introduced as a promise of key contributions of design at the very early stages, but then were embraced by the LabGob as institutional

[37] INT 12, September 2017.

principles. Table 5.1 illustrates how these principles were framed in a way that helped everyone working with the Lab to get involved in its culture of practice beyond the methods and processes, helping sustain a design attitude in other contexts. As well as serving as a key steering tool for aligning all the activities of the innovation process, they also served to clarify the value that the Lab was bringing to the policy process.

Table 5.1: Principles of public innovation at the LabGob (LabGob, 2018)

Principles of Public Innovation
Focus on people: following key human-centred design principles, the LabGob proposes a change in orientation from a focus on things to a focus on people, who are at the centre of any public problem. Involves starting any activity by understanding needs, assets, motivations and skills of the people involved, so as to support their involvement as active agents in the innovation process.
Co-creation: Complementing the focus on people, co-creation is the way in which the LabGob interprets active collaboration between various players. It consists of making spaces available, providing tools and motivating people to co-discover, co-define, co-design and co-implement impactful innovations.
Systemic approach: Integrating multiple perspectives through a holistic view of the problems and solutions. Inter-sectoral and cross-sectoral coordination combined with the use of systemic thinking allow the LabGob to break down disciplinary and organisational silos.
Experimentation: This is the method the LabGob uses to develop solutions and learning processes. Prototyping with a 'learning by doing' approach builds practical knowledge that informs, improves and facilitates solutions, allowing bad ideas to be discarded and good ones to be developed.
Focus on experience: The LabGob proposes new methods of understanding and communication, based on stories and visual thinking. It also provides an experience of innovation through space, identity and materiality that helps to make public innovation not only a formative experience but also one of cultural change.

5.3.3. Designing a material - symbolic imaginary of public innovation at the LabGob

A key element of the strategy, as explained in Chapter 4, was to create a brand and later a 'branded experience'. The implementation of this at scale, contributed to creating an imaginary[38] of the Laboratory, that was supported by a family of brands, the space itself and the 'tone' of communication that contributed to the innovation culture described earlier.

This branded experience helped build a visual world of the LabGob that reflected the aspiration of a 'new quality of the public sector', as explained in Section 4.4.5. This aspiration for a 'new quality' as a very persistent aim amongst many political leaders and directives, not only in the way things were done, but also in how they are communicated.

This aim perhaps reflects Streeck's (2012) observation that the impact of a new 'politics of consumption' on the old 'politics of the political' has been even more consequential than the privatisation of state functions and has also had an impact on the quality and perception of public goods. In this logic, the idea that the private is better, differentiated, apt and desirable, while the public is cheap, uniform, standardised and neutral, is pervasive. This material and cultural dimension of 'the public' is a key element to be changed. If there is a belief in 'The Public' as a superior value, public goods must set a standard of quality both in concrete and perceptual terms.

The LabGob made a big effort to change this perception developing a brand promise that was attractive and served as an attraction. *'When I saw the ad for Impacta, I really wanted to be part of that'*[39], said one of the entrepreneurs. This was consistent with what happened afterwards, where people felt that collaboration had a real value in practice: 'Without being part of Impacta we would never have met so many interesting people and now understand a little bit how the Government works', said another participant.

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[38] The term 'imaginary' has not been used here as an adjective –that is with the connotation of something illusory–, but as a noun, such as 'an Urban imaginary'. It refers to Jacques Lacan's definition of the concept as one of the three essential orders –along with 'the symbolic' and 'the real'– that structures all the human experience (Evans, 1996). 'The imaginary order is characterised by the prevalence of the relation to the image of the counterpart' (Laplanche and Pontalis, 1973: 210).

[39] From the workshops in January 2016

This material and symbolic imaginary facilitated the cultural change that the Lab was pursuing. Civil servants felt integrated in this visual world and it gave them a sense of status and validation within their contexts, where they demanded a similar level of 'design quality'.

As one civil servant said: *'The spaces and visuality of the public sector should all be designed so that people appropriate, want them and take care of them. Libraries, hospitals, schools, etc. The laboratory in the background is the tip of the iceberg and is the gem to go and tell all the ministries, gentlemen, your infrastructure and design investment budgets have to be used well so that they contribute to the work we do and improve the quality of what we deliver*' (INT-5)[40].

Figure 5.4 presents a selection of different elements of this visual imaginary. They were developed by the communications team of the LabGob.

[40] INT 5, March 2016

Figure 5.4: Visual imaginary of the LabGob (LabGob, 2018)

5.4. The consolidation of the LabGob as a service system for public value co-creation

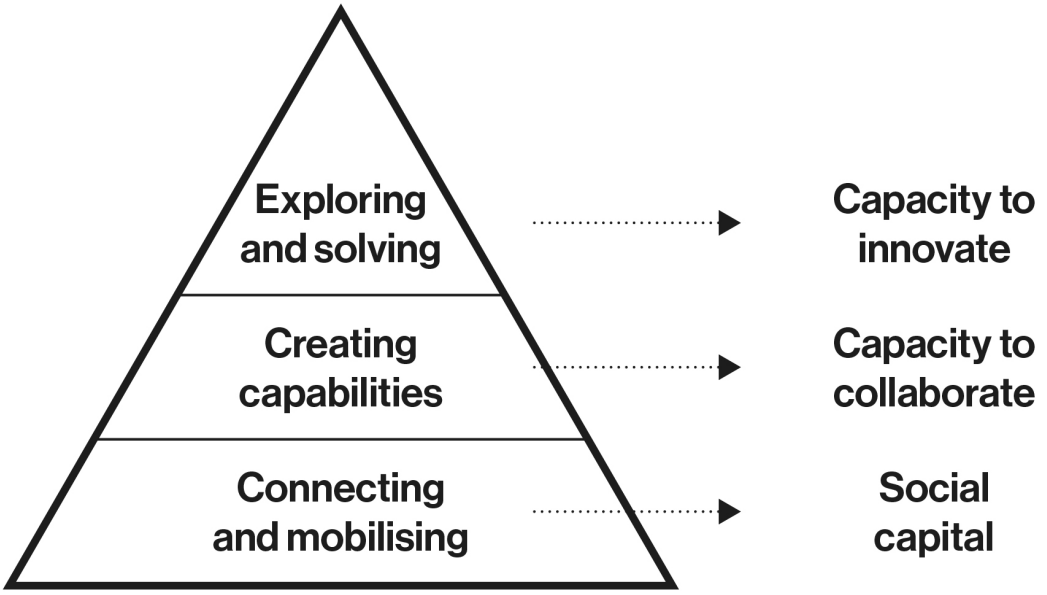
In less than three years between the launch of the Laboratory in May 2015 and the end of the presidential period in 2018, the initial strategy changed and evolved. From its original mission – promoting innovation processes and co-ordinating various players in different fields – and as a consequence of reorganising the Lab's offerings as a series of 'experiences of collaboration' in a 'process-as-a-service' as explained before, it was observed that in 2018 the LabGob evolved to become a 'service system', that was able to coordinate different players to collaborate in the co-creation of public value.

From a management perspective, 'service systems are value-co-creation configurations of people, technology, value propositions connecting internal and external service systems, and shared information' (Maglio and Spohrer, 2008). In this sense, and as seen before, the LabGob and its coordinated offerings represent value-co-creation opportunities for the different stakeholders, and other service systems, with whom it interacts. Through the proposed offerings and interactions, between civil servants, entrepreneurs, politicians, designers, public managers and others, the Laboratory is, in fact, facilitating a 'reconfiguration of roles and relationships among this constellation of actors in order to mobilise the creation of value in new forms and also by new players' (Norman and Ramirez, 1993).

Consequently, the Lab as a service system supported the emergence of a so-called 'ecosystem of public value co-creation', understanding an ecosystem as a network of interconnected organisations, connected to a focal organisation or platform (in this case the Lab) that incorporates both production (innovation processes, services and projects) and side participants (networks of partners, civil servants and public institutions) and creates and appropriates new value through innovation (experiences, learning, practices and implemented solutions that are co-created and appropriated by the Government and the innovators) (Autio and Thomas, 2013).

This theoretical analysis of the Lab as a service system helped in understanding that the different strategic functions of the Laboratory were organised to support the sustainability and effectiveness of this ecosystem as a public value co-creator. As can be seen in Figure 5.5, three key functions are transversal to the original streams of action (innovation projects, open innovation, and skills development programmes). These are organised in the form of a pyramid, where each level is needed to achieve the next one.

Figure 5.5: Schematic version by the author of the re-organisation of the strategic functions of the LabGob in 2018



At the base of the pyramid is the function of connecting and mobilising different sets of people, institutions and organisations who are willing to get involved in an innovation programme or activity. It is about creating the conditions for growing and sustaining the main asset on which the LabGob strategy is based: the inter-sectoral and trans-sectoral social capital of the public innovation ecosystem. This function is performed systematically, cross-sectorally and at scale, and is the basis of all the programmes of the Laboratory which, as we saw, are based on collaboration

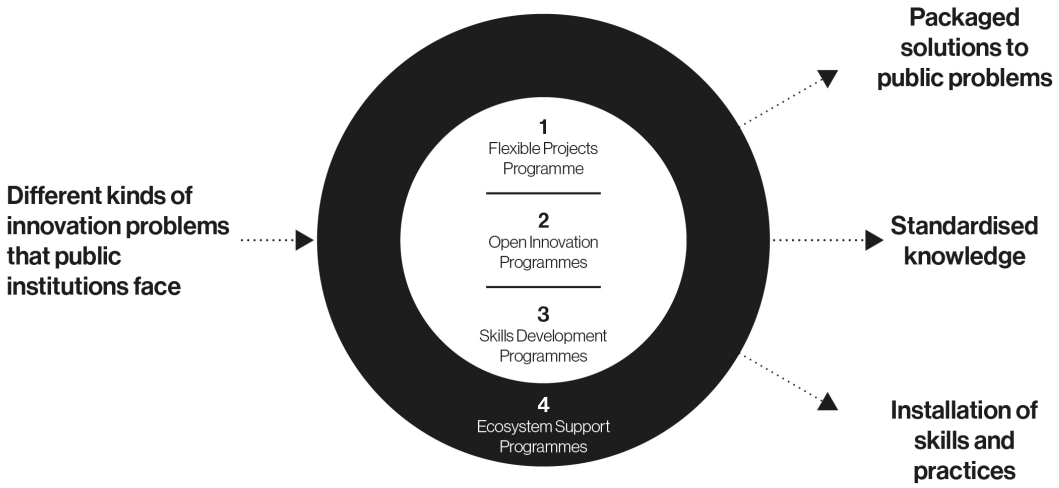
The second function is creating capabilities. This has to do with creating the conditions for the people who are willing to get involved in an innovation programme, to be able to do so. Although the Laboratory has specific programmes to this end, this function is also transversal, enabling effective collaboration. This

function has been conceptualised by the Lab and comprises three elements: motivation, skills and opportunities.

At the top of the pyramid is the function of exploring and solving, in the terminology employed by the Lab. It might also be termed ‘co-designing’, because it is about encouraging, promoting and supporting the creation, testing and implementation of solutions to public problems, based on the collaboration of a mobilised ecosystem capable of innovating. This function is the end goal of the Laboratory’s original strategy. However, as we have seen, its effectiveness is dependent on the capacity of the Laboratory to support a strong ecosystem.

Under the same framework presented earlier, the Lab’s offerings can be considered a diverse set of opportunities available for people and organisations to participate in value co-creation processes. These processes are, in fact, a series of ‘experiences of collaboration’ that are managed as a service. There are four kinds of programmes to address the needs of different segments, as seen in Figure 5.6 and described in Table 5.2.

Figure 5.6: Schematic version by the author of the programmes of LabGob in 2018



Although all these programmes are different, together they deliver three kinds of outcomes: implementable solutions for public problems, such as new services or products; systematised knowledge, such as research and case studies; and installed practices and capabilities, in the form of alumni of the training programmes.

Table 5.2: Lines of programmes of the LabGob in 2018

Line of Programme
1. Flexible Projects Programme, which is a tailored version of the innovation process to serve institutions that have resources and where the project is part of their core strategy. Here, the Laboratory works as a consultant. An example of this programme is 'Cuentas Claras', a new energy bill for the Ministry of Energy, implemented at national level with 8 gas and 34 electricity companies adopting the product, and benefiting more than 7.5 million households across Chile.
2. Open Innovation Programmes, which are the ones like Impacta, and are for institutions that require to open and socialise their agendas to build citizen legitimacy. Together with Impacta, which focuses on entrepreneurs, there is AULAB, which focuses on students and academics. Up to January 2018, Impacta has led three calls, in Health (Ministry of Health), Energy (Ministry of Energy) and Public Safety (Ministry of the Interior and Public Safety and the Inter-American Development Bank); while AULAB has conducted two: in Natural Disasters (Ministry of the Interior and Public Safety) and Tourism (Ministry of Economy, Development and Tourism).
3. Skills Development Programmes, this programme is called Experimenta, and is a training and support programme with a focus on civil servants, that is based on the development of pilot projects associated with specific internal challenges within a public institution. Up to January 2018, Experimenta, has trained 237 people from 33 public institutions.
4. Ecosystem Support Programmes. These are programmes which aim to support the ecosystem beyond the structure of projects. A key programme in this line is the Public Innovators Network, coordinated in partnership with the Civil Service, which brings together more than 6,000 civil servants from 15 regions across Chile through a digital platform and a series of events.

Between May 2015 and January 2018[41], the LabGob, using this model, was able to get more than 5,600 people from outside the state to participate in one of its programmes; it has interacted with more than 3,700 civil servants and has connected with 294 institutions outside the state. At the same time, it has devised 114 solutions, piloted 29 and implemented 4. A video of the LabGob as it was in 2018can be found at: https://vimeo.com/473970284/f0db0b80c8

[41] This information has been provided by the Lab and it is published in Laboratorio de Gobierno, 2018.

Chapter 6
Discussion

6.1. Introduction to the chapter

The purpose of this chapter is to give brief summary of the key findings of the research project. The chapter is divided into two sections. The first reviews the research problem and questions, and the second discusses the findings in relation to the gaps in the literature and the research questions.

6.2. Review of the research problem

Previous research, as seen in Chapter 2, has shown that design can be considered as an innovation capability that can be used in PSI to support the creation of public value at different levels (Ansell and Turfing, 2014; Junginger, 2017; Bason, 2017; Kimbell, 2015; Kimbell and Bailey, 2017). However, the impact of design in PSI is limited. This limitation is due to the lack of integration of design with policy processes (Mintrom and Luetjens, 2016; Junginger, 2013, 2017) and power structures (Tõnurist et al., 2017), and the weak legitimacy that design knowledge has as a source of policy evidence (Bailey and Lloyd, 2016; McGann et al., 2018). More importantly, the main barrier is the incapacity of design to turn the public sector's politico-organisational factors into matters of design (Hyysalo and Hyysalo, 2018). Moreover, the gaps in the literature appear to reflect the lack of experiences of integration between design and public management approaches to innovation in the context of PSI-Labs.

The introduction of design-led PSI-Labs within large public sector organisational systems may be viewed as an opportunity for the integration of these two worlds. However, the effectiveness and impact of the use of design in these contexts has not been researched enough.

This design research project aimed to further understand the value of design in Public Sector Innovation and to clarify the role that design can play in the different levels of government transformation when introduced and integrated into the politico-organisational context of a new PSI-Lab.

Using an ‘action research through design’ approach, this study explored how design was used to create a PSI-Lab inside the Chilean Government (LabGob) and to understand its value and limitations in supporting innovation processes at

different levels of the policy cycle when integrated as the core element of the LabGob.

This project fulfilled its aims by allowing a broad understanding of the problem of introducing and using design in PSI in different levels and dimensions. However, since the definition of the LabGob was itself both a matter of study and a matter of design –which provided a rich field for researching through practice– the focus was on understanding the processes and challenges of the design, implementation and delivery of the LabGob as a service.

The project sought to answer the following research questions:

RQ1 – About the integration of design into the politico-organisational context and policy cycle of PSI: What are the challenges and strategies for integrating design in the process of creating and implementing a policy and a service aiming to foster PSI within the Chilean public sector?

RQ2 - About the impact and scale of design as an innovation capability in the public sector: How can design be scaled as an innovation capability across government so it can increase its impact?

RQ3 - About the adaptation of design when practised in policy and PSI: What are the distinctive characteristics of public sector 'ways of thinking and doing' that might demand different understandings and new developments in design to be better integrated with the dynamics of the public sector?

After briefly exploring the problem in the literature (Chapter 2), these questions were addressed following a two-stage strategy. First, through a process of reflective practice, the research focused on understanding how design was being introduced and integrated into the policy cycle of PSI by designing and implementing the Chilean LabGob as a policy instrument. This is presented in Chapter 4.

Second, the research focused on understanding the challenges and strategies employed to deal with the specific politico-organisational factors and power structures of this PSI-Lab's specific context, so as to clarify the key elements that supported the evolution and scaling of the Lab as a service. This enquiry was conducted through a process of qualitative research. It combined a systematisation of the learning from practice, analysis of the documentation collect-

ed and produced in practice, and several interactions with participants and stakeholders through workshops and interviews. This is presented in Chapter 5.

In the following section, the key findings of the research are discussed in relation to the research questions.

6.3. Synthesis of findings

The research questions posed in this project were originally organised to help drive the process of the project. While the first one, about the values and challenges of the integration of design into the policy cycle, gave direction to reflective practice, the second, about the challenges of scaling design as an innovation capability in the public sector, provided a framework to understand the LabGob as an impactful service that was implemented and functioning at scale. The third one, however, which was about the adaptation of design when practised in policy and PSI, was oriented to a general reflection about the relationships and tensions between two different worlds of knowledge and practice.

Under this logic, I have divided the discussion of findings into three categories. The first summarises the findings related to how design was introduced in the policy cycle of PSI and how it was adapted to deal with the policy context's specific politico-organisational factors and power structures (RQ1). The second focuses on the findings related to how design was managed to address the challenges of scaling the Lab as a service (RQ2). The third discusses the findings on how design had to be adapted to address policy and PSI challenges (RQ3).

In each category, a header is added reframing the research question to clarify understanding of the key findings as a whole.

6.3.1. How to integrate design into the politico-organisational context and policy cycle of PSI?

In Chapter 2, it is argued that within the public sector, design is still mainly used for creating more people-centred services and is disconnected from other elements of the policy cycle (Mintrom and Luetjens, 2016; Junginger, 2013, 2017). Recent research shows that this narrow focus tends to be because its ap-

plication leaves aside essential elements of the policy process, avoiding issues such as the barriers to implementation, political feasibility or the constraints under which decision-making takes place (Howlett, 2020).

In the specific context of PSI-Labs, this lack of integration of design in the policy cycle is deepened by the lack of capabilities and authority to deal with large power structures limiting its influence and impact (Tõnurist et al., 2017). Moreover, previous research shows that the challenge of integrating design into the politico-organisational context and power structures of the public sector depends heavily on how design practitioners can turn the politico-organisational elements from an external factor into an internal matter of design (Hyysalo and Hyysalo, 2018).

As seen in the previous chapters, these challenges were overcome in multiple dimensions along the process. However, in synthesis, it can be argued that the effective introduction and integration of design into the politico-organisational context and policy cycle of the LabGob was driven by three main elements.

1 Embracing and developing a public design attitude

Design for policy and PSI was practised as an open, flexible and integrative approach and it was embraced as an attitude of turning politico-organisational factors into matters of design

Building on Boland and Collopy, (2004), Michlewski (2015) and Amatullo (2015), the practice of design as an attitude in this field was understood as a combination of distinct design abilities (skills, capabilities, aptitudes) that myself and the team applied during the process of designing, implementing and managing the Lab.

Evidence presented in Chapter 5, suggests that this orientation helped to turn various politico-organisational factors into matters of design, such as bureaucratic structures, political considerations and decision-making processes. From the dynamics of the board, to a meeting, an event or an open challenge, the LabGob embraced a design attitude for PSI as a ‘culture of practice’ that integrated elements of politics, policy-making, management and entrepreneurship, developing its own ways to ‘make innovation happen’.

This culture of practice was sustained and later expanded into all the dimensions of the LabGob, becoming integral to all its functions and programmes,

and consolidating its own PSI process and principles that were validated at the institutional level. This expansion of design into the organisation and its context led to strengthening the position of the Lab and enabled a bigger impact.

Further research is needed to define the attributes of this 'public design attitude' which are still vague. Qualitative research 'about' design and case studies in other PSI-Labs would be of great value to validate the claim.

2 Intertwining design and political activities for building legitimacy

The practices of design and politics were intertwined in building legitimacy and social capital across sectors to enable effective collaborative PSI within the specific power structures and dynamics of the context.

As explained in Section 5.2.3, politics was considered an enabler for introducing design by using it as an integral tool for building legitimacy for the team, the approach, and the Lab as a public organisation. This political legitimacy was built on different fronts: at the institutional level, by dialoguing and negotiating with authorities to leverage political support in various decision-making processes; and at the service level, by building a culture of practice supported by experiences of collaboration that helped to build a movement of engaged people behind, within and around the LabGob.

The cross-sectoral political legitimacy of the LabGob was based on distributing power both at the policy and service levels, giving stakeholders and partners visibility, responsibility and ownership of their efforts and projects. This helped to improve the cross-sectoral social capital and, by doing so, created new relationships and power dynamics that, in the end, reinforced the institutional position of the LabGob, which weathered the change of government and survived.

This finding is perhaps the most relevant of all, since the emergent literature is consistent regarding the gap between politics and design in the context of PSI. Further research into the relationship between design and politics in dealing with people, could open interesting doors for reflection on the practice and values of design, as well as for improvements in political action in the public realm.

3 Understanding policy design and service design as interdependent experimental activities

Design was introduced in the policy process by understanding its cycles as adaptive and dynamic and therefore policy design and implementation are two interdependent and experimental activities.

The strategy for designing the Lab as a policy instrument was based on the model proposed by Swanson and Bhadwal (2009), where policies are dynamic as they can be modified through a constant feedback loop with reality (see Section 4.3.1). The model suggests that policy design and policy implementation should be connected by flows of learning and change for making policies adaptive. However, from a design perspective, research shows that this dynamic and experimental logic is far from being a reality in PSI (Bason, 2010, 2017; Hill, 2012; Junginger, 2013, 2017) again because of constraints in the policy cycle, which leave design mainly focused on service delivery (Clarke and Craft, 2018).

The project was able to reconnect these two dimensions by establishing in practice from the start that the LabGob was simultaneously both a policy instrument and a public service. Following the idea that managing, designing, changing and organising are intertwined and interdependent activities (Junginger, 2017), the integration of design with entrepreneurship and management practices enabled a better understanding of the service as a start-up in the process of evolution, leading to a situation where the organisation was being designed at the same time as it was being managed and operated. The uncertainty that the original 'design attitude' towards the LabGob as a project brought in was mitigated by the integration of these practices and the frameworks they used. This led to the plan of practice explained in Chapter 4, where the processes of policy design and policy implementation became interconnected activities of designing, prototyping and managing.

The Lab's framing as a service that was being designed while it was evolving and functioning was initially possible because of the open approach to design explained in Finding 1. However, it was sustained because of the growing cross-sectoral political legitimacy explained in Finding 2. When the main asset of the Lab became the network of people involved in experiences of collaborative innovation, the need to address their multiple demands and contributions implied conducting an adaptive and dynamic process to change the service strategy and some of the policy elements, modifying the offerings, instruments, programmes and institutional framings during the process.

Further research into the relationship between design and lean entrepreneurship in the process of developing Labs as a service, would be of great value not only for PSI but also for big organisations struggling with transformation.

6.3.2. How to scale design as an innovation capability in the public sector to increase its impact?

The main barriers described in the literature to increasing the impact of design in PSI-Labs are related to elements in the previous findings. However, once these barriers are overcome, there is the challenge of scale. Research shows that the large majority of PSI-Labs embrace design in some shape or form. However, there is a similar gap regarding the lack of capabilities and authority to significantly influence upscaling of the new solutions or processes because of their small structures and their specialisation on 'quick experimentations' and limited ability to 'catalyse and push through public-sector-wide changes' (Tõnurist et al, 2017). This limited ability to effect change at scale is also influenced by the specific focus most have on the generation of novel ideas (Howlett, 2020), and treating policy designs as discrete, unitary constructions, ignoring that policy designs are instead nested and combined with a range of existing policy designs with which they interact (Clarke and Craft, 2018).

As seen in Chapter 5, the Lab as a service in practice was able to move away from using design solely as an approach for developing discreet solutions, and embraced design as an open and flexible approach for dealing with the diverse issues of policy and PSI. In synthesis, in addition to the previous findings, it can be argued that two additional elements drove design's scalability into a broader spectrum of the Chilean public sector.

4 Focusing on delivering a service of design-led collaborative experiences

Design was scaled as an innovation capability through an integrated process of experiences of collaborative innovation that was managed as a service.

The principal perceived value of the LabGob as a service, as seen in Chapter 5, was in its capacity to transform culture through collaboration experiences that led to new relationships and social capital among a diverse set of actors. This was consistent with the literature, where design seems to be helping to turn PSI into a 'process of collaborative design' (Ansell and Torfing, 2014) that, by opening up public bureaucracies and engaging a diverse group of actors in processes of creative problem solving, can exploit creative potential (Torfing, 2019) leading to cultural changes within public organisations.

However, these cultural changes tend to be attributed solely to the cognitive dimension of design methods, overlooking the power that sensory experiences have in changing the participants' culture involved in service innovation (Wetter-Edman, Vink, and Blomkvist, 2018).

The Lab then shifted the focus from considering innovation as an end product – and the process as a means – where the value is in the final result; to considering innovation as a service, where the value is in a series of processes and experiences enabling a cultural change in the sector by allowing civil servants to become innovators.

As seen in Section 5.3, the Lab reorganised its offerings, abandoning the idea of developing single intensive projects with public institutions and instead fostering, catalysing and supporting design-driven innovation processes in multiple institutions by offering a set of experiences of collaborative innovation that, supported by a material imaginary, could serve different purposes, were based on different design methods and skills, and co-produced different outputs along an integrated process of PSI.

Although there is emerging research on design skills and capabilities for PSI for the global north (which the LabGob benefited from), further research about the specific characteristics of design skills in Latin America would be of great value for expanding design into other governments in the region.

5 Turning the Lab into a service system of value co-creation

The consolidation of the LabGob as a service system of value co-creation led to establishing a public innovation ecosystem.

As a consequence of reorganising the Laboratory's offerings as a series of experiences of collaboration in a 'process as-a-service', the LabGob evolved to

become a service system (Maglio and Spohrer, 2008) that was able to coordinate different players to collaborate in the co-creation of public value (see Section 5.4). The LabGob and its coordinated offerings represent value-co-creation opportunities for the various stakeholders and other service systems with whom it interacts.

Through the proposed offerings and interactions between civil servants, entrepreneurs, politicians, designers, public managers and others, the Lab was facilitating a reconfiguration of roles and relationships among this constellation of actors to mobilise the creation of value in new forms and by new actors (Norman and Ramirez, 1993).

Consequently, it can be argued that the Lab as a service system supported the emergence of a so-called 'ecosystem of public value co-creation', which comprised a whole network of interconnected organisations (Autio and Thomas, 2013) and people around the Lab, who were able to co-produce different forms of innovation for different kind of users and stakeholders. This systemic organisation of the service enabled the LabGob to increase its impact and effectively introduce design at scale in the Chilean public sector.

This finding is the one that is most distant from the existing literature on design for PSI and for PSI-Labs in particular. Although, there is a substantive literature on service science and value ecosystems in the field of management, further research is needed in service-dominant logic for the public sector and specifically for PSI-Labs.

6.3.3. How design practice has to be adapted to address policy and PSI problems?

The tensions and relationships between the two different worlds of knowledge and practice represent further barriers to integrating design in policy and PSI, as mentioned in Chapters 2 and 5. This is a double-sided tension. On the one hand, policy-making practice tends to be resistant to non-science based approaches for building evidence (McGann et al., 2018) and design practice tend to universally privilege one particular policy style over others, failing to take into account the reality of policy mixes (Clarke and Craft, 2018). This divide is deepened by the generalised practice in the literature of enclosing design approaches within the single concept of 'design thinking', stressing the importance of solely

the cognitive elements of design and leaving out other aspects (Wetter-Edman, Vink, and Blomkvist, 2018; van Buuren et al., 2020).

The research has shown that there are different strategies to deal with these tensions, which can be summarised as:

6 Adapting design by understanding the cultural practices of the context

Design was adapted to the dynamics of the politico-organisational context by a reflective inquiry into the cultural practices of users and stakeholders.

As seen in the previous findings, when design was confronted with policy and PSI problems within the politico-organisational context of the Lab, different strategies were developed to integrate design in this field, from developing a public design attitude, to integrating politics, public management or lean entrepreneurship. In summary, the practice of design had to be adapted in relation to the subject matter and to integrate other practices and forms of knowledge to address these different subject matters.

According to Dorst (2015), 'when core principles are transposed to other fields, we need to delve much more deeply into the practices and adapt this understanding to the new use context' (Dorst, 2015:23). In this sense, the approach for adaptation was a design problem as well, involving understanding the ways of thinking and living of the users and stakeholders with whom we collaborated. It was a process of adaptation through adoption. Evidence of this is the early adoption of the public value triangle, the introduction of lean start-up techniques (that came from one of the team members who was an entrepreneur), the logic of the presentations and even the vocabulary used to name certain things.

Further research on how design practice in PSI-Labs changes in different contexts and cultures would be of great value to offer an alternative approach to the homogenisation of design thinking.

Chapter 7
Conclusions

7.1. Conclusion statement

Governments are increasingly implementing PSI-Labs to support public sector innovation. Although most of these Labs use design approaches to drive innovation, existing research shows that its impact on supporting these efforts effectively is limited. This limitation is due to the lack of integration of design with policy processes and power structures, the weak legitimacy that design knowledge has as a source of policy evidence and an incapacity to turn the public sector's politico-organisational factors into matters of design.

Through a process of ‘action research through design’, this project shows how design was used as a core capability to create, implement and operate a new PSI-Lab at the highest levels of central government. Through reflections on the process of practice, strengthened by a qualitative study of the case, this thesis explains how design was effectively introduced and integrated into the politico-organisational context and policy cycle of this new PSI-Lab, helping to increasing its impact and scale.

Research shows that integrating design into the politico-organisational context of PSI is possible when: (1) design is practised as an open, flexible and integrative approach and embraced as an attitude; (2) the practices of design and politics are intertwined in building legitimacy and social capital across sectors; and (3) policy-cycles are understood as adaptive and dynamic and therefore policy design and implementation are practised as two interdependent and experimental activities.

Once the barriers of integration had been overcome, the study shows that this specific PSI-Lab was able to scale design as an innovation capability across a broader spectrum of the public sector. The focus shifted from developing internal products towards a service capable of delivering design-led collaborative experiences, helping the organisation to become a service system of value co-creation.

Finally, the research suggests adapting design practices to the specific dynamics of politico-organisational contexts requires practitioners to conduct reflective inquiries into the specific cultural practices of their users and stakeholders.

7.2. Answering the research questions

This research sought to answer three questions. The reframed versions of the questions developed in the previous chapter are added as a heading maintaining the original below. The key findings in relation to these questions may be summarised as follows.

RQ1 How to integrate design into the politico-organisational context and policy cycle of PSI?

What are the challenges and strategies for integrating design in the process of creating and implementing a policy and a service aiming to foster PSI within the Chilean public sector?

The effective introduction and integration of design into the politico-organisational context and policy cycle of the LabGob was driven by three main elements:

1. **Embracing and developing a public design attitude:** design for policy and PSI was practised as an open, flexible and integrative approach that embraced an attitude of turning politico-organisational factors into matters of design.
2. **Intertwining design and political activities for building legitimacy:** the practices of design and politics were intertwined in building legitimacy and social capital across sectors to enable effective collaborative PSI within the specific power structures and dynamics of the context.
3. **Understanding policy design and service design as interdependent experimental activities:** design was introduced in the policy process by understanding its cycles as adaptive and dynamic, such that policy design and implementation are two interdependent and experimental activities.

RQ2 How to scale design as an innovation capability in the public sector to increase its impact?

How can design be scaled as an innovation capability up and across government so it can increase its impact?

Building on the previous findings, two additional elements drove design's scalability across the Chilean public sector:

4. **Focusing on delivering a service of design-led collaborative experiences:** design was scaled as an innovation capability through an integrated process of experiences of collaborative innovation managed as a service.
5. **Turning the Lab into a service system of value co-creation:** the consolidation of the LabGob as a service system of value co-creation led to establishing a public innovation ecosystem.

RQ3 How design practice has to be adapted to address policy and PSI problems?

What are the distinctive characteristics of the public sector 'ways of thinking and doing' that might demand different understandings and new developments in design to be better integrated with the dynamics of the public sector?

6. **Adapting design by understanding the cultural practices of the context:** design was adapted to the dynamics of the politico-organisational context by a reflective inquiry into the cultural practices of users and stakeholders.

7.3. Contributions

As outcomes of this research, my key contributions to knowledge are:

1 / Repositioning design in public sector innovation research and practice.

There is a consistent gap in the literature of design and PSI regarding the lack of integration between design and the politico-organisational factors and

power dynamic of the public sector. This research bridges that gap by repositioning design in PSI beyond the narrow understanding of design as design thinking. This repositioning considers design in PSI as an open, flexible and integrative approach with the following attributes:

- A legitimate complementary attitude and mindset to change the way public problems are framed and approached within the policymaking process.
- An activity that is not foreign to the politico-organisational factors of the public sector
- As a key organisational capability for creating and delivering experiences of collaboration at scale.
- As a valid set of principles, methods and practices for managing and designing collaborative PSI processes and service systems.

2 / A documented and validated body of knowledge from practice on how to design and implement a PSI-Lab in a large public sector system

By creating, gathering and making sense of detailed evidence throughout the project and this thesis –such as models, processes, frameworks and methods–, I created and documented a unique body of knowledge about designing and implementing a successful and impactful PSI-Lab at the highest levels of government. This body of design knowledge is a contribution to the fields of design and public management, as well as a useful tool to inform the development and deployment of future labs and to support design education.

7.4. Limitations

The limitations of this research project are related to making the findings valid, comparable and scalable. Despite the methodology has continuously been scrutinised to assess the validity of the research design (see Section 3.4.7), there are three key limitations to be considered:

Limitations of context

A natural limitation of action research and research through design is that it is context dependant, and findings are situated. However, the scale of the

project and the level of involvement can moderate those limitations. In this case, the limitations of context are related to the particular situation of the Chilean government system and its policy development processes, which are connected to the Spanish and Latin-American tradition and less related to other policy cultures.

Limitations of methods

The object of study is very rich and the methods used are limited to capture that richness. Although the methods employed are considered to provide process validity to the research, it might be beneficial to combine a new set of practice-based research with case studies per programme, to complete the picture and narrative of the LabGob experience.

Limitations of the position

Because of my direct involvement in the project, my position was mediated by my interaction with the team or mediated by the LabGob itself. This limited my ability to develop a more critical perspective and the findings are biased by my personal experience and involvement in the case. This position limited the dialogic validity of the research.

7.5. Implications and future directions

The implications are organised in relation to the potential three audiences of this thesis. Future directions are described for each one of them.

Implications for practice

The work done in the LabGob is an international reference for other PSI-Labs and practitioners in the field. In recent years this has allowed an expansion of similar efforts in the region and many public institutions that have experienced the LabGob are starting to procure service design for their own needs.

The introduction of design into the Chilean public ecosystem opened a new space for design practitioners, accelerating the growth of the service design market in Santiago. This has been accompanied by an expansion of the practice

of service design in Latin America around and beyond the LabGob leading to the emergence of a 'service design scene' in the region.

Over the last year, this interest has grown and the University of Chile introduced a Certificate of Executive Education in Public Service Design for civil servants and public sector managers. Interestingly it is hosted by the School of Public Administration.

Future directions for practice are related to the expansion and consolidation of this ecosystem of public innovators in other areas such as local governments and civil society.

Implications for research

This project can be characterised as exploratory research. The project touches on many dimensions of the practice of design and of the political- organisational context of the public sector. This broad scope is reflected in the findings, offering many new avenues for research. Literature about design and PSI is almost wholly focused on design thinking, yet there are few design studies that touch on the relationship between governmental politics and design.

There is scope for future interdisciplinary research projects between public administration and design that explore a better fit between the politico-organisational dynamics of the public sector and a broader understanding of design.

Implications for design education

The learning emerging from this study has influenced some elements of the educational curriculum of the RCA School of Design. The RCA Service Design MA and the Executive Education programmes have extended the learning to policy makers as well as design professionals in the government and elsewhere in the public sector in different countries around the world. Further adaptations and development of this learning could potentially emerge once this work is published.

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Appendices

1. Appendix 1: Index of practice annex

This is a detailed index of all the documentation gathered during the research project that was presented in the Viva. Documents that are not confidential and in English are digitally available through hyperlinks.

1. Government background documentation

1.1. Resolutions and Regulations

1.1.1. Resolution 50: Creates the Public Innovation Committee

1.1.2. Minute of the first board meeting

1.1.3. Five modifications of the regulations of the Lab between 2015 and 2017

1.2. Presidential speeches and documents

1.2.1. The Lab mentioned in the first 50 presidential acts

1.2.2. The Lab mentioned as part of the productivity agenda

1.2.3. The Lab announced in the first presidential address to congress

1.2.4. Presidential speech at the Conference Future State

1.2.5. Presidential speech at the first Aulab Prize

1.3. Policy background documents 2014-2015

1.3.1. Policy proposal for creating the public innovation committee

1.3.2. Explanation to the treasury about public innovation committee

1.3.3. Internal operational proposal for the Lab as a unit inside the public innovation committee

1.3.4. Methodology for selection of projects

1.3.5. Policy proposal on Public Innovation

1.3.6. Workshop of strategic definitions with key internal stakeholders

2. Documentation of processes and outputs of Action Cycle 1

2.1. Stakeholder consultations (minutes and notes)

2.1.1. Stakeholder map

2.1.2. Example of key internal stakeholder analysis documentation

2.1.3. Example of key external stakeholder analysis documentation

2.1.4.Example of documentation on meetings with international experts

2.1.5.Minute with learnings from stakeholder consultations

2.2. Innovation strategy documentation

2.2.1.Original project proposal to design the Public Innovation Committee

2.2.2.Five iterations of the strategy ending with the one presented to the board

2.2.3.Summary of the LabGob Strategy after Cycle 1 (english)

2.3. Narrative and brand strategy documentation

2.3.1.Narrative briefing

2.3.2.Brand proposal

2.3.3.Brandbook

2.4. Internal meeting notes

2.4.1.Sample of a meeting note

3. Documentation of processes and outputs of Action Cycle 2

3.1. Demo project report

3.1.1.Demo project summary in English

3.1.2.Demo project final report stage 1

3.1.3.Annex of the Demo project final report stage 1

3.1.4.Demo project report stage 2

3.2. Impacta Health documentation

3.2.1.Challenge call brochure

3.2.2.Official Open Challenge brief

3.3. First skills programme for public managers

3.3.1.Summary of the programme in English

3.3.2.Workshops material

3.4. Team description and on-boarding

3.4.1.Team roles

3.4.2.Overview of the team and review of the skills programme with Nesta

3.5. Progress reports

3.5.1.January 2015 Report

3.5.2.February 2015 Report

3.5.3.March 2015 Report

3.5.4.April 2015 Report

3.5.5.May 2015 Report

4. Practice progress reflections

4.1. Field notes

4.1.1.Sample of field notes (the rest is presented physically)

4.2. Research presentations, talks and dissemination

4.2.1.Summary of practice Feb 2015

4.2.2.Presentation in Berlin - Politics of tomorrow October 2015

4.2.3.Interim Exam June. 2016

5. LabGob official documentation

5.1. Presentations to the Strategic Council 2014 - 2016

5.1.1.N°1 December 2014

5.1.2.N°2 January 2015

5.1.3.N°3 March 2015

5.1.4.N°4 April 2015

5.1.5.N°5 May 2015

5.1.6.N°6 June 2015

5.1.7.N°7 July. 2015

5.1.8.N°8 September 2015

5.1.9.N°9 October 2015

5.1.10.N°10 December 2015

5.1.11.N°11 March 2016

5.1.12.N°12 April 2016

5.2. LabGob official documents on strategy and programmes 2017-2018

5.2.1.Future State conference proceedings

5.2.2.Overview of programmes 2017

5.2.3.Presentation on programmes 2018

5.2.4.LabGob Book

2. Appendix 2: List of interviewees

This is the list of interviewees of the 21 semi-structured interviews I did between 2016 and 2017. I conducted the interviews in three rounds: the first round with members of the team to reflect on the practice process in January 2016, the second round with the executive team to understand the evolution of the LabGob, and the third round with key stakeholders to better understand the value of the Lab. Both in September 2017.

Code	*Date*	*Role*	*Org Type*	*R/W Lab*	*Training*
INT 1	January - March 2016	Legal	LabGob	Team member	Law
INT 2	January - March 2016	Administration	LabGob	Team member	Public administration
INT 3	January - March 2016	Communications	LabGob	Team member	Advertisement and design
INT 4	January - March 2016	Contractor	LabGob	Contractor	Architecture
INT 5	January - March 2016	Programme Manager	LabGob	Team member	Public administration
INT 6	January - March 2016	Programme Manager	LabGob	Team member	Design
INT 7	January - March 2016	Executive Director	LabGob	Team member	Public Management
INT 8	January - March 2016	Programme Manager	LabGob	Team member	Business
INT 9	January - March 2016	Service designers	LabGob	Team member	Design
INT 10	January - March 2016	Communications	LabGob	Team member	Design
INT 11	January - March 2016	Programme Manager	LabGob	Team member	Business

Code	*Date*	*Role*	*Org Type*	*R/W Lab*	*Training*
INT 12	September - December 2017	Executive Director	LabGob	Leadership team member	Public Management
INT 13	September - December 2017	Civil servant	LabGob	Leadership team member	Public administration
INT 14	September - December 2017	Deputy Director	LabGob	Leadership team member	Advertisement and design
INT 15	September - December 2017	Head of Government	Local Government	Client	Architecture / Sociology
INT 16	September - December 2017	Head of Service	Central Government	Client	Public Management
INT 17	September - December 2017	Director	Central Government	Board member	Public Management
INT 18	September - December 2017	Director	Central Government	Board member	Engineering
INT 19	September - December 2017	Director	Central Government	Board member	Economics
INT 20	September - December 2017	Director	Central Government	Board member	Social work
INT 21	September - December 2017	Head of Service	Central Government	Client	Economics

3. Appendix 3: List of preliminary findings

Sixteen preliminary findings were structured after the first round of reflections. They were organised by the different dimensions where design was observed to play a role: (1) At the policy-institutional level; (2) At the service implementation level; (3) At the service management level; (4) At the service in use.

1. Introducing Design into the policy world at an institutional level
Finding 1 – A sustained design attitude towards the Laboratory as a project opened possibilities for its evolution as a concept and enabled a stronger institutional position.
Finding 2 – The introduction of a design approach at the institutional level produces significant tensions that require dialogue and flexible stewardship to reconcile different cultures of policy- and decision-making.
Finding 3 – For validating a design approach for policy at institutional level, it is necessary to build political and cultural legitimacy.
Finding 4 – The combination of a communicable design process with an entrepreneurial approach helped to manage the uncertainty that the design orientation brought to the implementation stage.
2. The design strategy in action: dealing with people-centricity in a multidimensional service
Finding 5 – Local governments valued the people-centricity of design as a practical way of implementing citizen participation in services, leveraging existing resources and opening a collaborative dialogue with the central Government.
Finding 6 – For senior officials, the people-centricity of the process implied a tension between the values prevailing in a local setting and the challenges of diversity, institutional ownership and complexity at the national level.
Finding 7 – Creating the conditions for allowing civil servants and public managers to become active agents of the innovation process, contributed to building a public innovation culture inside Government.
Finding 8 – Social capital and co-ownership were the basis for building trustworthy working relationships across sectors.
Finding 9 – Meaningful experiences of learning in practice, strengthened and enriched collaborative innovation processes.

3. The evolution of the LabGob: designing, managing and re-organising a service around people
Finding 10 – The reorganisation of the Laboratory as a service was based on the main outcomes of the action cycles, which were a small network of committed people and validated learning about their interaction with the service.
Finding 11 – For expanding and scaling the potential impact of the LabGob, the approach was to reorganise the offerings under a process of 'experiences of collaboration' that was designed and managed as a service.
Finding 12 – The introduction of transversal design principles for public innovation, contributed to breaking disciplinary barriers and clarifying the value that the LabGob was adding in supporting innovation across the policy process.
Finding 13 – The successful engagement of users and stakeholders with the LabGob was supported by a material and symbolic imaginary.
Finding 14 – The involvement of an international community of practice helped to strengthen the strategy, position and legitimacy of the LabGob beyond the local ecosystem.
4. The consolidation of the LabGob as a service system
Finding 15 – The LabGob evolved to become a service system for public value co-creation.
Finding 16 – Consolidating an innovation process with shared resources enables their scalable and flexible exploitation across and beyond the organisation, strengthening the diffusion of design in the public innovation ecosystem

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