DESIGN AS A NEW POLICY COMPETENCY

A Learning Environment for capacity-building in public management

Master thesis by Federico Rita

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COLOPHON

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A Learning Environment for capacity-building in public management

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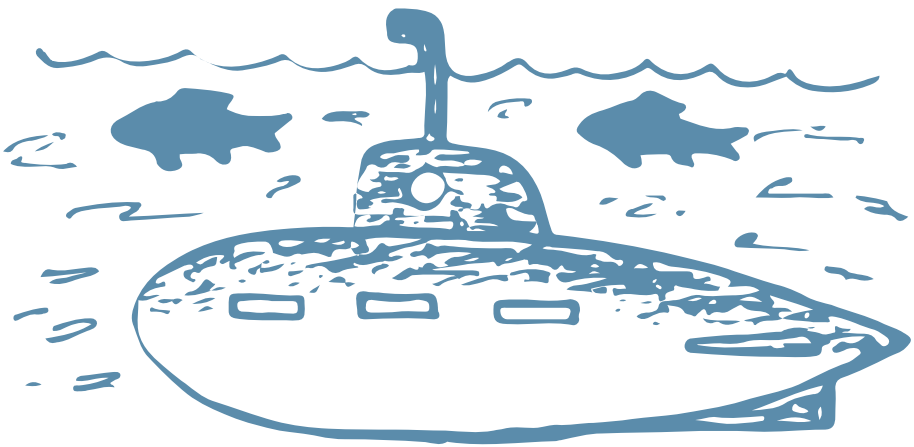

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Acknowledgments

During this exciting and challenging path, I found myself reflecting on the notion of time and what it means to me. I reached the conclusion that we as humans know very little about it, and we can merely measure it, but difficultly understand the real essence of it.
I enjoyed the time spent working on this project because it made me realise that I have not been "spending" time, but gaining it. The journey I have been through paid me back in experiences I could not have faced if it was not for this project, and more broadly, for the last two years of my life.
There are people I shared a lot of time with, and some others I had to make the most of the short period we had together, but regardless of the length of the moments spent together, I feel that you made my time wider and dense. I want to stop for a moment and express all my gratitude to you.
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Enjoy the read!

Abstract

Public management field needs to keep pace with contemporary and evolving problems, and therefore invest in and harvest capabilities to meet future scenarios. It is crucial to have a clear vision on the back end of social advising and a staff who is aware of the wideness of its impact. Public managers need to advocate for critical discussions between them, with the organisations they are cooperating with and with people who are going to benefit their decisions. By exploiting typical Participatory Design paradigms, such as a thorough exploration of the problem space, collaborative approach, and iterative development, the dASAP Learning Environment aims at adapting the design practice to the public management domain. The main goal is, therefore, to strengthen the foundation of the public management approach by reframing Design as a new policy competency. The Learning Environment is the result of a participatory and iterative process, carried out in a team setting. This endeavour to create a safe space in which sharing and nurturing capabilities provides a view on the potential of setting up and running a Design-Enabled Innovation process, while also creating an environment that supports innovation within the public domain. The dASAP Learning Environment does not only provide an array of tools and methods, but it goes beyond them by focusing on underlying factors such as values, knowledge, skills and attitudes, creating appropriate conditions for methods and tools to work.

Executive Summary

This graduation project was initiated with the intent of framing design as a new policy competency by exploiting the pedagogical potential of Design thinking knowledge, skills and attitudes. The goal was to initiate a design capacity-building process with the co-creation of a Learning Environment in which sharing and nurturing capabilities. During the research phase, two literature studies have been combined with a context study, carried out in the context of Tuscany, the region in which ANCI, the company I worked with, operates as the regional association of municipalities. The company was chosen to develop the project due to the outreach power that the selected public managers have within their context, and the strategic impact they can kickstart by practising, finetuning and diffusing design capabilities. Both the literature and the contextual studies have been integrated to constitute a Research Framework, covering the topics of Design Thinking, Capacity building, Problem Framing and Design Capabilities. Subsequently, the project scope was narrowed down, and two main research questions have been formulated to describe the final objective: What are the factors underpinning a Learning Environment for public managers? How might the Learning Environment allow for sharing and nurturing design capabilities? The process followed throughout the project development consisted of the combination of the Double Diamond design process and the Research Through Design approach. A Participatory design mindset has been adopted to organise the sessions, and to design tools and frameworks. Throughout the four Participatory sessions, the Learning Environment has been incrementally prototyped and tested with a team of seven public managers, and finally validated in the context. The sessions are structured in three Cycles, called 'Reframing the challenge', 'Designing the Learning Environment', and 'Evaluating the impact'. The insights gained from each Cycle contributed to reinforce the design and to inform the following iterations. The dASAP Learning Environment is the outcome of the design research process, and it reflects the Participatory design process since it is composed of tools and frameworks prototyped, finetuned and validated with the team of public managers. The project ends with the formulation of guidelines and recommendations, to allow for further research and the implementation of the proposed design in practice.

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CHAPTER 1: INTRODUCTION

This chapter introduces the project and provides a detailed overview of both the context and content of the study and describes the collaboration with ANCI Toscana and the involvement of other stakeholders. Finally, the project assignment is presented, with attention to the aim and practical relevance of the current design research.

1.1 Project Introduction

Over the past 20 years, design practice has been successfully adapted to several domains, ranging from business to technology and ICT, until reaching, in the last decade, the social and political spheres. The enhancement brought by Design-Enabled Innovation shows how industry, academia and public sector are increasingly becoming aware of the positive effects that the implementation of design tools, techniques and mindsets can bring to the development of new products and services. The incremental innovative power kickstarted by the adoption of Design Thinking in other fields has not gone unnoticed in policymaking, stimulating curiosity and attention within the public sector. Consequently, local and global governments are starting to include Design Thinking traineeship and education in their agendas, and in the EU, design practice has gained a central role in social development and innovation. It will suffice to consider the Horizon 2020 project, which includes many Design-led innovation projects in its portfolios.

However, there is a multitude of design-related approaches available, and often the Design Thinking application in public policies borrows more from the business domain than from the creative one (Dorst, 2019). As a result, design tools, methodologies and mindsets have a limited application in the public field, merely focusing on outcomes, and missing the opportunity to foster radical and diffuse innovation at an organisational level. Public managers can obtain notable benefits from a well-defined knowledge and shared ownership of Design Thinking, and Participatory design approach represents a valid means to fuel radical innovation in public policy because it can help to proactively diffuse design capabilities. Although participation and knowledge are two fundamental factors to ignite this transition, they are sometimes not enough. Teams of public managers need to value and acknowledge their strengths and transform their weaknesses in points of improvements, inspired by a fertile environment, which allows for critical discussions, sharing experiences and capacity building. These challenges set the ground for great opportunities within the public domain.

In the present graduation project, I will explore how Design Thinking knowledge, skills and attitudes can benefit public managers, by creating a learning environment in which design capabilities can be shared and nurtured. In parallel, will analyse what the role of designers can be in facilitating this

transition, and in contributing for Design-Enabled Innovation. Contemporary public managers need to be equipped for the complex challenges they are facing, and by acknowledging their potential and finetuning their skillset, they can reshape their dynamic environment, and make it resilient and adaptable to the problems they will face an address. The next section provides an overview of the project context, also presenting the involved stakeholders. At the end of Chapter 1, the Assignment will be introduced, pointing at the main objectives of the project.

1.2 Project Context

Defining a specific context is a fundamental aspect for the setup and development of a design and research project, because it allows to focus on a precise situation, yet keeping a holistic overview of the underlying dynamics related to the given setting.
In the case of this project, choosing a non-profit organisation which operates in the public management domain represents an opportunity to carry out a practice-based study, and subsequently, to develop a practice-based understanding of public managers' working and co-learning processes. The current project was carried out in the ANCI Toscana's headquarter, situated in Florence, Italy. Section 1.3 will present the opportunities for this project, specifically tailored to the selected context.

Due to the complex and multifaceted nature of the context, the prominent details characterising it are defined by how the users interact with it. Factors such as social dynamics, participation and design capabilities are peculiar features of the context, and therefore can have a notable impact on the research and design process. As previously mentioned, the intended users for the project are public managers, due to the outreach power they have within their context and the strategic impact they can kickstart by practising, finetuning and diffusing design capabilities.

The graduation project is part of the EU funded project DESIGNSCAPES, and it is the result of a collaboration between the Participatory City Making Lab, which is part of the Delft Design Labs, and, as mentioned above, ANCI Toscana, which are both members of the DESIGNSCAPES consortium. The involved stakeholders are detailed in the following sections.

DESIGNSCAPES

DESIGNSCAPES (Building Capacity for Design-Enabled Innovation in Urban Environments) is a 3-years Coordination and Support Action project funded by the EU and included in the European Horizon 2020 programme, whose principal aim is to facilitate the adoption of the intrinsic generative potential of urban environments as a catalyst to boost the dissemination, enhancement and upscaling of Design-Enabled Innovation. The DESIGNSCAPES consortium has been composed of a team of researchers and public managers from ten countries and regions of the EU (Bulgaria, Germany, Denmark, Greece, Spain, France, Italy, Netherlands, Portugal, United Kingdom), with a background and expertise in design science, urban planning, the economy of culture and creativity, smart cities, training and capacity building, innovation policy and business administration (visit https://designscapes.eu/ for more information).

As illustrated by Jane Jacobs in her book The Economy of Cities (1969), cities embed in their essence an organisational climate, which is the forge of innovation and generative systems. Therefore, DESIGNSCAPES targets multiple stakeholder groups within the urban context (public managers, citizens, researchers, practitioners and innovators). Consequently, not only will the project contribute to creating a network of social and cultural innovators, but it will also form a strong bond between policy, practice and research, contributing to making Europe a global leader in the domain.

Participatory City Making Lab

The Participatory City Making Lab (PCM) is one of the Delft Design Labs (DDL), initiated by the Industrial Design Engineering faculty. The Lab's expertise lies in Participatory Design within urban contexts, and its objective is to coordinate projects aimed at exploring the interconnections between public administration and grassroots initiatives (visit https://delftdesignlabs.org/ for more information). This graduation project is part of PCM Lab, and it represents an opportunity to apply Participatory Design knowledge and practice in a public management context abroad.

ANCI Toscana

ANCI Toscana is a non-profit organisation, operating as the regional association of municipalities in Tuscany, Italy. ANCI aims to support, coordinate and train representative groups of municipalities' employees, to guarantee their organisational and financial autonomy. The organisation represents a bridge between local communities and organs of State, creating a network for public managers and policymakers to connect and exchange information and good practices. As an organisation that manages projects with different municipalities and supports a vast network of civil servants, ANCI Toscana has a broad outreach and communicative power. By designing with them, the goal is to evaluate how design practice can support public managers' way of working by transferring to them Design Thinking knowledge, skills and attitudes. To do so, it is crucial to consider both their context and the way they interact with it at a local level.

After providing an overview of the project context and the involved stakeholders, the next section introduces the Assignment with the related aims and objectives.

1.3 Assignment

In an Open letter to the Design community (2017), Manzini and Margolin addressed the urge for design practitioners and researchers to focus on the role that design can play in building and nurturing skills to enable citizens' participation.

When analysing the nowadays public debate, and the state of participatory governance, indeed, it is possible to observe a contemporary form of alienation, mainly related to unilateral public decision-making processes, which spot on a reduced level of citizens' involvement in collective decisions. Infrastructuring towards the 'publics' covers here a primary role because it represents the process of identifying and forming attachments, social and material dependencies and commitments of the people involved (Latour, 2004; Marres, 2007).

According to Manzini (2015), the 'diffuse design' process, which is the act of enabling non-design-trained individuals to nurture their intrinsic design capabilities, is likely to allow those individuals to apply the process by themselves on other individuals. Therefore, it can be assumed that after understanding the potential of Design Thinking (knowledge, skills and attitudes), public managers would be aware of the social impact they can foster employing these techniques and generate an innovation loop by involving citizens. Here lies the principal aim of the project:

To transfer Design Thinking (knowledge, skills and attitudes) to public managers by designing a learning environment in which sharing and nurturing capabilities and enable them to improve their way of working in a customisable and scalable way.

By crafting a learning environment in which actively sharing knowledge and capabilities, the opportunity is to rephrase contemporary political values and enable public managers to open to citizens with a new awareness and more confidence, allowing for long-lasting mutual reliability and active collaboration.

Exploring how a learning environment - which is the resulting force of a Design Thinking course and a safe space in which the same will be applied - can empower public managers regarding their role and their relationship with the citizens. Specifically, such a constructive design research approach allows discovering the main problems while designing (Slingerland, Mulder & Jaskiewicz, 2018). The presented study, therefore, not only delivers a design intervention but also generates guidelines for using the learning environment to foster and nurture new policy competencies.
Chapter 1 detailed the context and presented the assignment. The second chapter will guide the reader through the reviewed theory and the contextual study, covering the topics of Design Thinking, Capacity building, Problem Framing and Design Capabilities. The connections between the cited concepts are explained and will later inform the project approach and the next stages of the design research process.

CHAPTER 2:
RESEARCH FRAMEWORK

This chapter presents the Research Framework adopted for the current project, which integrates literature review and contextual studies, to formalise an all-round approach, address the individuated design problems, and explore the opportunities within the context. Altogether, the takeaways from the literature and contextual studies, will be synthesised and inform the project approach, which will be detailed later in Chapter 3.

Introduction

Before describing the three studies integrated into the Research Framework (see Figure 1), the goal of it will be clarified, together with the research questions leading the different lines of inquiry, and the approach selected for conducting the research.

Objective

The objective of creating a Research Framework for the current project is to integrate literature research and contextual study, to alternate analysis and validation, and to later conceive an approach to sharply address all the challenges individuated within the context. The selected topics for this preliminary analysis are Design Capabilities, Design Thinking, Problem Framing and Capacity building.

Approach

The Research Framework integrates two literature reviews and a contextual study. Each one of the three studies will present at the end of it a set of critical takeaways informing the following research. The lessons learned from every study will come together at the end of Chapter 2 and drawn back to the Research Framework. Each phase is accompanied by a research question, to keep a steady focus on the main learning goal intended for the study.

Research Questions

The research questions formulated for the studies conducted contextually to the Research Framework are as follows:

- ***Literature study 1:*** *How can Design Thinking impact and improve public managers' way of working?*

- ***Contextual study:*** *How is Design Thinking conceived and implemented in the context? What are the main opportunities?*

- ***Literature study 2:*** *What are the elements of Design Thinking that can benefit the most the public management field? How can these elements be applied?*

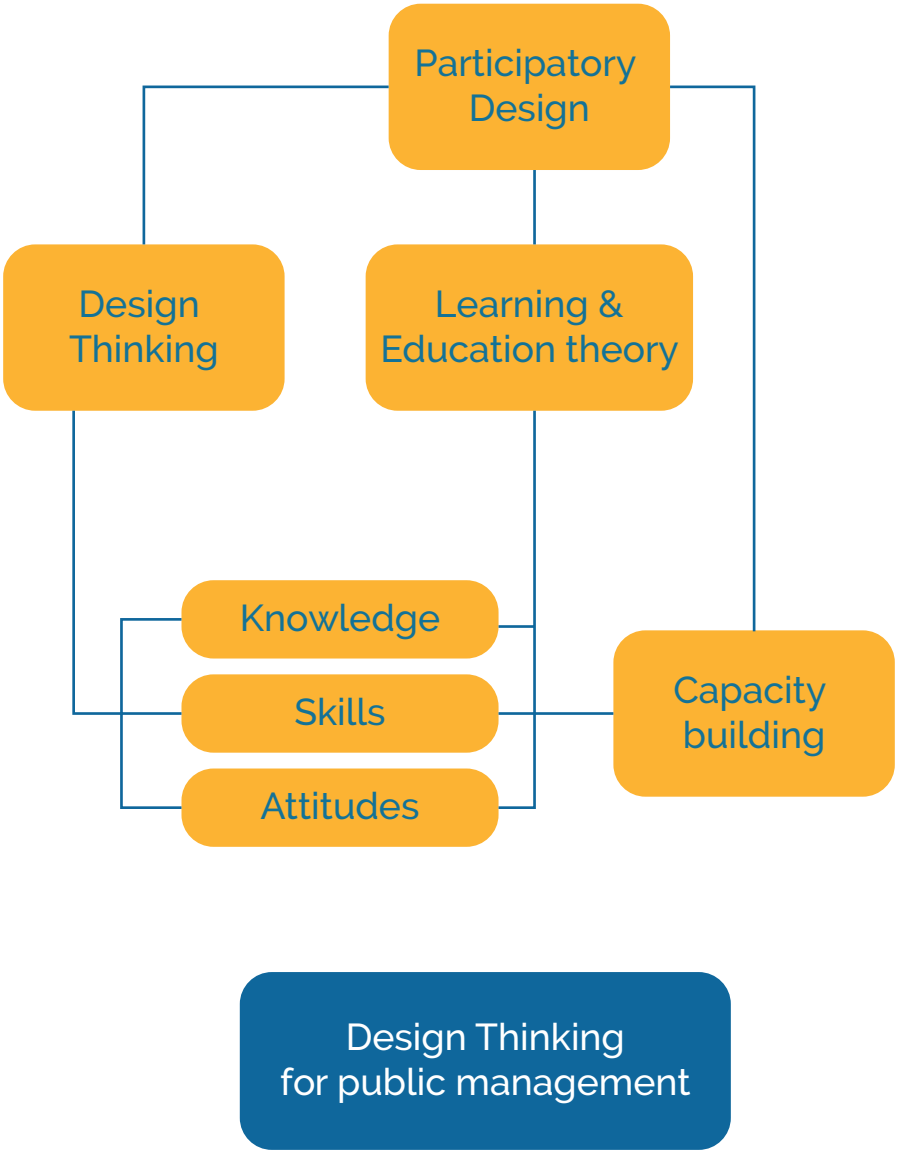


Figure 1: Research Framework

2.1 Literature study 1

The current section presents the first literature study, focused on the themes of Participation & Design Capabilities and Design Thinking for public managers. The topics represent the early steps of the Research Framework, and they are chosen as a starting point because they can disclose relevant knowledge to help to analyse the context in the following contextual research (see Section 2.2) and to get more depth in the second literature review (Section 2.3). The main takeaways from this first literature study are listed at the end of this section.

2.1.1 Participation & Design Capabilities

Participatory Design (PD) is a practice born with the aim of democratizing workplaces and empowering skilled workers, by making them act in public decision making within their companies (Björgvinsson, Ehn & Hillgren, 2010). However, due to historical transitions we witnessed in the last two decades, such as globalisation, latest IT implementations, and significant changes in the political landscape, PD has grown, and it has been scaled up to a bigger context: the human public and relational sphere in cities. Therefore, to consciously design for such a transition, it is crucial not only to strive for an outcome, but also for understanding how such changes are conceived, enacted, governed and managed (Boehnert, Lockton, & Mulder, 2018, p. 892). The design process plays a central role, representing a holistic view of the interconnectedness of social practices and human values and capabilities.
The general perspective of PD shifted from "democracy at work" to "democratic innovation", from equality to equity and from low to high polarity amongst public managers and subsequently citizens, thanks to the agonistic approach, framed by PD methodologists (Kensing & Blomberg, 1998). This change of polarity affected the citizens' involvement in the public debate, by decentralising it and making the antagonism prevail on the agonism. Hence, the difference was about the context of PD, from a more private and therefore comfortable discussion to a public and complex one. Complexity entails a multitude of forces that we can control and channel (Portugali, 2011), but difficultly foresee. In other words, we have seen how publics grow around attachments in the public debate (Le Dantec & DiSalvo, 2013), and therefore around practices. However, participants need regulations and rules to reach a consensus through an agonistic debate, based on a constructive and

dialogical competition, as opposed to the antagonistic debate (Mouffe, 2016). Consequently, the designer has been recognised as the one that can act as a facilitator and mediator (Manzini, 2015), to ease this transition and nurture citizens' skills more than merely teaching unilaterally. Here lies the need to foster productive and bilateral collaborations between public managers, intended as safe spaces in which social innovation can flourish, and skills are shared, nurtured, and continuously influence and support the development process.

2.1.2 Design Thinking for public managers

The term 'Design Thinking' has been brought for the first time to the attention of design practitioners and researchers by Rowe (1987). Back then, the primary intent was to gather, describe and formalise the techniques and approaches used by designers to deal with highly complex problems. A few years later, Buchanan (1992) defined problems peculiar to design processes as 'ill-structured' and 'wicked', due to their fluid and open nature. Many different models of Design Thinking have been conceived since then, bringing together knowledge from multiple fields, such as psychology, education and design methodology itself. Throughout the last twenty years, several academics and firms advocated for spreading Design Thinking amongst non-designers, to allow them to evaluate and analyse problems with the aid of design methods (Brown, 2008; Dorst, 2011; Dorst, 2010; Kimbell, 2011).
The notoriety gained by DT resulted in the creation of innumerable models (IDEO, Stanford Design School, Potsdam University, British Design Council, etc.), pointing to one end at the need of diverging to gather a deeper understanding of the broader field, and to the other at the increasing complexity of contemporary society.
As Dorst (2019) states, nowadays' problems are becoming 'more open, complex and increasingly networked', reflecting the intricacy of the human reality. However, complexity is wrongly perceived as an exclusive property of the outside world, leaving behind the one related to humans' inner contradictions (Stacey, Griffin & Shaw, 2000; Stacey & Griffin, 2007).

Design Thinking is often regarded as a means to develop 21st century capabilities (Mosely, Wright & Wrigley, 2018; Noweski et al., 2012; Trilling & Fadel, 2009), by providing tools and mindsets to address evolving challenges, and filling the gap between the present with the future of a given problem.
Nowadays, Design Thinking can be broadly defined as an ensemble of

principles, practices, mindsets and techniques (Carlgren, Rauth & Elmquist, 2016) (see Figure 2). These elements together reproduce how designers frame and approach design problems, allowing others (designers and non-designers) professionals and academics to replicate their way of working. It is a human-centred, action-oriented and iterative process (Cohen, 2014), with a significant focus on participatory mindsets, that make it egalitarian (Sanoff, 1990), and based on the principle that 'all people are creative' (Naranjo-Bock, 2012). Design Thinking consists of an extensive set of activities, such as brainstorming, prototyping and testing, creative problem solving, etc., to be carried out in a multidisciplinary team setting and by keeping the users not only as a central focus of the process but also by making them part of it. Plus, the concept of Design Thinking involves a meticulous way of gathering and organising activities and making them beneficial for the intended audience. Altogether, this networked and diverse, yet structured set of actions has grown in relevance throughout the last two decades, and gathered on itself the attention of countless companies, particularly in the management domain.
However, it has been observed a significant discrepancy between the academic conception of Design Thinking, and the way it is applied in practice (Dorst, 2010). Sometimes, indeed, it looks like the cited domains are developing two different notions in parallel, without needing to converge to a common ground and discussing the overlaps.

Managerial Design Thinking and 'Designerly' way of thinking

The Design Thinking discourse has been disclosed to a broader public only in recent years, causing various misunderstandings on its meaning and more importantly, on the extent of its impact on contemporary complex problems in practice. Johansson-Sköldberg, Woodilla & Çetinkaya (2013) stressed the distinction between 'Managerial Design Thinking' and the practice of 'Designerly Thinking' typical of the professional designer's approach. The second instance straightforwardly points at the procedural and practical aspects of the application of design knowledge, skills and attitudes, while the first one put primary importance on strategic elements. In one of the most popular articles on Managerial Design Thinking, indeed, Brown (2008) pitched it as a methodology finalised at economical value generation, to make it appetible to commercial companies. However, there are no major differences in effectiveness between Design Thinking and Designerly way of thinking, and their usefulness is mainly related to how they are transposed to other fields.

Adoption and Adaptation

There are two different patterns of appropriation of Design Thinking by academia and practice of other fields: adoption and adaptation. In the first case, methods, techniques and practices (Max-Neef, 2005) are gathered and applied to another domain or, without being modified nor elaborated. Usually, adoption does not raise new discussions and therefore, foster development in the 'parent field' (Dorst, 2015). On the other hand, adaptation often implies the transposition to other fields with a certain degree of abstraction from typical design practices, with an indirect connection of these notions to related needs individuated in the given area. This aspect implies a profound understanding of the practices and indeed an adaptation to the new context of use. The results of this process foster interexchange at a deeper level between both the domains. The 'parent field' in this case is likely to be positively influenced.

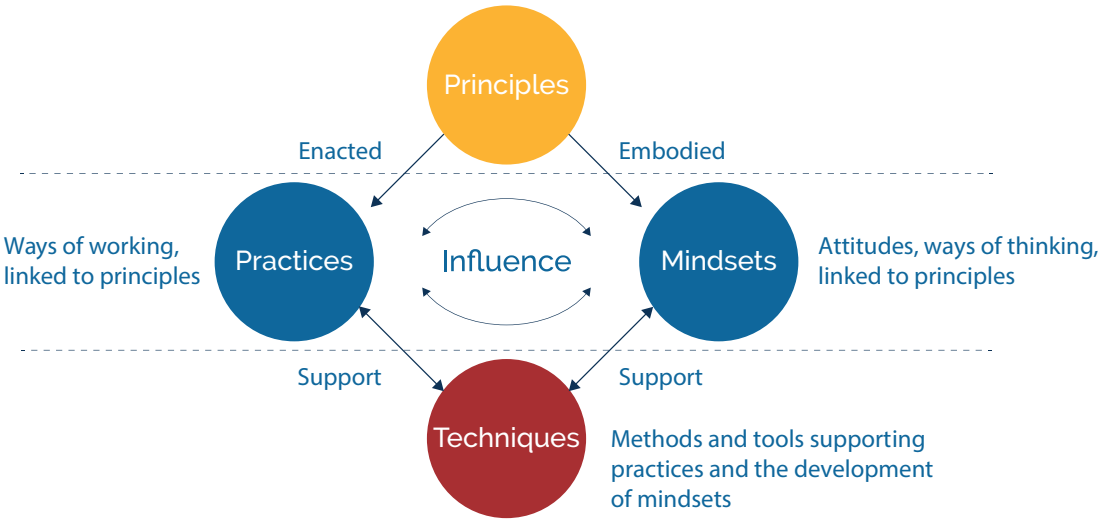


Figure 2: Design Thinking: principles, practices, mindsets and techniques

2.1.3 Design Thinking relevance for public managers

Usually, the problem to be solved in design is not the focal point of the solution process, especially in complex fields as the public domain, which is characterised by intercommunicating issues. There are countless pieces of evidence of how Design Thinking can benefit the public sector and the different practices linked to this domain. The main objective to make DT work is to codify the design process in such a way that allows non-designers to use it and understand it in a clear and unbiased way. Public managers are familiar with problem-solving approaches and strategies, but often there are difficulties in recognising and framing the problem in the early stages of the process. Design Thinking represents a valuable resource for societal development fostered by the public realm, because it can overcome the traditional problem-solving setting, and move to a holistic approach, allowing public managers to decompose complex problems in sub-challenges (Hertogh & Westerveld, 2010).
Moreover, Design Thinking can benefit of a Participatory mindset, which is – according to Sanders (2014) – built around three main techniques: telling, enacting and making. Together, they represent an avenue to access people's tacit knowledge rooted in their everyday life (Sanders & Stappers, 2008).

To conclude, the relevance of Design Thinking does not lie in the mere application of a pre-constructed methodology or toolbox since they can either be too broad - therefore not in line with the desired scope - or tailored on other types of needs and values.
The value of Design Thinking liaes in a real-word oriented and empathetic declination of it, favouring a reflection-in-action mindset (typical of design), over a reflection-on-action one can help with dealing with uncertainty and moderating conflicts (Guindon, 1990).

Key takeaways | Literature study 1

• Participatory mindset can empower public managers through Processes, Principles and Tools

• Design Thinking represents for public managers an opportunity to adopt a holistic approach and the possibility to decompose problems into smaller challenges

• Public managers are familiar with problem-solving methods and strategies, but often struggle to recognise and analyse the problem in the early stages of a project

• Public management approach can be notably enriched by mapping the values to design for

2.2 Contextual study

The contextual study described in this section represented the first opportunity since the beginning of the current project to get hands-on experience of the context. The study was carried out in Lucca, Tuscany, during an international meeting of public managers and policymakers, happened in the occasion of the final presentation of an EU-funded project involving associations from Italy and France.

The first Literature study attempted to provide answers to the question of how Design Thinking can impact and improve public management practice, and the collected takeaways pointed at opportunities to strengthen public managers' approach in the problem area of the design process. The scope of the contextual study is to answer the following question: How is Design Thinking conceived and implemented in the context? What are the main opportunities? Building on the lessons learned during previous literature study, the present contextual research aims at observing how public managers address problems, to validate the insight from prior iteration and to generate more opportunities for further investigation.

Figure 3: Plenary discussion during the creative session

2.2.1 Contextual study: Final presentation of the Racine project

Introduction

Racine is an EU-funded project focused on valorising cultural heritage in rural areas. The term Racine in French means roots. Roots are essential and represent how communities are nurtured by their own environment. Here lies the ambition of this project to create long-lasting bonds between communities and the cultural heritage of their territories. The project involved parties from several regional and municipal associations in Italy and France. The final presentation consisted of interventions from public managers, policymakers, and academics, and a creative session, in which the audience was divided into four groups, with the final goal of ideating a diffuse museum and the strategies to link it to its context. The event involved the use of co-design tools, and the session (Figure 3) facilitated by a private company from Florence, called Sociolab.

Data collection

During the study, I observed and took notes of how people act and behave while carrying out design-related activities, with attention to how they approach and address problems. Observation is chosen as a data collection method due to the large size of the event and the tight schedule of it because it allows following the activities while researching and taking notes in a non-intrusive way.

Set up

The audience was divided into four groups, corresponding to four different rooms with related activities. The objective was to stimulate Problem-Solving capabilities by using co-design tools. A facilitator was assigned to each team.

Discussion

The insight gathered during previous literature study regarding the need for strengthening the back end of the public management approach has been confirmed in the context. It was noticed, indeed, the tendency for public managers to directly jump to conclusions, without thoroughly analysing the problem. During the sessions, Design Thinking was mainly used functionally, more than pedagogically, resulting in a game instead of a way to benefit the creative process. The co-design tools were called 'games' and mostly used

as a discussion-guiding tool (e.g. receiving the ball was an invitation to talk). However, at the end of the session, participants recognised the value of working differently and using tools to create solutions together. The aspect of "Being all at the same level" was particularly appreciated, therefore the democratic vocation of the Participatory approach was clear to the participants. At the end of the event, during the networking session, I had the chance to discuss with several participants. Here are the statements that stood out the most:

- An 80-years-old teacher, which is the administrator and curator of a diffuse museum in Liguria, Italy, mentioned being "entertained and stimulated by this new way of thinking together."

- Two public managers from the municipality of Carcassonne, France, said: "The tools we used helped us to communicate differently."

Key takeaways | Contextual study

• There is a need for clear and structured communication of what Design Thinking is, as there is not a shared understanding of the topic

• Public managers recognise the value of collective thinking facilitated by design tools since it allows for a democratic and productive dialogue

• Design Thinking is adopted functionally, more than pedagogically

2.3 Literature study 2

The contextual research confirmed the need for a more structured approach in the back-end of public managers' way of working and showed how design is used more functionally than pedagogically within the analysed context. Building on the takeaways from previous researches, this study focuses on how Design Thinking should be facilitated and diffused in public management and on the aspects that can bring Design-Enabled Innovation in the field. Therefore, the goal is to answer the questions: What are the elements of Design Thinking that can benefit the most the public management field? How can these elements be applied?

2.3.1 Facilitating Design Thinking to public managers

The design practice offers in the public realm the unique opportunity to foster collective creativity because it allows to tolerate, decompose and approach complexity and to flatten hierarchies by using Participatory mindsets. In such a way, it is possible to one end to gather a deep understanding of Design Thinking knowledge, skills and attitudes, and to the other end, it will be possible to disclose different ways of framing the approach according to specific and relevant functions that can vary accordingly to the field of application. Subsequently, the challenge will be discovering what kind of tools are suitable, and how to tailor the approach to the desired target group, focusing on values and experiences.

Expertise in Design

Developing expertise in Design Thinking entails building a bridge between the target domain knowledge and design skills (Cross, Christiaans, & Dorst, 1994). Consequently, by acquiring skills, mapping the needed attitudes and sharing the relevant expertise, it is possible to embrace complexity and correctly deal with ill-structured problems. Dreyfus (2004) presented a general model of expertise, which was then broadened by Lawson and Dorst (2009). Seven layers of design expertise were individuated, namely: 'Naïve', 'Novice', 'Advanced Beginner', 'Competent', 'Expert', 'Master' and 'Visionary'. Each one of these layers is linked to related manners of operating design in practice: choice-based (or result-focused), convention-based, situation-based, strategy-based, experience-based, creating new schemata and the redefinition of the

field. Cross (2004) defined expertise as a form of talent in applying concepts to a chosen field, while Dorst (2011) described it as an iterative learning process, with a wide array of underlying factors. Therefore, by adapting the Design Thinking process to a target field, it is possible to create a flexible approach, which overcomes fixed structures and does not aim solely at solving a problem but concentrate on the dynamics around it. A thorough study of the problem space can move the entire system forward, allowing for a more exploratory design process. To conclude, in a complex landscape like the public domain, design can help to build a system in which design principles, challenges and solutions are interconnected. Problem framing here represents for public managers a compass to fit all these aspects together and find valuable paths.

2.3.2 Problem Framing | from education to design

The term 'Framing' has been first presented in design literature by Schön (1983), and it is related to the creation of a new starting point from which a topic can be faced, explored and finally interiorised. Schön introduced the notion from an educational perspective and defined frames as fundamental elements of the learning patterns. This focused and compelling way of decomposing topics to reach their core inspired Dorst (2011) to adapt the concept of Framing to the design field.

The Frame Creation model

The Frame Creation model proposed by Dorst (2015) is devoted to addressing open, complex, dynamic and networked problems.

Open: No boundaries
Complex: Many elements and relationships
Dynamic: Change over time
Networked: Move across organisations

Therefore, for organisations that are facing this kind of problems or situations, Problem Framing might represent a natural choice (Dorst, 2019), because once practised and interiorised, the process can become a spontaneous way of analysing the problem situation.
The process is composed of nine steps, and each level represents a phase of the elaboration and understanding of the problem. The model allows for widening the problem's context and finding promising patterns (Themes) that open for projecting viable actions (Frames).

The nine steps are:

ARCHAEOLOGY (1)

Analysing the history of the problem owner & the initial problem formulation

PARADOX (2)

Analysing the problem situation: what makes this hard?

CONTEXT (3)
Analysing the inner circle of stakeholders

FIELD (4)
Exploring the broader field

THEMES (5)
Investigating the themes that emerge in the broader field

FRAMES (6)
Identifying patterns between themes to create frames

FUTURES (7)
Exploring the possible outcomes and value propositions for the various stakeholders

TRANSFORMATION (8)
Investigating changes in stakeholders' strategies and practices required for implementation

INTEGRATION (9)
Drawing lessons from the new approach & identify new opportunities within the network

Paradoxes are considered in this case as complex statements consisting of two (or more) sub-statements in conflict with each other, that cannot be solved nor combined. Whitbeck (1998) defined how designers cope with paradoxes as "the key element of design Practice". The Frame creation process reproduces the reasoning style of professional designers that means addressing the issues around the design paradox, rather than directly focusing on it.
This open-ended structure keeps relevant 'Themes' that emerge around the central paradox as possible starting points for approaching it in a novel and different way. This notion guarantees a richness in the broader problem area. The explorative and iterative process can seem at first quite vague and general, but it leads to a pattern-finding process, which 'deconstructs' the problem-as-presented (Hekkert & van Dijk, 2011) and informs the emergence of Themes.

The ultimate aim is to make the context richer and more complex, to dramatically broadening the solution space. It is not just a stylistic exercise, but a way of understanding all the different dynamics that form the intricate scaffold of the problem area. Starting by getting rich insights on these dynamics it will be possible to generate different approaches and develop novel methodologies. Due to the nature of problems faced by public organisations on a daily basis, the Framing approach can play a crucial role in solving them. The process aims at exploring the problem before moving to a solution, not avoiding misunderstandings, but overcoming them by reaching the core of paradoxes.

To conclude, the Frame Creation process can enable practitioners not only to address the problem in an effective and impactful way but also to envision a 'co-evolution' of problems and related solutions (Dorst & Cross, 2001). In this way, the practitioner's focus can adapt to the challenge as it mutates over time. The next section concludes the second literature research by describing the concepts of knowledge, skills and attitudes and how they relate to capabilities.

2.3.3 Knowledge, skill and attitudes

In the previous section, the concept of Framing in design has been presented, stressing the pedagogic relevance that design education can have when applied to another domain. The current section explains the notions of knowledge, skills and attitudes and how they relate to each other, and in particular, how they contribute to learning processes.

Design education is an active and exceptionally interactive learning process, and it usually follows a non-linear path (Bakarman, 2005). Competency is presented by Vinke (2003) as "the ability of an individual to select and use the knowledge, skills, and attitudes that are necessary for effective behaviour in a specific professional, social or learning situation". Therefore, a learning process implies in the first moment recognising and individuating relevant knowledge, skills and attitudes to be combined to reach the aspired competencies.
Attitudes represent a profound element of the individuals' behaviour since they are very grounded, and, unlikely skills and knowledge, they are much harder to 'unlearn' (Cebrián & Junyent, 2015). Moreover, knowledge and skills can be measured, but attitudes are not computable. Therefore, in a learning process, oriented towards capacity-building, attitudes should represent the

first element to be discussed, in order to assess the skills to be learned and the knowledge underpinning the proposed skills.

COMPETENCIES

"Competency" means the proven ability to use knowledge, skills and personal, social and/or methodological abilities. Competencies may be considered as the interface between the learning and the innovation processes.

ATTITUDES: KNOW WHY

Theoretical construct representing an individual's degree of like or dislike for an item. Attitudes are generally positive or negative views of a person, place, thing, or event.

KNOWLEDGE: KNOW WHAT

The outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study.

SKILLS: KNOW-HOW

Ability to apply knowledge and use know-how to complete well-defined tasks. Skills may be cognitive or practical.

This section ends with the main lessons learned from the last literature study. The last part of the current chapter will showcase the main takeaways from the three reviews conducted contextually to the presented Research Framework.

Key takeaways | Literature study 2

• Design capability-building is an iterative learning process

• The Frame Creation model represents a structured means for public managers for analysing open, complex, dynamic and networked problems

• Deconstructing existing theories, notions and models and analysing their components helps in adapting them to other fields

• Attitudes are the most grounded elements of competencies, and they underpin skills and knowledge. In its turn, knowledge informs the development or finetuning of skills

2.4 Integrated takeaways

The current section closes the Research Framework chapter, and it summarises and combines the main takeaways founded throughout the conducted studies.

Literature study 1

- Participatory mindset can empower public managers through Processes, Principles and Tools
- Design Thinking represents for public managers an opportunity to adopt a holistic approach and the possibility to decompose problems into smaller challenges
- Public managers are familiar with problem-solving methods and strategies, but often struggle to recognise and analyse the problem in the early stages of a project
- Public management approach can be notably enriched by mapping the values to design for

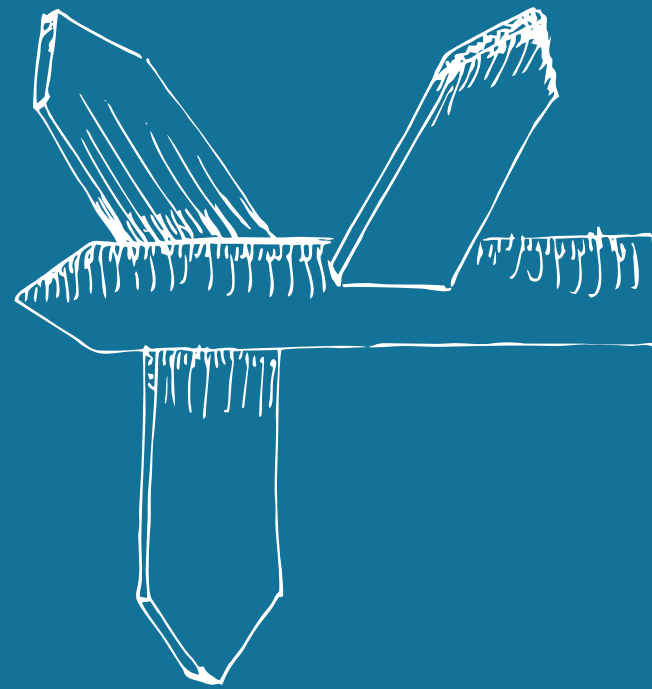
Contextual study

- There is a need for clear and structured communication of what Design Thinking is, as there is not a shared understanding of the topic
- Public managers recognise the value of collective thinking facilitated by design tools since it allows for a democratic and productive dialogue
- Design Thinking is adopted functionally, more than pedagogically

Literature study 2

- Design capability-building is an iterative learning process
- The Frame Creation model represents a structured means for public managers for analysing open, complex, dynamic and networked problems
- Deconstructing existing theories, notions and models and analysing their components helps in adapting them to other fields
- Attitudes are the most grounded elements of competencies, and they underpin skills and knowledge. In its turn, knowledge informs the development of skills

This chapter introduced the Research Framework adopted for the graduation project, along with the most relevant takeaways from the literature and contextual studies. The takeaways will be transformed into challenges and integrated with Design requirement at the end of Chapter 3, to individuate a goal for each one of the Participatory sessions that will be carried out later in the process. Next chapter will extensively present the approach selected for the current design research project.



CHAPTER 3: APPROACH

As introduced in Chapter 1, the objective of this graduation project is to co-create a Learning Environment with and for public managers by exploiting Design Thinking knowledge, skills and attitudes. Chapter 2 showed relevant theories informing the project's objectives and notions that will be used to refine the approach. The current chapter describes how the research will be conducted and what is the selected approach to address the envisioned objectives. To maintain a clear focus and lead the process, a design goal and the related interaction vision are defined in the first part of the chapter. Subsequently, research questions are formulated, and design requirements are drawn. Finally, the selected design approach with related methods is presented.

3.1 Design Goal and Interaction vision

The previous chapter described the Research Framework, integrating literature and contextual studies carried out at the beginning of the design research, which allowed to grasp preliminary insights and impressions of the context and the social dynamics to be addressed while designing. This section provides an overview of the design goal, and of the desired interaction with my design.

Design goal

To transfer Design Thinking (knowledge, skills and attitudes) to public managers by designing a learning environment in which sharing and nurturing capabilities and enable them to improve their way of working in a customisable and scalable way.

The Design goal address three specific aspects: the components of the Learning Environment, namely knowledge, skills and attitudes, the function of the design, which is sharing and nurturing capabilities, and the desired effects, which are customisable and scalable. The interaction vision will define other dimensions of the Learning Environment, related to the way in which public managers should interact with it and with each other while using it.

Current interaction

Like a team of sailors keeping the boat steady in a storm.

Desired interaction

Like a team of explorers starting with their adventure in uncharted territory with confidence.

Characteristics of the desired interaction

Important characteristics underlying the intended vision are:

- A robust and reliable organisation of the back end of the process (like explorers studying the whole context before leaving for an expedition)

- Recognising the right knowledge, skills and attitudes to be put at work (like explorers fine-tuning their strategy)

- Identifying the right time to act and the proper context, while keeping all the promising alternatives open (like explorers studying all the multiple ways to have a successful expedition)

The characteristics listed above define the outline of three essential design requirements. Next section will present the research questions formulated in order to better address the aim of the project. Subsequently, design requirements will be formulated and detailed.

3.2 Research questions

The research questions phrased to fulfil the project's objective are:

• What are the prominent factors underpinning a Learning Environment for public managers?

• How might the Learning Environment allow for sharing and nurturing design capabilities?

The research questions help in shaping the research path by giving tangible directions to the Design goal formulated at the beginning of the design process. The questions focus on investigating the back end of the public management approach, which has been recognised as one of the main objectives during the literature and context studies. Particular attention is dedicated to the factors influencing and characterising the Learning Environment, which are going to represent the building blocks of it. The selected approach in order to demystify these factors is to deconstruct existing tools, frameworks or methods and reconstruct them, by adding relevant values proposed by public managers in order to allow for capacity building. A Participatory design approach is chosen to ensure iteration on the design, and relatable outcomes from a research perspective. The next section details the Design requirements that will guide the process of building a Learning Environment; the requirements will be used in the final Cycle to evaluate the final design proposal.

3.3 Design Requirements

The current section presents the three design requirements formulated by merging the takeaways gathered during the research studies (See Section 2.4) and the 'Characteristics of the desired interaction' described in Section 3.1.

The design requirements will be taken as inspiration when designing, and they will be used at the end of the design research process to evaluate the proposed design.

Modular

The Learning Environment should be composed of different elements in order to offer a wide range of action for public managers to address the complex challenges they face. Those elements should be recognisable, and their purpose should be clear, even if they have multiple ways of use.

Adaptable

The Learning Environment for public managers should adapt to them and not the other way around, and the elements composing it should be useful for different purposes yet keeping a focus on what the users want to achieve. Adaptability can mitigate pressure by offering multiple solutions, even when the problems are multi-layered.

Supportive

Public managers must feel supported by all modular Learning Experiences. They should recognise the messages that the components of the learning environment convey and recognise their values. At the same time, the elements of the Learning Environment should be in line with public managers' values and bring together their personal and professional inclinations.

3.4 Design and research process approach

This section provides an overview of the different methods selected for the project, by also detailing the rationale behind choice and integration of every approach, and their fit with the design and research process. Figure 4 represents the structure of the process, displayed as it will be presented in this report, and the combination of the used methods, namely Double Diamond design process and Research through Design.
As mentioned in Chapter 1, the current project is informed by practice-based design research, which entails generating knowledge while designing. Therefore, it is a natural choice to adopt a Research through Design approach (Stappers & Giaccardi, 2018), because it is an iterative process offering the opportunity to build, test and draw insights and learnings from prototypes and sessions. Moreover, the approach nurtures the design knowledge incrementally, and by giving first-hand experiences to the participants, that can experiment, learn and envision the changes. Hence, it can be assumed that they will be likely to adapt the process to their way of operating. Each one of the iterations will come with specific objectives, to diffuse design knowledge, skills and attitudes within the company, and the learnings will form the Learning Environment and the related guidelines.

Designer's role

My role as a design researcher is to iteratively prototype and test solutions with public managers during Participatory sessions and to facilitate the adaptation of relevant theories related to Design Thinking in the selected field. The first-hand experience in the context allows for nurturing the design with field data and for integrating them, synthesising the field insights into a Learning Environment and research outcomes into guidelines.

In this case, a deconstructive approach will be taken, and existing theories and notions will be disassembled, and analysed by the team, resulting in at the end in a tool or framework, enriched by contextual factors and public managers' values. The insights gained from each iteration will inform the next one and converge at the end of the project to a unified set of guidelines.

Each Cycle of the process has a research purpose, being accompanied by

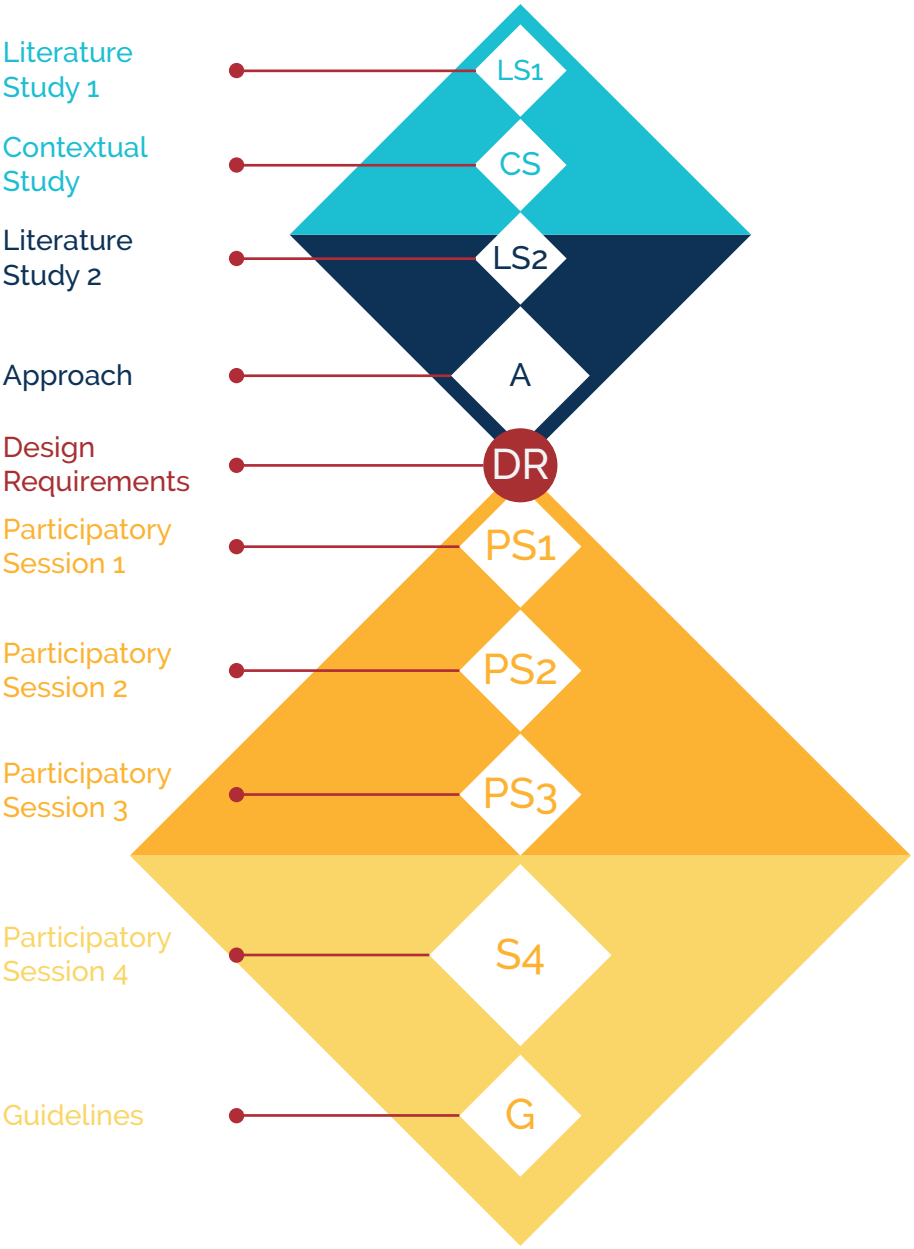


Figure 4: Visualisation of the approach for the design research process

research questions which allow for assessing the operations performed during the iteration. The research questions allowed to have a focus for the Cycle and to know the relevant aspects to be evaluated. The project structure is organised following the Double Diamond Design process structure, ideated by the UK Design Council, and divided into four phases: Discover, Define, Develop, Deliver. The Double Diamond process is composed of two parts, called diamonds, which represent the problem and the solution space. Each diamond is divided into a divergent and a convergent phase. The divergent phase of the first diamond is covered by the drafting of the brief, the definition of the assignment, and the literature and context studies (Chapter 1 and 2). In contrast, the convergent phase includes the formulation of research questions, vision and design requirements, and the approach formalisation (Chapter 3). On the other hand, the second diamond represents in the divergent phase the three iterative Cycles (Chapter 4-5-6), and in the convergent one the implementation, validation and definition of the Learning Environment and the guidelines accompanying it (Chapter 6-7-8). This section provided a detailed overview of the approach for the whole project. The next section details the methods underpinning the iterative Cycles.

3.5 Methodology

The current section introduces the methods used throughout the design research process and iteratively repeated in each Cycle.

Prototypes

A concept prototype is a fundamental component of a design research project because represents a means to convey a notion tangibly, enabling participants to analyse it and to provide feedback on it. Prototypes can be intended as 'learning devices' (Burkett, 2016) because they are usually steps of an incremental process, and every iteration performed on a prototype provides insights, informing the consecutive stages of the project.

Participatory Sessions

Participatory sessions generate, as explained in Chapter 2, the unique advantage of allowing participants to take ownership not only on the results of a process but also on the process itself. Sessions are defined in Participatory Design literature as "short, organised, informal and immersive learning experiences" (Malcolm, Hodkinson & Colley, 2003). The type of learning in

such kind of format is purely experiential and collaborative, and it enables participants to test and evaluate prototypes in a familiar environment. During the current design research process, the sessions have been held in the participants' context, allowing them to express their profound knowledge by disclosing what they "know, feel and dream" (Sanders & Stappers, 2012).

Data collection

Due to the abstract and multifaceted nature of the available data, a qualitative research approach was chosen. Observations, Audio/video recordings of the sessions and prototypes intended as co-reflection tools are the selected methods to collect data, since they allow to uncover non-measurable information, such as experiences, values, etc. (Patton, 2002). The chosen data collection methods complement each other and provide a complete picture of the analysed context.

Observations

During the Participatory sessions, I observe and take notes of how people act and behave while interacting with the prototypes and between each other. Observations are led by the research questions formulated for each Cycle, and they consider the Design requirements (see Section 3.3).

Audio/Video Recordings

Audio/video recordings of the sessions are collected upon participants' consent (Appendix B). The recorded materials allow for a thorough analysis of the sessions because they support in recovering information that might not be captured by prototypes or observations.

Prototypes as discussion and co-reflection tools

Prototypes are intended for this project not only as concept iterations but also as fundamental data-collection tools, specifically designed to stimulate discussion and co-reflection, with the intent of gathering users' knowledge and insights.

This section presented the methods used to collect data, and to design and carry out Participatory sessions during the three Cycles of the project. The next section will introduce the plan and the setup for the project Cycles, along with the performed activities, selected according to the opportunities individuated in the research phase.

3.6 Project Cycles plan and setup

As anticipated in Section 3.4, the process of the current design research project will be structured in three iterative Cycles (see Figure 5):

- Reframing the challenge
- Designing the Learning Environment
- Evaluating the impact

Structure of the Cycles

The project consists of four Participatory sessions organised in three Cycles. The first exploratory session is performed during Cycle 1, whereas Cycle 2 includes two iterations. Finally, Cycle 3 will close the project with the last evaluative session. The scope and content of each one of the iterations are clarified in the following section.

Project Cycles plan

Throughout the three phases, the design of the Learning Environment is incrementally developed, and every Participatory session focuses on addressing specific challenges identified during the research phase. The first three sessions target one of the Design requirements (see Section 3.3), whereas the last session has the goal of evaluating the Learning Environment in its entireness.

Figure 5: The three phases of the iterative process

Participatory Session 1:
Goal: Individuating public managers' values and attitudes

Addressed challenges:
- Public management approach can be notably enriched by mapping the values to design for (from Literature study 1)
- Attitudes are the most grounded elements of competencies, and they underpin skills and knowledge. In its turn, knowledge informs the development of skills (from Literature study 2)

Targeted Design requirement: Supportive

Participatory Session 2:
Goal: Defining a Design Thinking model for public managers

Addressed challenge:
- Deconstructing existing theories, notions and models and analysing their components helps in adapting them to other fields (from Literature study 2)

Targeted Design requirement: Modular

Participatory Session 3:
Goal: Uncovering public managers' skills

Addressed challenge:
- Attitudes are the most grounded elements of competencies, and they underpin skills and knowledge. In its turn, knowledge informs the development of skills (from Literature study 2)

Targeted Design requirement: Adaptable

Participatory Session 4:
Goal: Validating the Learning Environment and evaluating its impact

Project Cycles setup

Language

The project is set up and developed in ANCI Toscana's headquarter, situated in Florence, Italy, and all the activities with the selected public managers are carried out in Italian, to set the necessary conditions for participants to relate to the process and to all the contents. By using a familiar language, public managers are enabled to express freely and without filters, allowing for rich and personal insights.

Sessions content

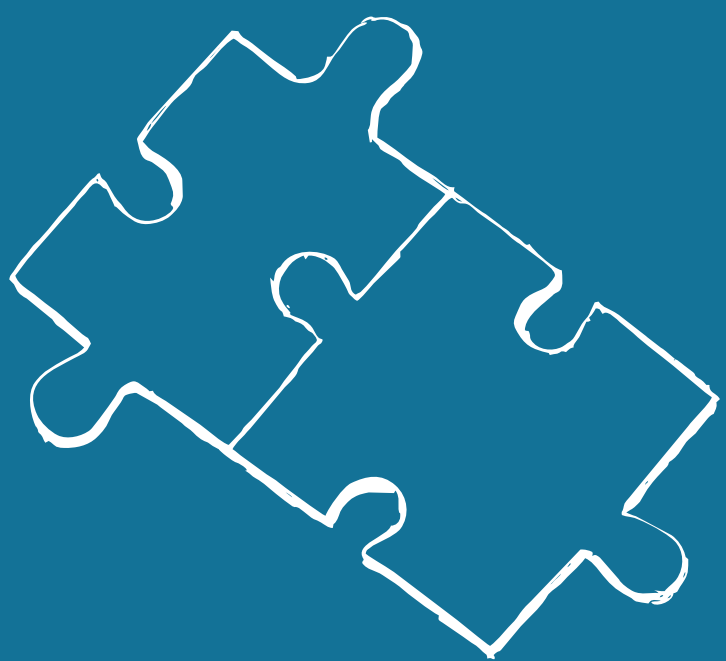
Each Cycle contains different activities yet keeping a similar structure. The sessions start with a seminar covering relevant design knowledge needed for the day (20 mins). Following the symposium, two or three Participatory activities are distributed over 4.5 hours. Each one of the Participatory activities is structured according to the complexity of the goal set for the day. The aim is to address the challenge yet maximising the learnings by prototyping and discussing.

Participants

The project is developed with the participation of a team of seven public managers, working in different departments of the company. The participants' sample offers diversity in background and expertise.

EU project management office: Alessandro, Elena, Valentina
Administration office: Federico, Marcella
Social services office: Elisa, Martina

This chapter extensively presented the chosen methodologies and the selected approaches for the present graduation project, detailing the fit with the project and the motivation for using them. The next three chapters will guide the reader through the performed design research iterations along the three Cycles of the project. Chapter 4 will describe the first Cycle: Reframing the challenge.



CHAPTER 4:
CYCLE 1 | REFRAMING THE CHALLENGE

After presenting the project approach and the methods chosen to carry out the project, the next three chapters will guide the reader through the Participatory sessions performed during Cycle 1, 2 and 3. Chapter 4 describes the first Cycle: Reframing the challenge.

4.1 Participatory Session 1: From Values to Attitudes

Goal: Individuating public managers' values and attitudes

Addressed challenges:

- **Public management approach can be notably enriched by mapping the values to design for (from Literature study 1)**
- **Attitudes are the most grounded elements of competencies, and they underpin skills and knowledge. In its turn, knowledge informs the development of skills (from Literature study 2)**

Targeted Design requirement: Supportive

Setup

The introduction to the session was carried out by using the Contextmapping approach, to grasp as many insights as possible in a personal and relatable way and sensitise the participants for the session. The Contextmapping methodology allows to understand and disclose profound ideas and latent thoughts of the participants (Sanders & Stappers, 2008) (see Figure 6).

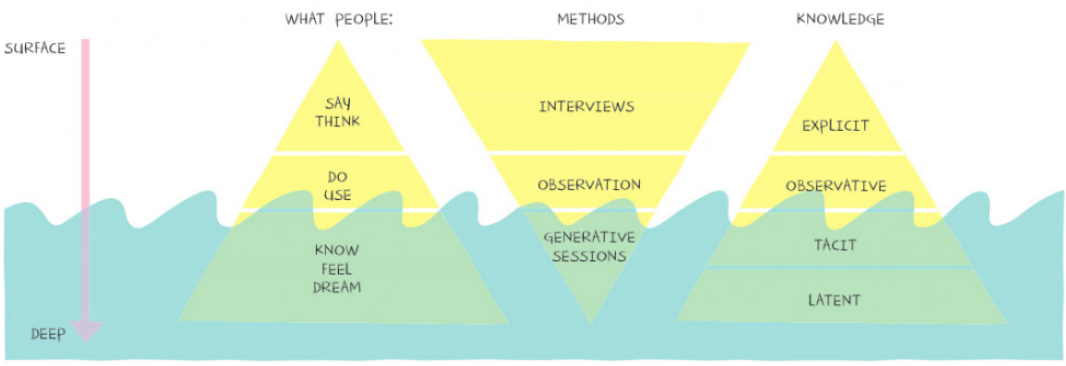


Figure 6: Levels of accessible knowledge
(Sanders & Stappers, 2008)

Preparation

During the preparation phase, a sensitising package has been delivered to the participants to prepare them for the session. A Sensitising kit is a probing tool used to allow the participants to this study to express their preliminary thoughts and be informed on the main topic that will be covered during the session. The kit (see Figure 7) is composed of a Booklet (Appendix C) and a Trigger set (Appendix D) to support the completion of the activities. The central topic covered by the booklet is "Me and my approach: knowledge, skills and attitudes". As the name suggests, the aim is to investigate how the participants perceive and feel their actual working experiences as public managers with all the related guts, and on how they would like to improve it in the future.

The booklet consisted of different short activities to be carried out in a 5-days timeframe. Every day was related to a different aspect:

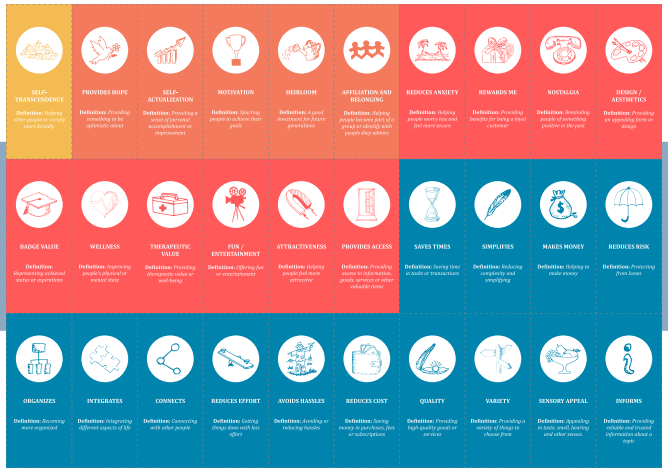
- Day 1: This is me...and this is what I have to say!
- Day 2: My typical day
- Day 3: A nice memory at work...and a less pleasant one
- Day 4: What is important to me
- Day 5: To big responsibilities...correspond big powers!

Figure 7: The sensitising kit delivered to the participants to sensitise them for the session

Activities

Activity 1: Building on values

The first activity consisted of a guided brainstorming, performed with the support of a card set (see Figure 8), containing 30 value cards based on the Element of Value pyramid (Almquist, Senior & Bloch, 2016) (see Appendix E).



The card set has been prototyped to guide the brainstorming, whose main objective was to map values, starting from the secondary ones, and finally reaching the key values. As additional support, and to ease the values categorisation, a 'value radar' (see Figure 9) has been designed, and participants were asked to position the proposed values by relevance, and if needed, to come up with new values or create clusters.

Figure 8: The elements of value card set

Figure 9: Participants mapping the team's values using the 'values card set' and the 'value radar'

Activity 2: Mapping Skills, Attitudes and Pitfalls

The second activity consisted of a co-reflection and brainstorming session on the themes of Skills, Attitudes and Pitfalls. The main goal was to understand the relevant knowledge needed to build a Learning Environment. An A1 framework was prototyped and used to carry out the activity (see Figure 10). The framework is divided into three main parts: Skills, Attitudes and Pitfalls, to enable public managers to brainstorm and reflect at the same time on how the different elements are connected. While Skills and Attitudes are elements they might have or not, Pitfalls represent the aspects they currently lack or the ones they would like to improve.

Figure 10: Framework used for the guided brainstorming, divided into three aspects: Skills, Attitudes and Pitfalls.

4.2 Participatory Session 1: Discussion and Conclusion

Discussion Activity 1: Building on values

The results of the value mapping exercise (see Figure 11) show the concept of value is unique and personal, and if discussed in a team setting can generate a shared view on which it is possible to build a process.

The key element of the teams' concept of value lies in what they called 'Communicating balance' between the 'Sphere of the person' and the 'Sphere of the shared'. The term 'Communicating' means that the two spheres are not closed compartment but should inform and enrich each other. The objective is to guarantee personal wellbeing in the Sphere of the person and organisational wellbeing in the Sphere of the shared. The connection is built on four fundamental values:

- **Fun/Entertainment**
- **Connects**
- **Badge value**
- **Quality**

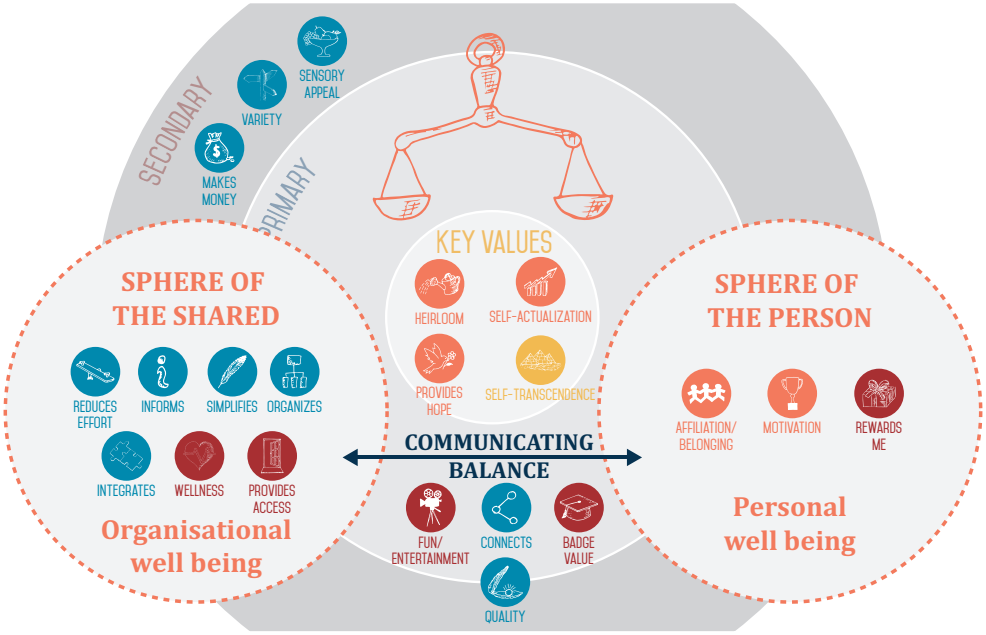


Figure 11: Results Activity 1: Building on values

Discussion Activity 2: Mapping Skills, Pitfalls and Attitudes

Figure 12 shows the results from the second activity performed during the session. The team demonstrated, since the beginning of the brainstorming, a tendency to use the framework space in its entireness. Participants exploited the boundaries between the different categories to place elements that might represent two aspects at the same time. The central part of the framework shows the 'reaction' which can transform Pitfalls into Skills and Attitudes, which is fuelled by two reagents: Will and Awareness.

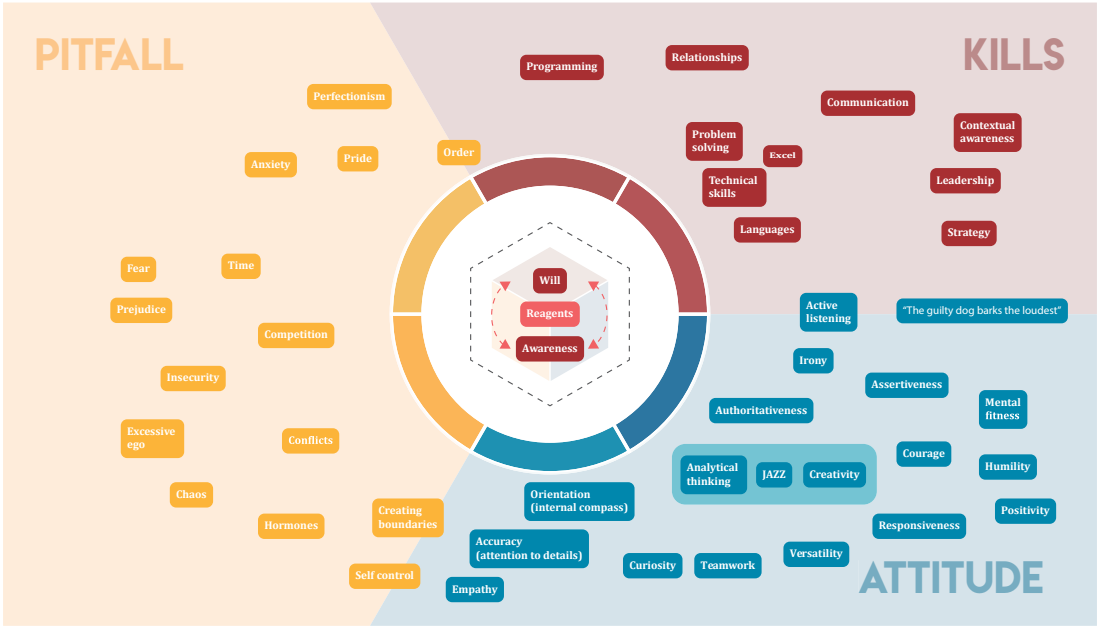


Figure 12: Results Activity 2: Mapping Skills, Pitfalls and Attitudes

Continuity

Based on the results obtained from Activity 2, an iteration on the Framework for capacity-building has been performed, modifying the structure and individuating nine main attitudes (see Figure 13).
Such a framework can regulate the activities throughout the whole process. In the first moment of preparation, it can help individuals to auto-assess their attitudes and then, in a Participatory setting, create a space for co-reflection on overall team settings and organisation.

Categories and attitudes

The attitudes shown in the circle are divided into three categories: Vision, Inclusion and Passion, and are: Creativity, Curiosity, Dynamism, Criticism, Empathy, Sustainable sharing, Positivity, Courage and Reactivity.

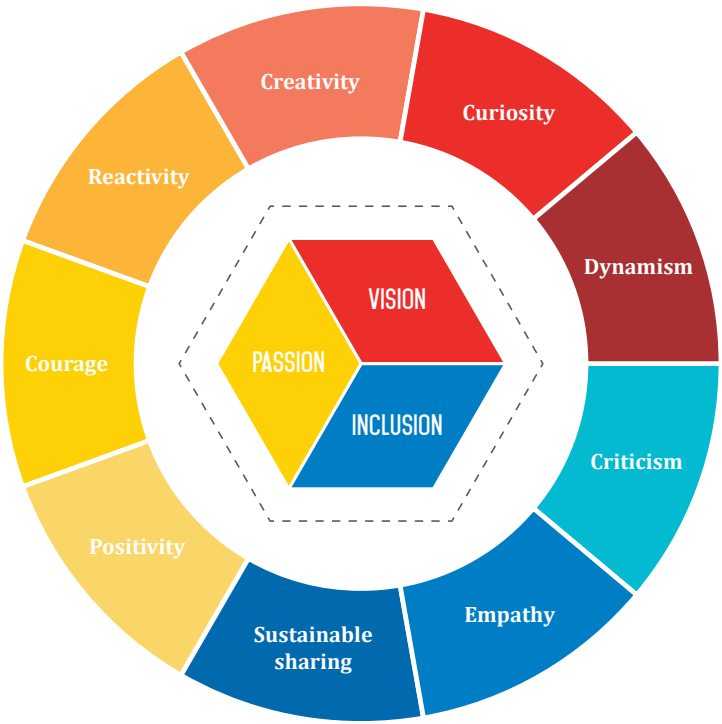


Figure 13: First iteration on the Framework for capacity-building

Vision
Attitudes

Creativity: See and predict possibilities out of the ordinary for current or future problems. Mastery in creative thinking and imaginative ability.
Curiosity: Desire to know, learn or sharpen one's knowledge. Explore different possibilities and be inspired by people, things and situations.
Dynamism: Change, transform and renew in response to external and internal inputs. Iterative attitude oriented to action and "learning by doing".

Inclusion
Attitudes

Criticism: Critical reflection throughout the process. Readiness to examine one's own knowledge and that of others and to connect causes and effects.
Empathy: Ability to align with the perspectives and opinions of others. Investigate people's experiences and their contexts in order to respond to their needs (explicit and implicit) with relevant solutions.
Sustainable sharing: Sharing of thoughts, actions or solutions aimed at developing complex strategies. Systematic sustainability in the design due to the transmissibility and reusability of a result or process.

Passion
Attitudes

Positivity: Motivation in relation to current situations and set goals. Take positive inspiration from yourself and others in order to promote an honest and realistic impact.
Courage: Proactive attitude towards the unknown. Overcoming the fear of failure and readiness to take risks.
Reactivity: Adapt promptly to the typical transitions of complex processes and respond to contingencies in a flexible manner.

Main takeaways

Value mapping as the beginning of the capacity-building process

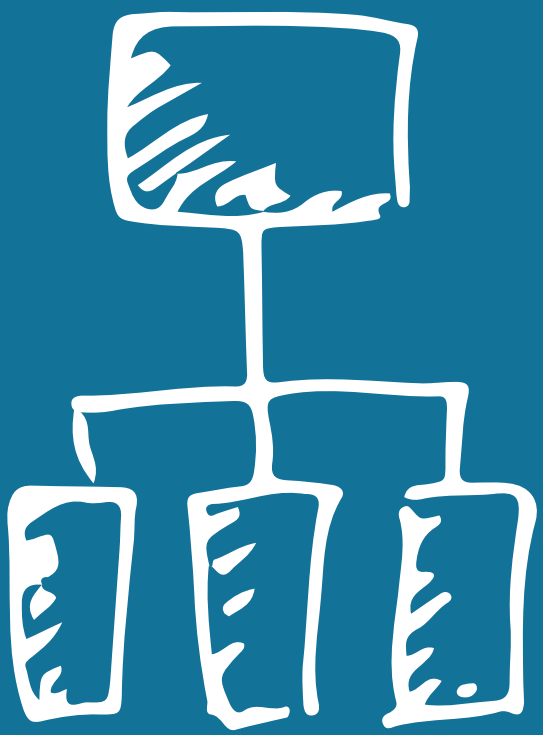
The "Building on values" activity generated high-quality outcomes and kickstarted an interesting discussion within the team. The tool was considered straightforward and entertaining, and the activity was doable within the given timeframe of 1,5h. Therefore, the next sessions will focus on designing and prototyping different tools of the Learning Environment, and the Value radar and card set are selected as the opening activity of the final design.

Attitudes are easy to spot, but skills and knowledge need more iterations

During the second activity, the 'Attitude' area of the framework was higher in quality compared to the other two. Therefore, it can be assumed that attitudes are more comfortable to recognise than skills and knowledge. Consequently, more iterations will be performed on this framework to make it complete.

Going from an abstract level to a tangible one

The team showed a high level of engagement during the first session. However, participants mentioned that although the activities were helpful to envision viable solutions, it would be easier for them to ground the learnings with the support of tangible tools. Therefore, the next iterations will focus on tools to make the process more relatable for public managers.



CHAPTER 5:
CYCLE 2 | DESIGNING THE LEARNING ENVIRONMENT

Building on the insights and conclusions from the first iteration, the Second Cycle of the project starts with acknowledging that the Learning Environment should not only allow for capacity-building but also give tangible support to public managers. Cycle 1 contributed to creating visions for the team with the help of Participatory tools focused on discussing values and attitudes. Cycle 2, unlikely the other two iterations, integrates two Participatory sessions, to define the elements that will form the Learning Environment.

5.1 Participatory Session 2: Design Thinking model for public managers

Goal: Defining a Design Thinking model for public managers

Addressed challenge:

• Deconstructing existing theories, notions and models and analysing their components helps in adapting them to other fields (from Literature study 2)

Targeted Design requirement: Modular

Setup

The goal of the second Participatory session was to create a Design Thinking model for public managers, to envision a tangible and relatable approach. A deconstructive approach has been adopted during this process, allowing for the decomposition of the Double Diamond design process, analysis of the elements, and reconstruction of a new model.

Figure 14: Activity 1 of the second Participatory session

Activities

Activity 1: Brainstorming on the Double Diamond design model template

The first activity (see Figure 14) consisted of a brainstorming carried out on a blank design model template. An A1 poster representing the two diamond was prepared as a tool to discuss and ideate the steps of the new model. The activity started with analysing Design Thinking models, to individuate critical elements that can be adapted to public managers. Subsequently, the prepared tool was used as a template to brainstorm and ideate

5.2 Participatory Session 2: Discussion and Conclusion

Discussion Activity 1: Brainstorming on the Double Diamond design model template

During the discussion preceding the brainstorming activity, several discrepancies between the Double Diamond design model and the desired workflow of public managers have been individuated. Namely:

- The Double Diamond process separates the analytic and exploratory phase from the ideation and delivery one. This aspect entails a linear process divided into two closed clusters. Since public management mostly deals with open, complex, dynamic and networked problems, it is needed to keep an open and dynamic structure, in order to allow practitioners to iterate on the problem while delivering solutions.
- The DD shows a fixed way of working, with monodirectional actions. Public managers desire a modular way of working, therefore a structure that not only enables them to keep track with time but also not to lose any step and to freely go backwards and forward again if needed.
- The moment in which the first diamond is linked to the second one is defined as 'Problem Definition' or 'Design Brief'. This aspect entails that in that point of the process the problem has been overcome, and a formal document can be drawn with final and unmovable intents. However, public managers desire to have a shared vision of the problem at this point, instead of having it solved, allowing for further iterations.
- The four actions (Discover-Define-Develop-Deliver) are too broad and generic

and do not feel relatable enough for the public management field.
Therefore, it was decided to deconstruct the Double Diamond process and extract different actions, more in line with public managers' values and programmatic objectives and then reconstruct a new model tailored to their needs. The nine actions individuated are: 'Dialogue', 'Expanding', 'Problem Framing' and 'Exploring', 'Filter', 'Adapting', 'Transforming & Validating'. In Figure 15, the actions have been projected and represented on the Double Diamond model, in order to show their relations with it, but also the differences. It is important here to focus on the 'Shared Vision' moment in the middle of the process and on the 'Reframing' action at the end of it. Another important aspect is the representation of an 'Iteration on prototyping and testing' happening since the 'Problem Framing' and 'Exploring' phase.

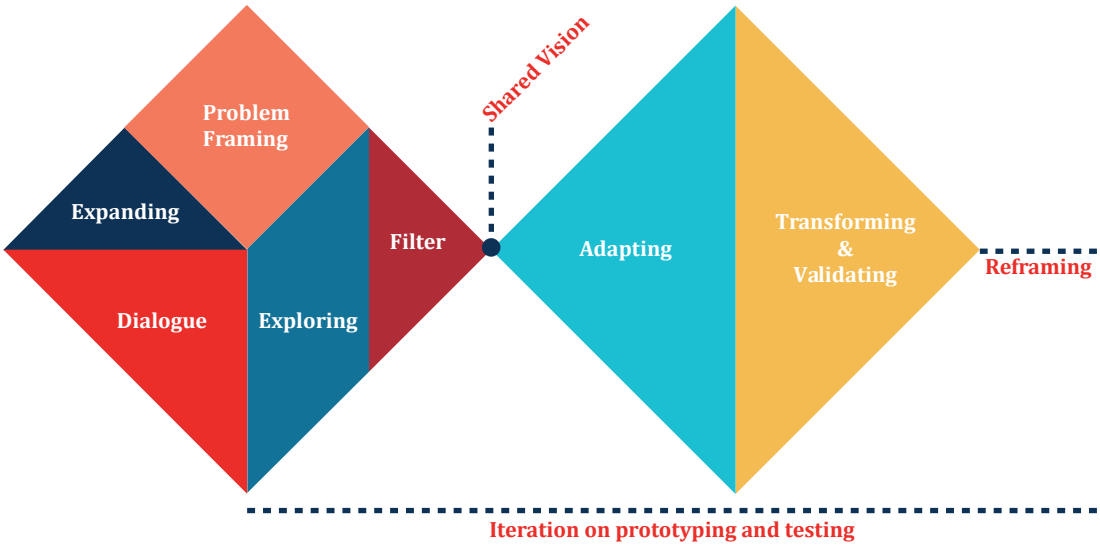


Figure 15: New proposed phases of the designed process for public managers represented on the Double Diamond model's structure

The model has been then reconstructed into a new structure, inspired by the Tangram (see Figure 16). The characteristics borrowed from the previous iterations are modularity and playfulness, two elements which are considered essential by the team.

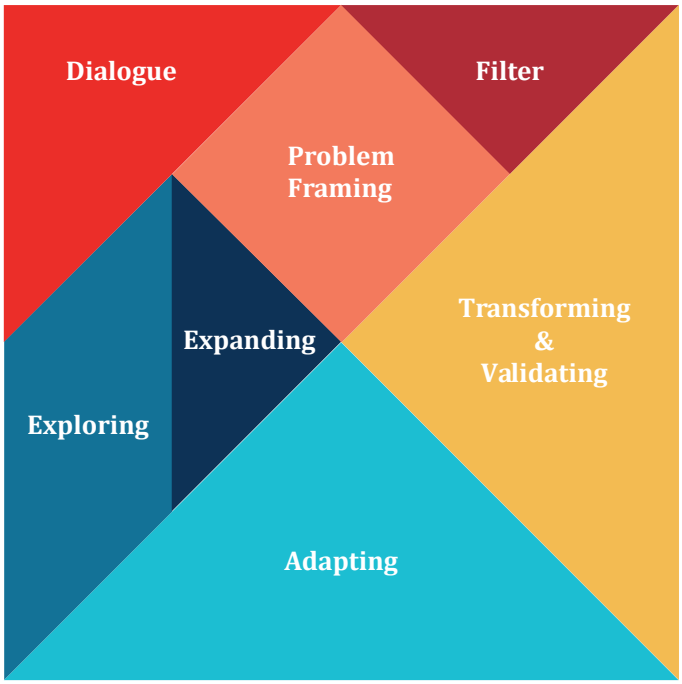


Figure 16: The Tangram model

Main Takeaways

A fluid model supports an all-round approach to public management

The different phases are represent communicating vessels more than a linear process

Shared vision

The central part of the model points towards a Shared Vision, reflecting both viable approaches and public managers' values.

The model aims to strengthen the back end of public managers' approach

The first half of the process is denser in order to streamline the second one. In other words, the problem space is structured in a way that enables public managers to grasp the complexity and eases the ideation and implementation.

Focus on prototyping-testing iterations

The iterations on prototyping and testing cover almost the entireness of the process and are not just limited to the final part of it.

Demand for a tool dedicated to Problem Framing

By designing a tool for Problem framing, it would be possible to provide to public managers all the instruments required to explore and address the challenges presented in the problem area of the design process.

5.3 Participatory Session 3: From attitudes to skills

Goal: Uncovering public managers' skills

Addressed challenge:
Attitudes are the most grounded elements of competencies, and they underpin skills and knowledge. In its turn, knowledge informs the development of skills (from Literature study 2)

Targeted Design requirement: Adaptable

Setup

The third Participatory session represented a further iteration on the framework designed during Cycle 1, in order to envision skills that can benefit public managers' approach.

Preparation

Reframing Behaviours

The goal of the exercise was to prepare the participants for the main activity by discussing the skills useful for them to improve their way of working. This preparation was developed with the help of a tool called 'Reframing behaviours Worksheet' (see Appendix F), which guided the co-reflection process by asking three questions:

What behaviours/attitudes would I like to change?
Think about what skills you think you don't have and behaviours attitudes that have often blocked or hindered you

What behaviours / attitudes would I like to develop?
Reflect on behaviours/attitudes that have often been successful or that you would like to learn to adopt

What do I want to learn/do to facilitate this transition?

Reflect on how you could learn or train this behaviour or attitude. What skills or attitudes can you connect to? In what way or situation could you train it?

After filling the module individually, the participants moved to the main activity, in which they discussed, mapped and reflected on what skills can benefit the whole team.

Activities

Activity 1: From attitudes to skills

The second activity consisted of a brainstorming performed on the framework designed during Cycle 1, informed by the reflection held during the preparatory exercise. The activity (Figure 17) started by discussing and writing down skills on a flip-over sheet. Subsequently, with the support of an A1 poster representing the framework, the skills have been distributed over the three areas of the model. Finally, similar notions were clustered and the least relevant discarded.

The team discussed renaming the 'Passion' domain into 'Strategic Agility' because the name was considered more appropriate and in line with the content.

Figure 17: Activity 1: From attitudes to skills

Continuity and key takeaways

Informed by the results of the third participatory session, a further iteration was performed on the framework, individuating five core skills for each one of the three areas of the model.

Vision

Attitudes

Creativity: See and predict possibilities out of the ordinary for current or future problems. Mastery in creative thinking and imaginative ability.

Curiosity: Desire to know, learn or sharpen one's knowledge. Explore different possibilities and be inspired by people, things and situations.

Dynamism: Change, transform and renew in response to external and internal inputs. Iterative attitude oriented to action and "learning by doing".

Core skills

Seeding & Inspiring: Delivering and sharing compelling ideas allowing for mutual inspiration

Abstracting & Deconstructing: Using alternative means and narratives to deconstruct and grasp the complexity

PTI (Prototyping, Testing, Iterating): Making ideas tangible and systematically testing and fine-tuning them

Investigating: Joining the dots. Bridging the gap between pieces of evidence and sense-making

Framing flair: Recognising and investing in promising frames, ideas and scenarios

Inclusion
Attitudes

Criticism: Critical reflection throughout the process. Readiness to examine one's knowledge and that of others and to connect causes and effects.

Empathy: Ability to align with the perspectives and opinions of others. Investigate people's experiences and their contexts to respond to their needs (explicit and implicit) with relevant solutions.

Sustainable sharing: Sharing of thoughts, actions or solutions aimed at developing complex strategies. Systematic sustainability in the design due to the transmissibility and reusability of a result or process.

Core skills

Stakeholder engagement & talent scouting: Actively involving all the relevant stakeholders (citizens, colleagues, clients, etc.) and valorising everyone's potential

Connecting: Stimulating rich interactions and setting a common ground to generate social value and exchanging feedback

Coaching & handing down: Developing individuals' and teams' capabilities by passing on knowledge

Design for flourishing: Designing proposals aimed at flourishing. Considering workable and feasible solutions with personal and societal development as a main objective

Communicating & demonstrating: Thoroughly sharing (and demonstrating the value of) ideas and messages that fit the intended audience and scope

Strategic Agility
Attitudes

Positivity: Motivation in relation to current situations and set goals. Take positive inspiration from yourself and others to promote an honest and realistic impact.

Courage: Proactive attitude towards the unknown. Overcoming the fear of failure and readiness to take risks.

Reactivity: Adapt promptly to the typical transitions of complex processes and respond to contingencies flexibly.

Core skills

Social awareness: Being informed and aware of the societal landscape and knowing how, when and where to act

Action/time acumen: Projecting long-term visions composed of doable short-term goals

Mediating: Negotiating common values and mediating conflicts to reach shared ownership

Activism & Advocacy: Striving for social change and innovation and advocating for valuable and disruptive ideas

Strategic thinking: Shaping action trajectories by merging multiple perspectives, methods and analytical framework

CHAPTER 6:
CYCLE 3 | EVALUATING THE IMPACT

During Cycle 1 and 2, the sessions demonstrated how Participatory tools are successful in kickstarting proactive dialogue within public managers. The designed tools and frameworks are oriented at addressing the Design requirements formulated at the beginning of the research (Modular, Adaptable, Supportive), to cover three essential dimensions that the Learning Environment should accomplish. The objective of Cycle 3 is to complete the Learning Environment with one more tool, oriented at actively addressing problems, and to evaluate all the tools and frameworks generated until now, to finetune them and make them ready for implementation.

6.1 Participatory Session 4: Validation and Frame Creation

Goal: Validating the Learning Environment and evaluating its impact

Introduction

During the last session, the main goal was to reflect on the tools and frameworks designed together so far. However, before evaluating the Learning Environment in its entireness, it was decided to test and eventually include one more tool, the Frame Creation model. The proposed model, indeed, addresses the demand for complete reinforcement of the back end of the public management approach. As anticipated in Section 5.2, by designing a tool for Problem framing, it would be possible to provide to public managers all the instruments required to explore and address the challenges presented in the problem area of the design process.

Activities

Activity 1: Frame Creation

The objective of the first activity performed during Session 4, was to carry out a Frame Creation exercise (see Figure 18), to move toward action with a tool devoted to addressing real problems. The session was carried out with support of the Frame Creation template, adapted by Dorst (2015) and consisting of nine steps: Archaeology, Paradox, Context, Field, Themes, Frames, Futures, Transformation, Integration.
Each one of the nine steps is accompanied by a reflective question or action:

Archaeology

Analysing the history of the problem owner & the initial problem formulation

Paradox

Analysing the problem situation: what makes this hard?

Context

Analysing the inner circle of stakeholders

Field

Exploring the broader field

Themes

Investigating the themes that emerge in the broader field

Frames

Identifying patterns between themes to create frames

Futures

Exploring the possible outcomes and value propositions for the various stakeholders

Transformation

Investigating changes in stakeholders' strategies and practices required for implementation

Integration

Drawing lessons from the new approach & identify new opportunities within the network

The team proposed a problem be analysed through the designed model. The starting point chosen by the participants was time management while working in a team.

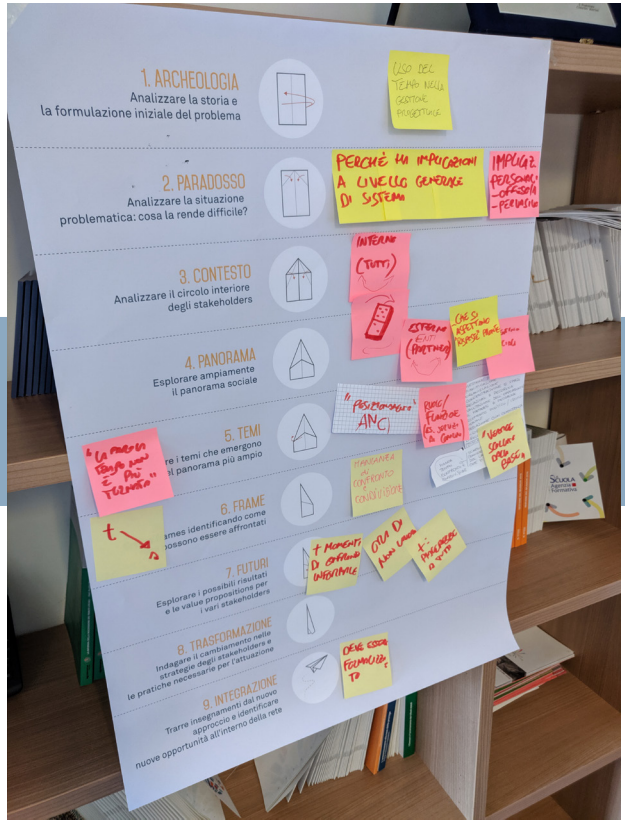


Figure 18: Activity 1: Frame Creation

Activity 2: Co-reflection and assessment of the Learning Environment

The second and primary activity of the lase Participatory session was to evaluate all the tools and framework designed so far (Figure 19), to provide final recommendations on how to improve them to make them adequate for implementation. The tools and frameworks have been evaluated singularly in order to offer focused insights to further implementation.

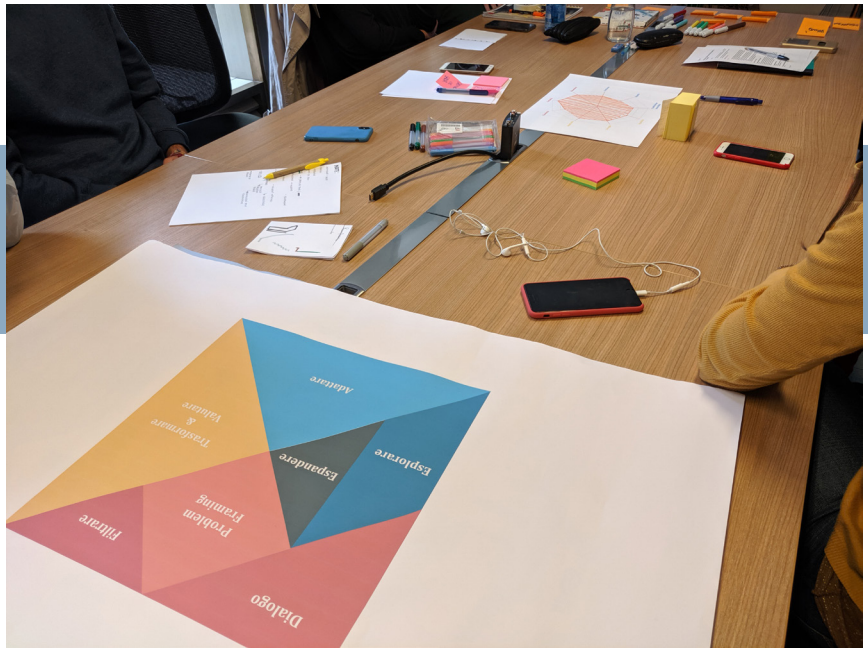


Figure 19: Activity 2: Evaluation

6.2 Evaluation and final takeaways

Value radar and card set

• The Value mapping process was considered particularly useful both for the team and the company. It was correctly perceived as the basis of the learning process, and the proposed tool to lead the activity was found wide enough to let the team explore yet keeping a strong focus and a clear direction.

• The tool was considered flexible, because it can be used for several purposes, starting from abstract and long-term processes, such as generating company visions, to smaller and more focused ones, like a simple task or short project.

Framework for capacity-building

• Participants expressed the need for being able to assess themselves and their peers based on the degree of which they are proficient in a skill and to fill the gaps with the knowledge needed to improve it.

• The Framework is considered by the team as the central part of the whole process we carried out together. Three iterations have been performed on the Framework so far, and still, it is perceived as a system that can continuously evolve.

• The Framework was perceived as an excellent means of guiding a discussion in public management, and for developing new competencies, because it contains several elements to which professionals in the public sector can relate.

• By adding three different levels of expertise in the framework, public managers can be able to assess their own, others and teams' skills by means of reflective suggestions, which also imply knowledge needed or possessed.

Design Thinking model

• The Design Thinking model is considered a very supporting tool because it gives scope and envision steps for the execution of a project.

• The modularity of the tool was appreciated, but the steps in the first part of it seemed slightly redundant.

Frame Creation model

• The Frame Creation model helped the participants in addressing a complex problem and envisioning solutions in a very limited amount of time. This aspect was particularly appreciated by the team.

• Participants mentioned that the model can be used both to execute design sprints and to take down complex problems over a long period of time.

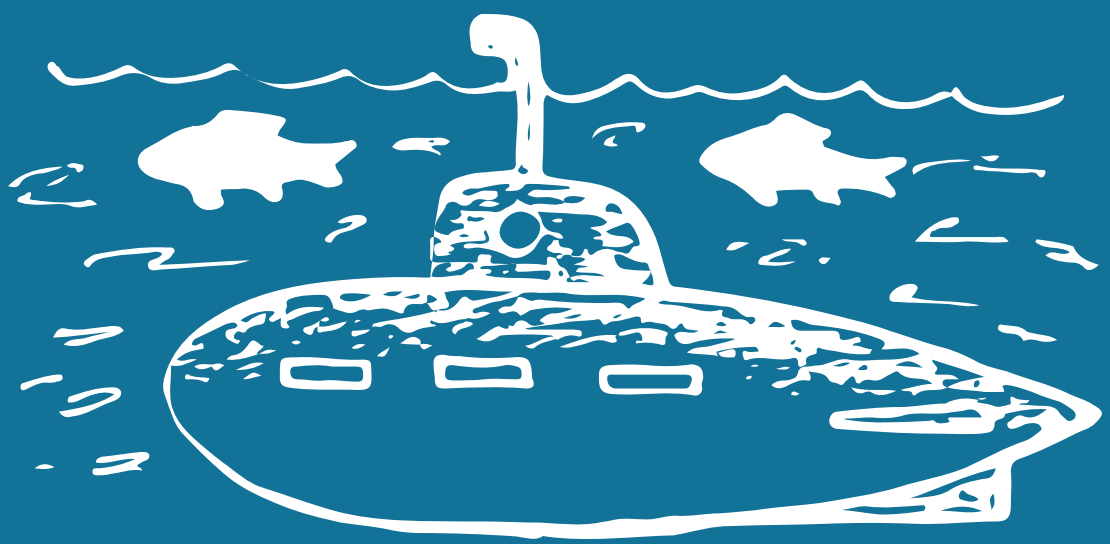
General

• Primary importance was put on how to put the ideated solution in practice. One important finding at this point was that the biggest difficulty in applying this model is linked to communication with the organisation direction. This aspect is composed of two sub-factors: one is cultural, and it is linked to power distance and organisational hierarchy. The other one is more operational and concerns making everyone perceive the learning environment as useful as it was for the team.

• Other aspects that the team perceived as important for further development is to have a professional facilitator or psychologist to lead the process, because despite their confidence in trying to lead the process on their own, they still perceive an external enabler as an added value in order to process the information in a more 'detached' way and provide an external point of view. The reason for this stand their daily work, which requires a rather deep immersion in the topic.

• Participants mentioned putting the insights gathered during the session into practice while working.

This Chapter represented the last iteration of the process leading to the fine tuning of the learning environment. The following section will introduce the outcome and the elements composing the Learning Environment.



CHAPTER 7: THE dASAP LEARNING ENVIRONMENT

The dASAP Learning Environment reflects the Participatory process carried out with public managers, and it is composed of significative tools and frameworks prototyped, finetuned and validated with them. The guidelines on how to use the Learning Environment will be detailed in Chapter 8, to allow for further research and the implementation of the proposed design in practice.

7.1 Introduction

A Learning Environment for Public management

The dASAP Learning Environment is a space for collective capacity building, in which knowledge and capabilities are shared and nurtured, operating as catalysts to promote the dissemination and enhancement of Design-Enabled Innovation in public management.

By exploiting typical Participatory Design paradigms, such as a thorough exploration of the problem space, collaborative approach, and iterative development, the dASAP Learning Environment aims at adapting the design practice to the public management domain. The main goal is, therefore, to strengthen the foundation of the public management approach by reframing Design as a new policy competency.
The Learning Environment is the result of a Participatory and iterative process, carried out in a team setting. This endeavour to create a safe space in which sharing and nurturing capabilities provides a view on the potential of setting up and running a Design-Enabled Innovation process, while also creating an environment that supports innovation within the public domain.
The dASAP Learning Environment is codesigned by and for the public management community to set a common ground in which policy innovation can flourish enabled by creative tools and strategic methodologies.

Why a Learning Environment?

Public management field needs to keep pace with contemporary and evolving problems, and therefore invest in and harvest capabilities to meet future scenarios. It is crucial to have a clear vision on the back end of social advising and a staff who is aware of the wideness of its impact. Public managers need to advocate for critical discussions between them, with the organisations they are cooperating with and with people who are going to benefit their decisions.

The dASAP Learning Environment does not only provide an array of tools and methods, but it goes beyond them by focusing on underlying factors such as values, knowledge, skills and attitudes, creating appropriate conditions for methods and tools to work.

Why it is useful in practice

The Learning Environment is, at its core, a space for co-reflection, collaborative learning and capacity building, which allows to expand and strengthen the back end of the public management design process.

To fuel Design-Enabled Innovation in the public management context, it is needed to disclose the core factors behind it. The term 'innovation' indicates, in this case, an iterative process which entails demystifying values and attitudes on the back end of the public management approach, and accordingly nurturing, developing and fine-tuning skills by enhancing collaborative work and knowledge sharing. The main goal of this process is to support teams of public managers in moving from a common approach to policymaking to a more experimental and participatory one.
The focus is, therefore shifted from an individualistic perspective, which entails individuals learning new methods and tools, to a participatory one. The aim is to allow groups of public managers to learn together by sharing relevant experiences and knowledge while taking advantage of the approaches available to them.

7.2 The elements of the Learning Environment

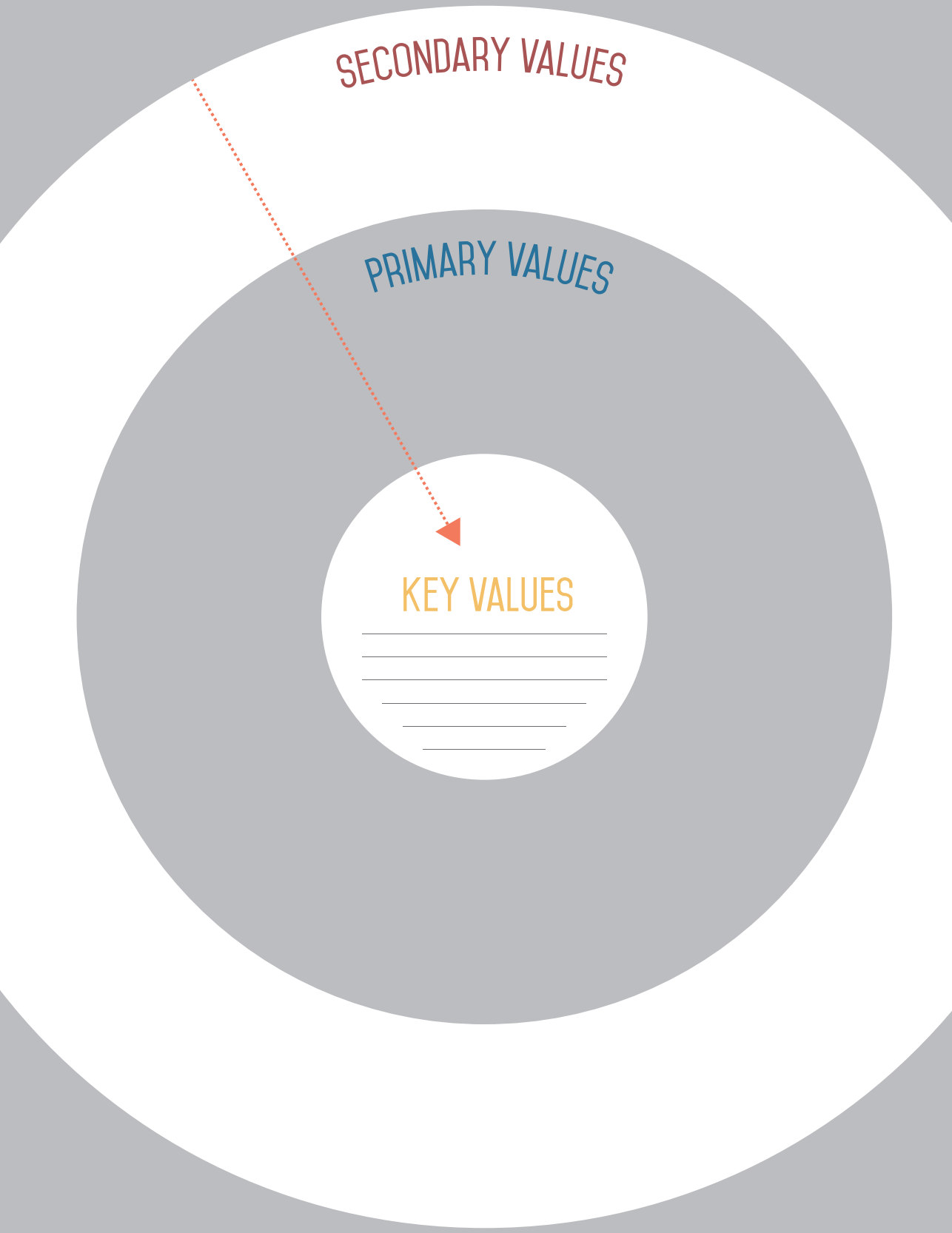
The dASAP Learning Environment elements

The dASAP Learning Environment is composed of a framework for public management capacity building, two Participatory Design tools and a Design Thinking model.

The collaborative capacity building process conveyed by the dASAP Learning Environment is the result of the integration of four different elements. These elements consist of a framework for public management capacity building, a Design Thinking model aimed at contextualising and visualising the components, and two participatory design tools to map the team's values, and to discuss and thoroughly analyse the problem to be addressed. Each one of these elements is presented in the following sections.

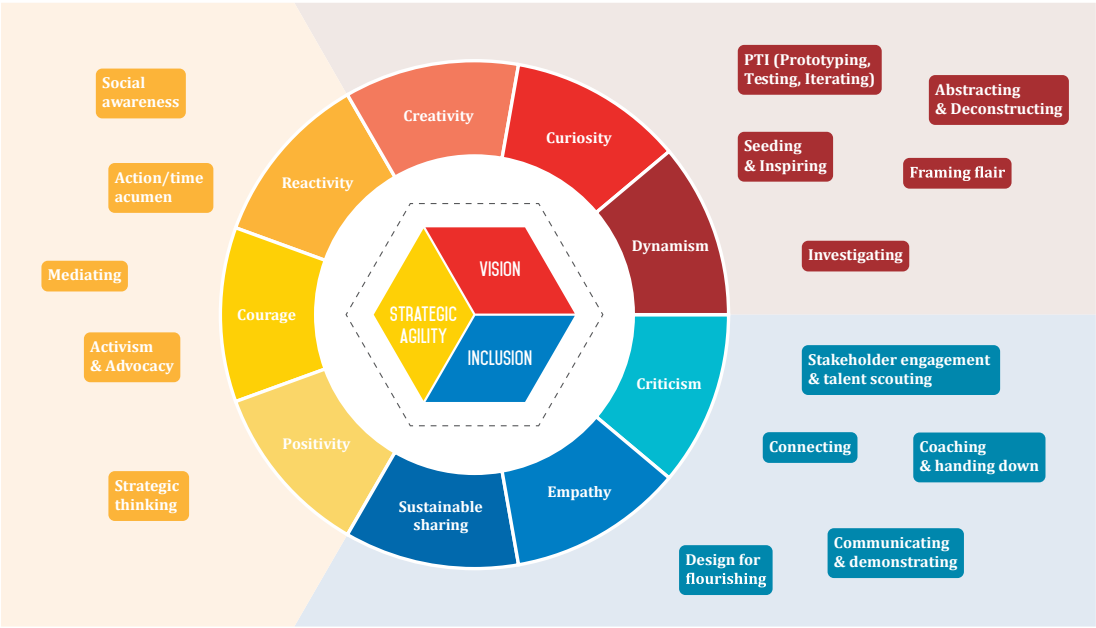
VALUE MAP AND CARD SET

The Value map and card set is a co-reflection and Participatory tool that can be used to map and discuss the values to design for or to achieve while developing new capabilities.


SECONDARY VALUES
PRIMARY VALUES
KEY VALUES

VISa COMPASS

The VISa Compass is a co-reflection and capacity-building Framework that leverages on Attitudes to discuss and envision Skills for public managers and the Knowledge needed to master them. Through three different levels of expertise (Explorer, Ambassador and Enabler) and reflective actions to assess them, it can help shaping development trajectories in a team setting.



Vision

Attitudes

Creativity: See and predict possibilities out of the ordinary for current or future problems. Mastery in creative thinking and imaginative ability.

Curiosity: Desire to know, learn or sharpen one's knowledge. Explore different possibilities and be inspired by people, things and situations.

Dynamism: Change, transform and renew in response to external and internal inputs. Iterative attitude oriented to action and "learning by doing".

Core skills

Seeding & Inspiring: Delivering and sharing compelling ideas allowing for mutual inspiration

Explorer

- Becoming familiar with out-of-the-box thinking
- Developing the ability to learn from random stimuli
- Growing sensitivity to multiple sources of ideas and individuating the most inspiring ones

Ambassador

- Proficiency in divergent thinking and in communicating unusual ideas in a compelling way
- Connecting and clustering inspirational ideas and making them useful for the whole team
- Applying tools, methodologies and frameworks to help the creative process
- Being able to inspire with novel ideas and to stimulate different stakeholders

Enabler

- Leading idea-generation processes and providing relevant and impactful inputs when needed
- Shaping mutual inspiration by bridging and connecting with each other's ideas
- Mastering tools, methodologies and frameworks to enable creativity and mutual inspiration
- Conveying compelling ideas able to inspire the entire network of stakeholders
- Naturally linking relevant ideas to precise visions, processes or situations

Abstracting & Deconstructing: Using alternative means and narratives to deconstruct and grasp the complexity

Explorer
- Learning abstraction and deconstruction methodologies and techniques
- Developing the ability to explain notions employing metaphors and analogies
- Training the ability to decompose complex concepts into smaller ones

Ambassador
- Developing a personal narrative for abstracting and deconstructing complex notions
- Naturally using metaphors and analogies to bring down complex ideas into relatable ones

Enabler
- Naturally deconstructing ideas and conveying them by using metaphors and analogies to inform and inspire the team
- Ability to organise abstract dialogues and making it relatable to all the involved stakeholders
- Leading processes aimed at mapping complex situations

PTI (Prototyping, Testing, Iterating): Making ideas tangible and systematically testing and fine-tuning them

Explorer
- Learning how to build quick prototypes and how to test them
- Developing the ability to translate ideas into prototypes
- Learning how to extract insights from prototyping and testing iterations and organising them to make them beneficial for the team

Ambassador
- Understanding the function of prototypes and the right time and context to use them
- Adapting prototypes to the scope and use them to validate possible assumptions
- Involving relevant stakeholders in prototyping-testing iterations
- Knowing what to expect from prototyping-testing iterations and matching prototypes with research questions and hypotheses

Enabler
• Leading prototyping and testing processes and organising the insights for the whole team
• Being able to assess prototypes' quality before iterative sessions and eventually finetuning them if needed
• Naturally matching prototypes with the intended scope and context

Investigating: Joining the dots. Bridging the gap between pieces of evidence and sense-making

Explorer
• Becoming familiar with how to use proofs throughout the process
• Understanding different kinds of qualitative and quantitative pieces of evidence and recognising various sources and tools to analyse them
• Learning how to summarise and synthesise evidence and drawing conclusions

Ambassador
• Ability to integrate different information and shreds of evidence and to create a consistent story
• Understanding empirical and statistical methods and the ability to assess the quality and limitations of the collected pieces of evidence
• Knowing methodologies to draw insights from the gathered pieces of evidence
• Identifying measurable indicators and building evaluative frameworks

Enabler
• Leading the development of robust evidence-informed processes
• Developing expert knowledge and guiding others on the right path(s) of inquiry
• Executing and monitoring evaluation, mapping what to expect in early and subsequent stages of the research

Framing flair: Recognising and investing in promising frames, ideas and scenarios

Explorer
• Learning how to explore the problem space and how to extract relevant themes to ideate for
• Becoming aware of the difference in relevance of frames, ideas and situations

Ambassador
• Understanding and applying problem framing methodologies and techniques
• Being able to map interconnectedness of frames, ideas and scenarios

Enabler
• Recognising at a glance promising frames, ideas and scenarios and leading decision-making processes to spot on viable solutions
• Facilitating problem framing processes and supporting the team with methodologies, tools and techniques
• Mapping and prioritising frames, ideas and scenarios for the whole team
• Drawing perspectives and lines of action and convincing the entire network of stakeholders with relevant proposals

Inclusion

Attitudes

Criticism: Critical reflection throughout the process. Readiness to examine one's knowledge and that of others and to connect causes and effects.

Empathy: Ability to align with the perspectives and opinions of others. Investigate people's experiences and their contexts to respond to their needs (explicit and implicit) with relevant solutions.

Sustainable sharing: Sharing of thoughts, actions or solutions aimed at developing complex strategies. Systematic sustainability in the design due to the transmissibility and reusability of a result or process.

Core skills:
Stakeholder engagement & talent scouting: Actively involving all the relevant stakeholders (citizens, colleagues, clients, etc.) and valorising everyone's potential

Explorer
• Learning how, when and who to engage with throughout the whole project path
• Being sensitive to external inputs and insights and learning how to adopt different points of view
• Building productive and collaborative partnerships with relevant stakeholders

Ambassador
• Building networks based on collaborative learning and doing
• Being open and respectful toward diverse points of view. Building consensus
• Being able to structure communication and engagement to support shared objectives
• Understanding and using human-centred approaches to identify solutions with the whole network of stakeholders

Enabler
• Building collaborative systems and uplifting the team by focusing on social interactions
• Determining requirements for collaboration and integrating them in the process
• Encouraging and facilitating human-centred approaches. Reflecting on different needs and structuring visions accordingly

Connecting: Stimulating rich interactions and setting a common ground to generate social value and exchanging feedback

Explorer
• Actively learning from constructive feedback and being open to discussion
• Developing the ability to recognise the social benefits embedded in the stakeholders' context

Ambassador
• Offering frank and constructive feedback to peers and envisioning strategies to operationalise them
• Promoting a culture of sharing and facilitate connections within the team
• Accepting medium-big responsibilities, predisposition to self-reflection and to working with others

Enabler
• Creating and envisioning ways of giving and receiving feedback, facilitate difficult conversations on quality, performance and team dynamics
• Being able to create safe spaces for discussion and exchange of feedback and insights
• Iteratively question the effectiveness of communication within the stakeholders' network and implement solutions when needed

Coaching & handing down: Developing individuals' and teams' capabilities by passing on knowledge

Explorer
• Learning how to work with personal and peers' strengths and points of improvement

Ambassador
• Sharing knowledge and expertise. Reviewing others' work and conceiving every type of effort as a team's effort
• Supporting quality control processes

Enabler
• Providing practice-based training through supervision, guidance, coaching and mentoring
• Bringing innovation to team culture, celebrating achievements and learning from mistakes in a reflective way

Design for flourishing: Designing proposals aimed at flourishing. Considering workable and feasible solutions with personal and societal development as the main objective

Explorer
• Learning how to develop options with personal and societal flourishing in mind
• Learning tools and instruments to drive flourishing and increase expertise

Ambassador
• Confidently include personal and societal flourishing options in the design process. Thinking consistently on the outcomes and how to adapt them to long-lasting outcomes
• Supporting flourishing-focused decision-making processes
• Assessing the impact of envisioned factors on future-benefits
• Including different stakeholders to receive advice on how to consistently design for flourishing

Enabler
• Facilitating decision-making processes on personal and societal flourishing options
• Challenging traditional ways of designing for flourishing with innovative and socially sustainable ideas
• Identifying issues and addressing risks and benefits

• Creating roadmaps to integrate personal and societal flourishing in the process

Communicating & demonstrating: Thoroughly sharing (and demonstrating the value of) ideas and messages that fit the intended audience and scope

Explorer
• Being able to structure a clear and concise communication
• Learning how to produce communication outputs with different media
• Being confident while contributing to discussions

Ambassador
• Structuring high-quality communication outputs
• Confidently presenting to medium-large audiences in an accessible way and adapting to them
• Representing the team's decisions at a high level, with a clear structure

Enabler
• Structuring self-explanatory communication outputs able to convince, demonstrate and inspire
• Helping peers in developing communication skills
• Presenting confidently with all kinds of audience and encouraging them
• Representing the team's decisions in all types of setting

Strategic agility

Attitudes

Positivity: Motivation concerning current situations and set goals. Take positive inspiration from yourself and others to promote an honest and realistic impact.

Courage: Proactive attitude towards the unknown. Overcoming the fear of failure and readiness to take risks.

Reactivity: Adapt promptly to the typical transitions of complex processes and respond to contingencies flexibly.

Core skills:

Social awareness: Being informed and aware of the societal landscape and knowing how, when and where to act

Explorer
• Becoming aware of the context priorities and dynamics, and where the team's work fit
• Developing knowledge of the team's and stakeholders' context
• Growing understanding of the implications of the team's actions

Ambassador
• Understanding context priorities and history and learning lessons from precedents
• Articulating how the context influences the team's work and programmatic objectives

Enabler
• Highly skilled at gaining understanding from the context and desired outcomes, scope, and risks, to shape new directions
• Scanning, anticipating and responding to changes in priorities. Recognising trends to drive significant shifts in context.
• Sharing information and insights to inform stakeholders and affect changes in the network's ecosystem

Action/time acumen: Projecting long-term visions composed of doable short-term goals

Explorer
• Developing the ability to manage own workload and to clarify priorities
• Knowing how to match timeliness and quality
• Learning scope, scope management and accepting tasks with regards of feasibility and deadlines
• Breaking down the workload into logical steps and tasks, and estimate time to fulfil them

Ambassador
• Understanding the commissioning process and actively organising deliverables
• Leading simple or medium operations aimed at addressing long-term goals
• Identifying when a process fits the purpose(s) of the team
• Understanding a variety of planning and management techniques and how to apply them in practice

Enabler
• Translating strategies, priorities and issues into projects with clear intent, direction and scope
• Leadership in programming team and ensuring the right expertise is available at the right time
• Managing and facilitating clear and meaningful decisions and arrangements
• Managing team dynamics and relationships with stakeholders to ensure a consistent and choral effort on long-term goals

Mediating: Negotiating common values and mediating conflicts to reach shared ownership

Explorer
• Learning tools and techniques to mediate conflicts
• Being open to solve disputes and having dialogues instead of avoiding contrasts

Ambassador
• Understanding and applying the tools and techniques to mediating and actively taking part in solving conflicts

Enabler
• Facilitating and leading mediation processes. Consistently and constructively solving conflicts
• Recognising the right time to act to benefit the team and the network of stakeholders

Activism & Advocacy: Striving for social change and innovation and advocating for valuable and disruptive ideas

Explorer
• Learning strategies to challenge the status quo and how to individuate arguments to justify disruptive choices
• Learning not to be attached to one idea and to consider the connections between notions

Ambassador
• Understanding and applying strategies to challenge the status quo

• Linking disruptive ideas to outcomes and benefits and mapping them
• Recognising models to transform innovative ideas into solutions

Enabler
• Actively challenging the status quo and proposing ground-breaking approaches to the stakeholders
• Proactively taking the chance and daring to risk whenever it is possible
• Stimulating questions and inspire proactive thinking
• Relating notions to real-world and real issues and assess them in the context

Strategic thinking: Shaping action trajectories by merging multiple perspectives, methods and analytical frameworks

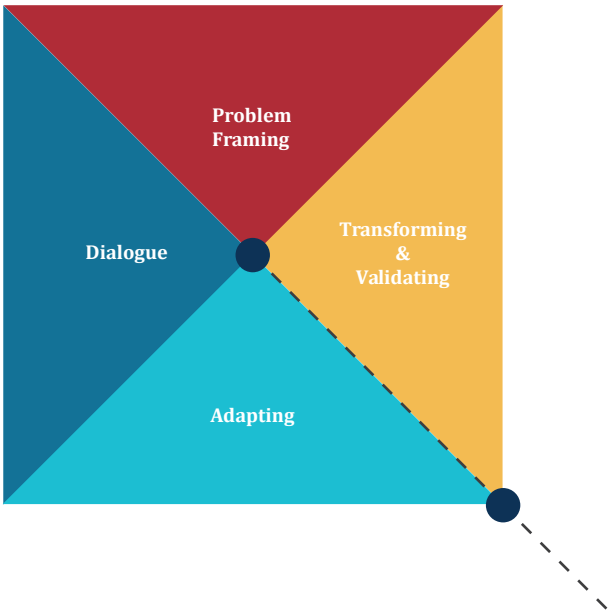
Explorer
• Learning how to think conceptually and imaginatively, participating in vision and strategy-related activities
• Becoming familiar with the team's drivers of change
• Recognising patterns within the whole network of stakeholders

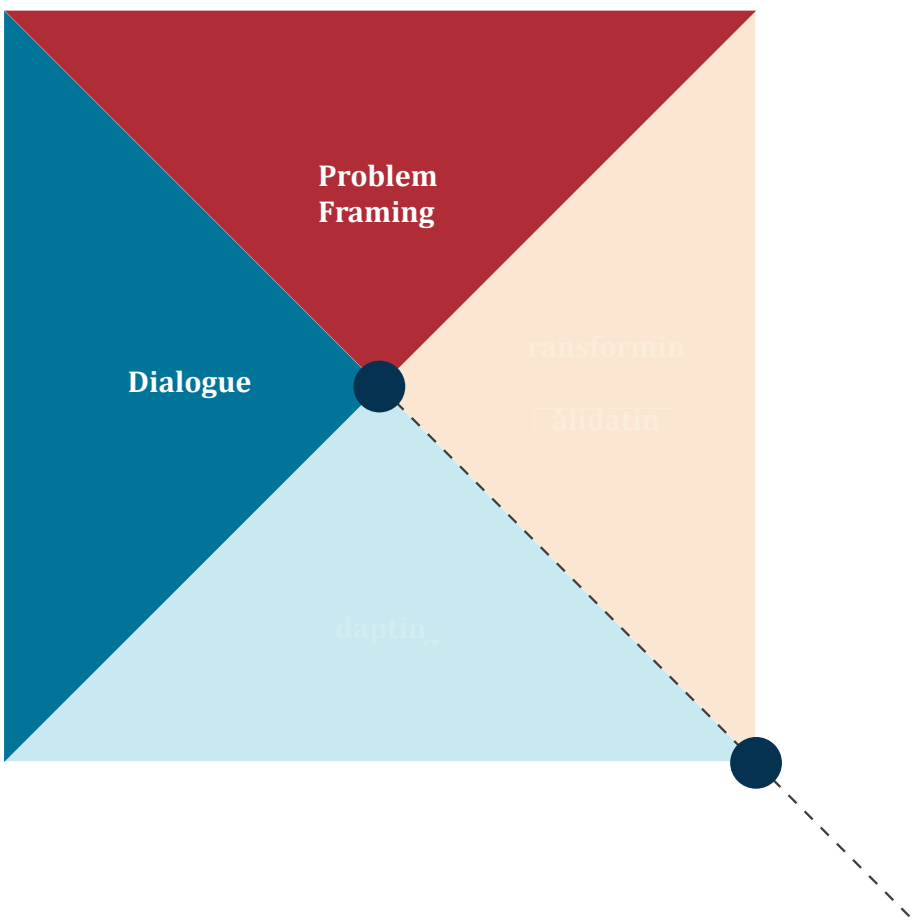
Ambassador
• Contributing to the vision and strategy-related activities, envisioning long-term activities
• Understanding the wide context area and underlying patterns
• Understanding trends and how they can fit with the vision

Enabler
• Facilitating and leading vision and strategy activities. Translating strategic plans to action plans
• Having profound knowledge of the broader strategic context with related drivers, assumptions and possible lines of actions
• Comprehensive expertise in strategic forecasts and linking speculation to vision in a natural way

KITE DESIGN THINKING MODEL

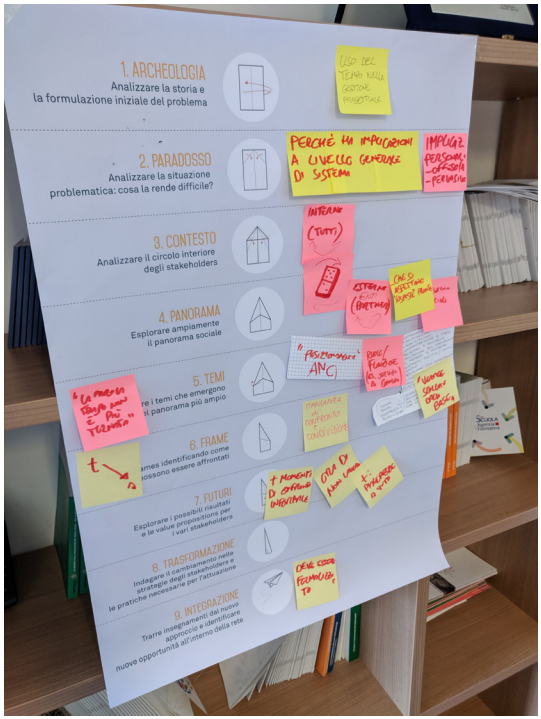
The Kite Design Thinking model aims informing the process of strenghtening the back-end of the public management approach, it is divided into problem and solution space and the center represent the achievement of a shared vision within the team using it. It mainly focuses on the Dialogue phase (in which the Value map and card set and the VISa Framework should be used to generate visions based on values and to ignite the capacity-building process. Subsequently, in the Problem Framing area, the Frame Creation tool can be used to start analysing and decomposing the problem to be addressed.




Problem
Framing
Dialogue

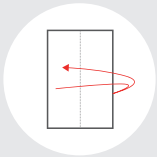
FRAME CREATION MODEL

The Frame Creation model adapts Dorst's theories on Problem Framing to the public management field, to support practitioners in decomposing complex problems into more digestible challenges.



ARCHAEOLOGY

Analysing the history
of the problem owner
& the initial problem formulation



PARADOX

Analysing the problem
situation: what makes this hard?

CONTEXT

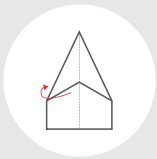
Analysing the
inner circle of stakeholders

FIELD

Exploring the broader field

THEMES

Investigating the themes that
emerge in the broader field



FRAMES

Identifying patterns
between themes to create frames

FUTURES

Exploring the possible outcomes and
value propositions for the
various stakeholders

TRANSFORMATION

Investigating changes in
stakeholders' strategies
and practices required for
implementation

INTEGRATION

Drawing lessons from the new
approach & identify
new opportunities within the network.

CHAPTER 8: REFLECTIONS AND CONCLUSIONS

Chapter 8 is the final element of the present report, in which the insights and the lessons learned during the project are discussed, and reflections on limitations and contributions of the project are made. The chapter terminates with guidelines for the dASAP Learning Environment and with an implementation roadmap for the proposed design.

8.1 Project Recap

Before moving on with the conclusive part of the project, the current section provides an overview of the activities performed until now.

This graduation project was initiated with the intent of framing design as a new policy competency by exploiting the pedagogical potential of Design thinking knowledge, skills and attitudes. As introduced in Chapter 1, the goal was to initiate a design capacity-building process with the co-creation of a Learning Environment in which sharing and nurturing capabilities. During the research phase, two literature studies have been combined with a context study, carried out in the context of Tuscany, the region in which ANCI, the company I worked with, operates as the regional association of municipalities. The company was chosen to develop the project due to the outreach power that the selected public managers have within their context, and the strategic impact they can kickstart by practising, finetuning and diffusing design capabilities. Chapter 2 extensively describes how both the literature and the contextual studies have been integrated to constitute a Research Framework, covering the topics of Design Thinking, Capacity building, Problem Framing and Design Capabilities. Subsequently, the project scope was narrowed down, and two main research questions have been formulated to describe the final objective: What are the factors underpinning a Learning Environment for public managers? How might the Learning Environment allow for sharing and nurturing design capabilities? Chapter 3 details the project approach, along with the structure followed throughout the project development, which consisted of the combination of the Double Diamond design process and the Research Through Design approach. A Participatory design mindset has been adopted to organise the sessions, and to design tools and frameworks. Throughout the four Participatory sessions, described in Chapters 4, 5 and 6, the Learning Environment has been incrementally prototyped and tested with a team of seven public managers, and finally validated in the context. The sessions are structured in three Cycles, called 'Reframing the challenge', 'Designing the Learning Environment', and 'Evaluating the impact'. The insights gained from each Cycle contributed to reinforce the design and to inform the following iterations. The dASAP Learning Environment, presented in Chapter 7, is the outcome of the design research process. The Learning Environment reflects the Participatory design process since it is composed of tools and frameworks prototyped, finetuned and validated with the team of public managers. This chapter will conclude the project, with the formulation of guidelines and recommendations, to allow for further research and the implementation of the proposed design in practice.

8.2 Reflection on the dASAP Learning Environment

The final design of the dASAP Learning Environment fulfilled the Design requirements of Modular, Adaptable and Supportive, which have been recognised fundamental characteristics for a Learning Environment addressed to public managers (see Chapter 3).
The research conducted to formalise the Design requirements for evaluating the Learning Environment covered the themes of Design Thinking, Capacity building, Problem Framing and Design Capabilities, and the results of the analysis pointed at the opportunity to strengthen the back end of the public management process. Moreover, Capacity building and Design Capabilities literature agree on the effectiveness of a deconstructed and incremental form of learning. This is how Supportive and Modular were chosen as drivers for the development of the dASAP Learning Environment. Modularity is the characteristic of the final design, which might enable public managers to have a wide range of actions supporting them in addressing the complex challenges they face daily. The Adaptable requirement takes here an important role, representing the characteristic which ensures flexibility in support and might empower public managers by making them relate to the Learning Environment and feel recognised by their team. The Design requirements can provide an answer to both the research questions formulated at the beginning of the project, representing at the same time essential factors underpinning the Learning Environment and enablers for the process of nurturing and sharing design capabilities. To conclude, the achieved fit of the final design to the requirements formulated at the beginning of the project meets the assignment of framing design as a new policy competency by exploiting the pedagogical potential of Design thinking knowledge, skills and attitudes.

8.3 Insights

Insights on the dASAP Learning Environment

The result of the design research conducted for this project is a Learning Environment for capacity-building in public management. The outcome demonstrates how integrated design research and development conducted with public managers can empower them to proactively and tangibly fuel a Design-Enabled Innovation and transition within their context. By starting a Participatory and iterative process focused on creating and fine-tuning tools and frameworks, not only it is possible to diffuse design knowledge, but also to set up a flexible environment that can endure in time and be adapted to future challenges. The Learning Environment impacts the back end of the public management approach, enabling practitioners to address present challenges and envision strategies for future ones.

Insights on the design research

Working at the crossroads of design practice and research is a challenging effort, and it requires a structured approach and prompt actions to react to all the promising insights. The project entailed a high degree of complexity, due to the openness of the analysed field and to mostly dealing with qualitative data, making it very difficult to measure and assess the impact of every intervention. My most significant insight during the research phases was that simplicity is often the most effective means to deal with complexity because it helps in individuating the primary needs, allowing for reaching deeper layers one step at a time. As the project advanced, I gained more and more awareness of the impact that designers can have in open domains such as public management. This is mainly because their expertise does not prevent them from losing the track but help them to make the most of the insights gathered while wandering.

Insights on the context

The context selected to carry out this project is notoriously object of different and layered challenges. In the first stages of the project, I had a broad set of assumptions related to public managers and on their way of working, and most of them have been disproved during the process. My most prominent hypothesis was that practitioners in the public field mostly adopt top-down approaches and a managerial way of dealing with problems. However, since the first session, I notice a diffuse attitude for participation and for empathising with citizens.

Moreover, they demonstrated a grounded awareness of the impact that capacity-building can have on the domain. The only missing component is a shared vision on what Design Thinking (knowledge, skills and attitudes) is. The endeavour of co-creating a Learning Environment during this project was a way to bridge this gap. Now that the project is finished, I firmly believe that Design knowledge, skills and attitudes applied with a participatory mindset can notably improve public management by offering a tangible way of connecting present actions with future innovation.

8.4 Limitations & recommendations

International relevance

The project has been set up and carried out in Italy; therefore, to be validated internationally, it needs further iterations and validations in multiple nations. The Learning Environment can be tested in its original form in numerous geographical areas, but it could (and should) be influenced and modified according to different contextual settings.

The value is conveyed through direct experience

The value of the present project can exclusively be conveyed by means of experience. In other words, it is needed to practice the learning environment directly in order to fully understand its impact.

Implementation and design knowledge

The implementation process should be assisted by professional designers, in order not to lose an expert overview while training the trainers on the context, and to help with practical and theoretical knowledge during the infrastructuring process.

Feasibility

While the dASAP Learning Environment is feasible and directly implementable in the context, it will require some procedural changes. The main challenge is related to the get all the stakeholders on board, and to bring the Learning Environment to an awareness level within the company.

Viability

The Learning Environment represents a viable means for initiating a Design-Enabled innovation within the public management domain because it will not cause ANCI to spend vast resources on implementation. Moreover, it has demonstrated to have a positive impact on public managers' perception of collective learning and capacity building, mostly because it was designed from the eyes of public managers, so that they can relate to it.

Considerations on scalability

Scalability is one of the keywords included in the initial formulation of the design goal. However, it was not selected as Design requirements because not directly observable nor measurable within the project timeframe. The Learning Environment has been designed to be scalable, and the fulfilled Design requirements demonstrate extreme flexibility of the proposed design. However, to validate this parameter, it might be necessary to perform further iteration in different context and settings.

8.5 Contributions

Contributions to design knowledge

The project started with an iterative research process which integrated theory and insights from the context, to envision an all-round approach to the project. The studies were focused on prominent features of Participatory Design, Design Thinking, learning and education theories, to converge to the definition of requirements to profitably adapt design practice to the public management domain. The description of strategies to diffuse design within the public field and the reflections made while doing so are the main contributions of this project to the design knowledge. Finally, the deconstructive approach, applied to both the research phase and the design iterations can be the object of further studies, to better connect research and practice while working on Participatory projects.

Contributions to design practice

The final design includes different elements, such as a value-mapping tool, a Design Thinking model for public managers, a Framework for capacity-building based on knowledge, skills and attitudes, and a tool for applying Problem Framing in practice. The different components offer to practitioners (both in the design and public management fields) a way to directly apply design knowledge in the public domain.

The dASAP Learning Environment applied to kickstart and carry out a capacity-building process is an example of how designers can use their knowledge to foster societal innovation, and it strives to stimulate designers' interest in the public domain.

The following section presents guidelines on how to apply the Learning Environment in practice.

8.6 Guidelines

1. SHARE THE PROCESS, SHARE THE OUTCOME

Democratise tools, methodologies and outcomes of every process by making them available and reusable.

2. EMBRACE COMPLEXITY BY MEANS OF SIMPLICITY

Do not be discouraged by open, complex, dynamic and networked challenges. Decompose complex issues one step at the time in order to create a framework of achievable goals.

3. MEDIATE PERSONAL MOTIVATIONS AND VALUES TO ENHANCE PARTICIPATION

Real engagement comes from motivation, and proactive participation is the result of a balance between individual incentives and team's ambitions

4. LEARN FROM PARTICIPANTS AND LET THEM SHARE THEIR KNOWLEDGE

Inspiring experiences have intrinsic and motivational power. Let public managers express their knowledge, to benefit the whole team.

5. MAKE THE DEBATE VISIBLE AND TANGIBLE

Materialise abstract discussions employing artefacts, to take the debate to a relatable level and to generate contextual awareness.

6. MAKE TOOLS ADAPT TO PARTICIPANTS AND NOT VICE VERSA

Shared ownership can be achieved by allowing public managers to add a personal touch on tools and methods so that they can feel responsible for the whole learning process.

8.7 Roadmap for implementation and future development

The present roadmap for implementation and further development of the dASAP Learning Environment spots on different actions that can be performed over a period of 24 months in order to guarantee a profitable implementation of the concept.

0-6 months

- Pitching the final version in ANCI in a plenary setting
- Continuing the testing and validation iterations with different teams
- Creating a website to explain and diffuse the Learning Environment and the related guidelines

6-12 months

- Piloting the Learning Environment with ANCI's partners
- "Training the trainers" in ANCI
- Translating the Learning Environment in multiple languages

12-24 moths

- After one year, reflecting on the iteration performed and envisioning future strategies
- Pitching the Learning Environment and the related iteration performed on it to international partners
- Piloting the Learning Environment with international partners

BIBLIOGRAPHY

Bibliography

Akama, Y. (2017). Surrendering to the ocean: Practices of mindfulness and presence in designing. In *Routledge Handbook of Sustainable Design*. 219-230. Routledge.

Almquist, E., Senior, J., & Bloch, N. (2016). The elements of value. *Harvard Business Review*, 94(9), 47–53.

Bakarman, A. A. (2005). Attitude, skill, and knowledge:(ASK) a new model for design education. *Proceedings of the Canadian Engineering Education Association (CEEA)*.

Björgvinsson, E., Ehn, P., & Hillgren, P. A. (2010). Participatory design and democratizing innovation. In *Proceedings of the 11th Biennial participatory design conference*, 41-50. ACM.

Boehnert, J., Lockton, D., & Mulder, I. (2018). Designing for transitions. *DRS 2018: Design Research Society*, 25–28 June 2018, Limerick, Ireland.

Bradwell, P., & Marr, S. (2017). Making the most of collaboration: an international survey of public service co-design. *Annual Review of Policy Design*, 5(1), 1-27.

Breckler, S. J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitude. *Journal of Personality and Social Psychology*. 47 (6): 1191–1205.

Brown, T. (2008). Design thinking. *Harvard business review*, 86(6), 84.

Buchanan, R. (1992). Wicked problems in design thinking. *Design issues*, 8(2), 5-21.

Burkett, I. (2016). Could prototyping reduce risks and increase the chance of success in policymaking. *Tacsifest*. Melbourne, Australia.

Carlgren, L., Rauth, I., & Elmquist, M. (2016). Framing Design Thinking: The Concept in Idea and Enactment. *Journal for Creativity and Innovation Management*, 25(2016), 38–57.

Cebrián, G., & Junyent, M. (2015). Competencies in education for sustainable development: Exploring the student teachers' views. *Sustainability*, 7(3), 2768-2786.

Cohen, R. (2014). Design thinking: A unified framework for innovation. *Forbes Online*. Retrieved from: http://www. forbes.com/sites/reuvencohen/2014/03/31/design-thinking-aunified-framework-for-innovation/2.

Cross, N., Christiaans, H., & Dorst, K. (1994). Design expertise amongst student designers. *Journal of Art & Design Education*, 13(1), 39-56.

Cross, N. (2004). Expertise in design: an overview. *Design studies*, 25(5), 427-441.

Dorst, K., & Cross, N. (2001). Creativity in the design process: co-evolution of problem–solution. *Design studies*, 22(5), 425-437.

Dorst, K. (2006). Design problems and design paradoxes. *Design Issues*, 22(3), 4-17.

Dorst, K. (2010). The Nature of Design Thinking. In *DTRS8 Interpreting Design Thinking: Design Thinking Research Symposium Proceedings*, 131–139. Sydney, Australia: DAB Documents.

Dorst, K. (2011). The core of "design thinking" and its application. *Design Studies*, 32(6), 521–532.

Dorst, K. (2015). Frame Creation and Design in the Expanded Field. *She Ji: The Journal of Design, Economics, and Innovation*, 1(1), 22–33.

Dorst, K. (2019). Design beyond Design. *She Ji: The Journal of Design, Economics, and Innovation*, 5(2), 117–127.

Dreyfus, S. E. (2004). The five-stage model of adult skill acquisition. *Bulletin of science, technology & society*, 24(3), 177-181.

Guindon, R. (1990). Designing the design process: Exploiting opportunistic thoughts. *Human-Computer Interaction*, 5(2), 305-344.

Hassi, L., & Laakso, M. S. (2011). Conceptions of design thinking in the management discourse. *Proceedings of the 9 Th European Academy of Design (EAD)*. Lisbon, Portugal.

Hekkert, P., & van Dijk, M. B. (2011). *Vision in design: A guidebook for innovators*. Amsterdam, Netherlands: BIS Publishers.

Hertogh, M., & Westerveld, E. (2010). *Playing with Complexity. Management and organisation of large infrastructure projects*.

Johansson-Sköldberg, U., Woodilla, J., & Çetinkaya, M. (2013). Design thinking: past, present and possible futures. *Creativity and innovation management*, 22(2), 121-146.

Kensing, F., & Blomberg, J. (1998). Participatory design: Issues and concerns. *Computer Supported Cooperative Work (CSCW)*, 7(3-4), 167-185.

Kimbell, L. (2011). Rethinking design thinking: Part I. *Design and Culture*, 3(3), 285-306.

Lawson, B., & Dorst, K. (2009). *Design expertise*. Oxford, UK: Architectural Press.

Le Dantec, C. A., & DiSalvo, C. (2013). Infrastructuring and the formation of publics in participatory design. *Social Studies of Science*, 43(2), 241-264.

Malcolm, J., Hodkinson, P., & Colley, H. (2003). *Informality and formality in learning: a report for the Learning and Skills Research Centre*. Learning and Skills Research Centre.

Martin, R. (2009). *The design of business*. Cambridge MA: Harvard Business Press.

Mavrikios, D., Papakostas, N., Mourtzis, D., & Chryssolouris, G. (2013). On industrial learning and training for the factories of the future: a conceptual, cognitive and technology framework. *Journal of Intelligent Manufacturing*, 24(3), 473-485.

Max-Neef, M. A. (2005). Foundations of transdisciplinary. *Ecological Economics*, 53(1), 5-16.

Mosely, G., Wright, N., & Wrigley, C. (2018). Facilitating design thinking: A comparison of design expertise. *Thinking Skills and Creativity*, 27, 177-189.

Mouffe, C. (2016). Democratic Politics and Conflict: An Agonistic Approach. *Política Común*, 9, 17–29.

Naranjo-Bock, C. (2012). Creativity-based Research: The Process of Co-Designing with Users. *UX Magazine*, 4, 2012.

Noweski, C., Scheer, A., Büttner, N., von Thienen, J., Erdmann, J., & Meinel, C. (2012). Towards a paradigm shift in education practice: Developing twenty-first-century skills with design thinking. In *Design thinking research*. 71-94. Berlin, Germany: Springer.

Patton, M. Q. (2002). Two Decades of Developments in Qualitative Inquiry: A Personal, Experiential Perspective. *Qualitative Social Work*, 1(3), 261–283.

Portugali, J. (2011). *Complexity, cognition and the city*. Springer Science & Business Media.

Rowe, P. (1987). *Design thinking*. Cambridge, MA: MIT Press.

Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *Co-design*, 4(1), 5-18.

Sanders, E. B. N., & Stappers, P. J. (2012). *Convivial Toolbox: Generative Research for the Front End of Design*.

Sanoff, H. (1990). *Participatory design: Theory and techniques.* Raleigh, NC: Bookmasters.

Schmiedgen, J., Rhinow, H., Köppen, E., & Meinel, C. (2015). *Parts Without a Whole? The Current State of Design Thinking Practice in Organizations.* Study Report, 97. 144. Potsdam: Hasso-Plattner-Institut für Softwaresystemtechnik an der Universität Potsdam.

Stacey, R. D., Griffin, D., Shaw, P. (2000) *Complexity and Management. Fad or radical challenge to systems thinking?* London, UK: Routledge.

Stacey, R., Griffin, D. (2007). *Complexity and the experience of managing in public sector organizations.* New York, NY: Routledge.

Trilling, B., & Fadel, C. (2009). *21st-century skills: Learning for life in our times.* San Francisco, CA: Jossey-Bass.

Vinke, D. (2003). *Industrial design at TU/e: the student as a junior employee.* Interim report.

Whitbeck, C. (1998). *Ethics in engineering practice and research.* Cambridge, UK: Cambridge University Press.

APPENDIX

Appendix A: Project Brief

DESIGN FOR our future

TU Delft

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy".
Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name	Rita
initials	F.
given name	Federico
student number	4750527
street & no.	Gasthuislaan 232
zipcode & city	2611RC Delft
country	The Netherlands
phone	+39 3342939191
email	f.rita@student.tudelft.nl

Your master programme (only select the options that apply to you):

IDE master(s): ( ) IPD (★) DfI ( ) SPD

2nd non-IDE master:

individual programme: - - (give date of approval)

honours programme: (★) Honours Programme Master

specialisation / annotation: ( ) Medisign

( ) Tech. in Sustainable Design

( ) Entrepeneurship

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair	Ingrid Mulder	dept. / section:	ID/DCC
** mentor	Alicia Calderón González	dept. / section:	ID/DCC
2nd mentor	Besnik Mehmeti		
	organisation: ANCI Toscana		
	city: Florence	country:	Italy

comments (optional): The approach fits well with Ingrid's expertise and aligns with the training modules Alicia is working on within the Designscapes project. Thus, she has an overview of the state of the art and my contribution to the bigger scope.

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

Second mentor only applies in case the assignment is hosted by an external organisation.

Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

Procedural Checks - IDE Master Graduation

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair Ingrid Mulder date - - signature

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair.
The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: EC

Of which, taking the conditional requirements into account, can be part of the exam programme EC

List of electives obtained before the third semester without approval of the BoE

YES all 1st year master courses passed

NO missing 1st year master courses are:

name date - - signature

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **.
Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: APPROVED NOT APPROVED

Procedure: APPROVED NOT APPROVED

comments

name date - - signature

Initials & Name F. Rita Student number 4750527

Title of Project Design as a new policy competency

Design as a new policy competency

project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 01 - 07 - 2019

06 - 12 - 2019 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Participatory Design (PD) often referred as a practice born with the aim of democratizing workplaces and empowering the skilled workers, by making them act in public decision making within their companies (Björgvinsson, Ehn & Hillgren, 2010).
However, due to historical transitions we witnessed in the last two decades (globalisation, latest IT implementations, and major changes in the political landscape), the interest in PD has grown and its application has been scaled up to a bigger context: the human public and relational sphere in cities.
Therefore, in order to consciously design for transitions, it is fundamental to take into account not only an outcome, but also how transitions are conceived, enacted, governed and managed (Boehnert, Lockton, & Mulder, 2018, p. 892). The process plays, in this case, a central role, representing a holistic view of the interconnectedness of social practices, human values and capabilities (Fig.1).

The general perspective of PD shifted from "democracy at work" to "democratic innovation", from equality to equity and from low to high polarity amongst public managers and subsequently citizens, thanks to the agonistic approach, framed by PD methodologists (Kensing & Blomberg, 1998). This change of polarity affected in an irreversible way the citizens' involvement in the public debate, by decentralizing it and making the antagonism prevail on the agonism.

Hence, the major shift was about the context of PD. From a more private and therefore comfortable discussion to a public and complex one. Complexity entails a multitude of forces that we can control and canalize (Portugali, 2011), but difficultly foresee. In other words, we have seen how publics grow around attachments in the public debate (Le Dantec & DiSalvo, 2013), and therefore around practices. However, participants need regulations and rules to reach a consensus through an agonistic debate. Consequently, the designer has been recognised as the one that can act as a facilitator and mediator (Manzini, 2015), in order to ease this transition and nurture citizens' skills more than simply teaching them in a unilateral way.

In order to do that, it is important to foster productive and bilateral collaboration between public managers and citizens. Collaboration can have different declinations, according to its scope (Fig. 2), but it represents a safe space in which social innovation can flourish. It is a space in which skills are shared, nurtured, and continuously influence and support the development process.

The opportunity individuated for this Graduation Project is to support and enable public managers in actively involving citizens in public decision making by creating a socially sustainable way of collaboration based on shared values and capabilities.

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introduction (continued): space for images

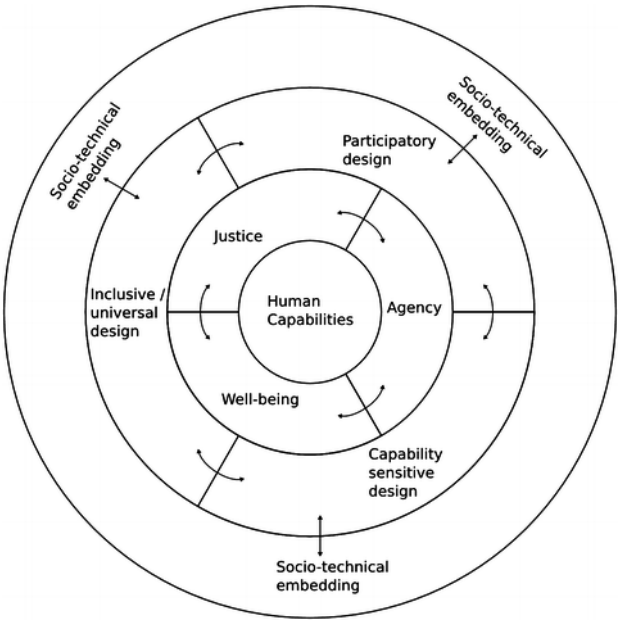

image / figure 1: Values central in the capability approach and their relation to design (Oosterlaken, 2015)

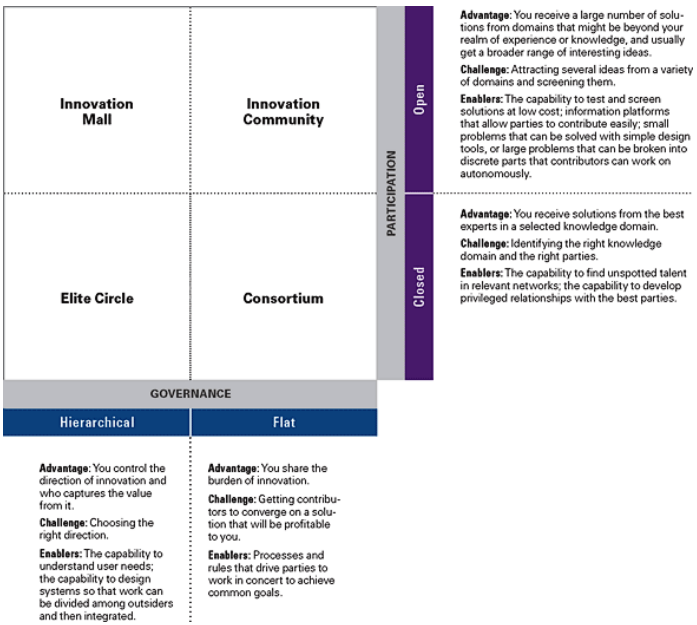

image / figure 2: The four ways to collaborate (Pisano & Verganti, 2009)

Initials & Name F. Rita Student number 4750527

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PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

In an Open letter to the Design community (2017), Manzini and Margolin addressed the urge for design practitioners and researchers to focus on the role that design can play in building and nurturing skills to enable citizens' participation.

When analysing the nowadays public debate, and the state of participatory governance, indeed, it is possible to observe a contemporary form of alienation. This is particularly related to unilateral public decision-making processes, which spot on a poor level of citizens' involvement in public decisions. Infrastructuring towards the 'publics' covers here a primary role because it represents the process of identifying and forming attachments, social and material dependencies and commitments of the people involved (Latour, 2004; Marres, 2007).

According to Manzini (2015), the diffuse design process, which is the act of enabling non-design-trained individuals to nurture their intrinsic design capabilities, is likely to allow those individuals to apply the process by themselves on other individuals. Therefore, after understanding the potential of Design Thinking (knowledge, skills and attitudes), public managers would be aware of the social impact they can foster by means of these techniques, and generate an innovation loop by involving citizens.

By crafting a learning environment in which actively sharing knowledge and capabilities, it would be possible to rephrase contemporary political values and enable public managers to open up to citizens with a new awareness and more confidence, allowing for long-lasting mutual reliability and active collaboration.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

To transfer Design Thinking (knowledge, skills and attitudes) to public managers by designing a learning environment in which sharing and nurturing capabilities and enable them to actively include citizens in public decision making.

A research-through-design approach (Stappers & Giaccardi, 2018) will be used to explore how a learning environment - which is the resulting force of a Design Thinking course and a safe space in which the same will be applied - can empower public managers with regard to their own role and their relationship with the citizens. Specifically, such a constructive design research approach allows discovering the main problems while designing (Slingerland, Mulder & Jaskiewicz, 2018). The presented study, therefore, not only delivers a design intervention but also generates guidelines for using the learning environment to foster and nurture new policy competencies.

The design goal accompanying and informing the intervention design process is the one mentioned at the beginning of this section. Accordingly, the research questions are:
- Could design capabilities (knowledge, skills and attitudes) represent a new policy competency?
- In what way can Design Thinking impact and improve public managers' way of working?
- How can design capabilities be trained, shared and nurtured?

The project will be carried out with ANCI Toscana, a regional association of municipalities based in Florence (Italy), and is part of the TU Delft Participatory City Making Lab.

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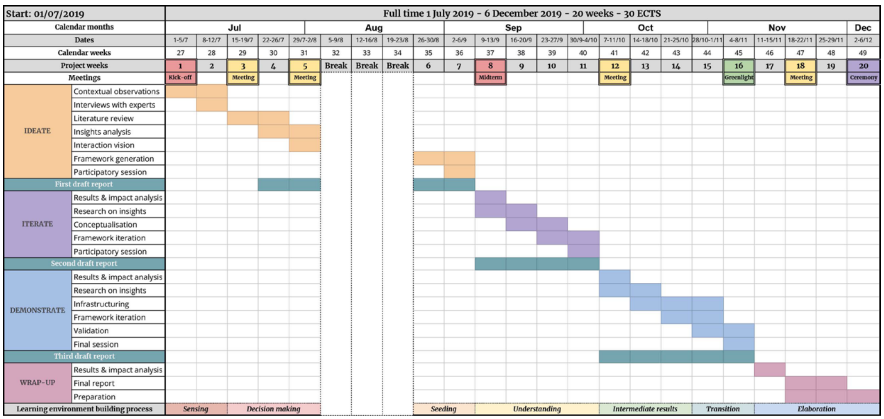
PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 1 - 7 - 2019 6 - 12 - 2019 end date



The project will follow an iterative process, divided into 3 main cycles. Each iteration will follow the Double Diamond design process (Discover, define, develop, deliver). Since I will start the Graduation Project directly after finishing my internship, and the ANCI Toscana offices will be closed for holidays from July 15 until August 20, I decided to plan my break accordingly (see chart). The kick-off and the midterm meeting (indicated in light red on the GANTT chart) will happen respectively in week 1 and 8. The greenlight meeting is planned for week 16 and it is marked in green on the chart. The graduation ceremony (violet) is expected to be in the first week of December (week 20). Other procedural meetings are indicated in yellow and set on week 3, 5,12 and 18.

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MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

My ambition for this project is to explore how design research can be framed and applied within the political and societal landscape. I will experience how design practice can be an active part of social dynamics and create an impact in complex systems. Moreover, I will deepen my research skills by applying them and practising design for social innovation. Lastly, I will put the methodologies I learned during my Master's studies at work in an external context (namely, as specified above, in Italy).

During the first year of my Master's I got to know the Participatory City Making methodology during the Context & Conceptualisation course, during which I followed the homonymous track and wrote a paper on how socially responsible co-design intervention can help in coping with loneliness. A topic which I took further with my Honours Programme research. During the elective semester of my second year, it was particularly inspiring for me to participate in the course Deep Dive: Design X Democracy, during which I deepened my knowledge on the topic and subsequently prepared a fertile theoretical ground to start exploring the topic all over again.

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

Initials & Name F. Rita Student number 4750527

Title of Project Design as a new policy competency

Appendix B: Consent Form

Consent Form

Dear participant,

thank you for participating in this study.

I am a design researcher from Delft University of Technology's *Participatory City Making Lab*, and I am working on a graduation project named "*Design as a new policy competency*". The objective of the research project is to explore how can design capabilities (knowledge, skills and attitudes) represent a new policy competency and support public managers' way of working.

You have been introduced to the topic through the *workbook* you filled in the past week, and now we will proceed with a *generative session*, to deepen and dive into your first thoughts.

We call this a *Contextmapping* research/study.

Please note:

- During the session, you will be the expert on the topic, so there are no right or wrong answers.
- The goal is to explore your context together, so every information is fundamental.
- I ask you the permission to collect recording materials (pictures, audio and video) of the session.
- The information gathered during the session will be later processed (internally, in my faculty) and the outcomes of this research will inform the next phase of the project.

Taking part in the study:

I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions, and I can withdraw from the study at any time, without having to give a reason.

- ☐ Yes
- ☐ No

I have read and understood the study information, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.

- ☐ Yes
- ☐ No

During the data analysis, I would like my face to be:

- ☐ Recognisable
- ☐ Unrecognisable
- ☐ Not visible at all

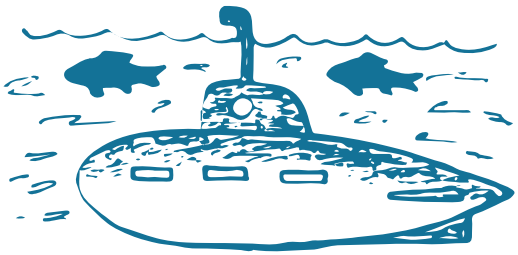
I allow the researcher to use the pictures and the audio/video materials:

- ☐ For personal studies only (no reports/no presentations)
- ☐ In the reports (not in presentations)
- ☐ Reports + presentations
- ☐ Not at all

I allow the researcher to mention my name in the study:

- ☐ Yes
- ☐ I would like him/her to use a nickname
- ☐ No

Appendix C: Sensitising booklet



This booklet belongs to.....

ME AND MY APPROACH TO WORK

Knowledge, skills & attitudes

DEAR PARTICIPANT,

I heartily thank you for taking part in my project.

I am conducting research on the theme “how to make Design Thinking a support tool for public decisions”.

This booklet contains various exercises that will make you think about the subject and introduce you to the workshop we will do together next week. The different tasks are divided by days, and it will take about 5 minutes to complete each one.

Feel free to use all the items you will find in the envelope, such as stickers, images and keywords. Remember that this booklet is yours and there are no right or wrong answers, the most important thing is your point of view.

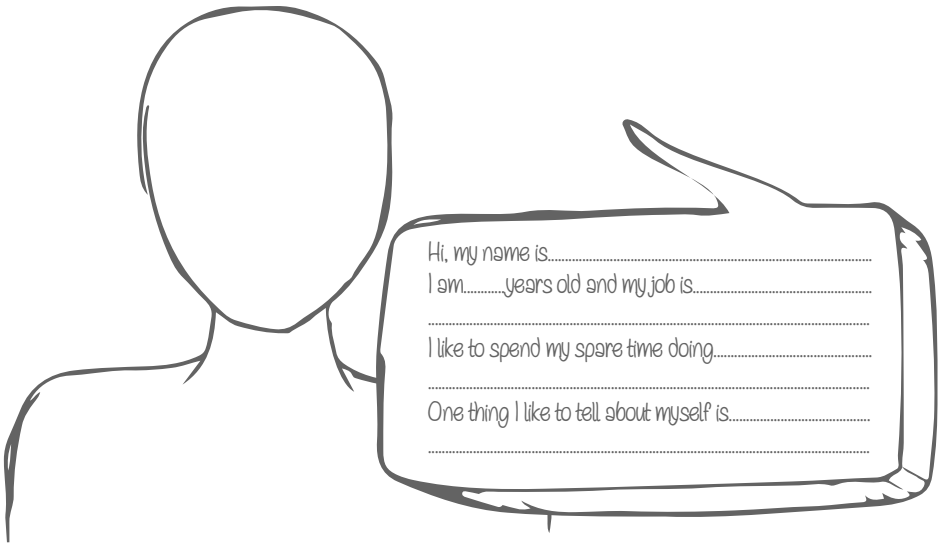
I kindly ask you to complete the booklet before our next meeting.

Good luck and have fun!

DAY 1: THIS IS ME...

Introduce yourself by filling out the comic and drawing your face.

Tip: Don't worry about the drawing style, just be creative!

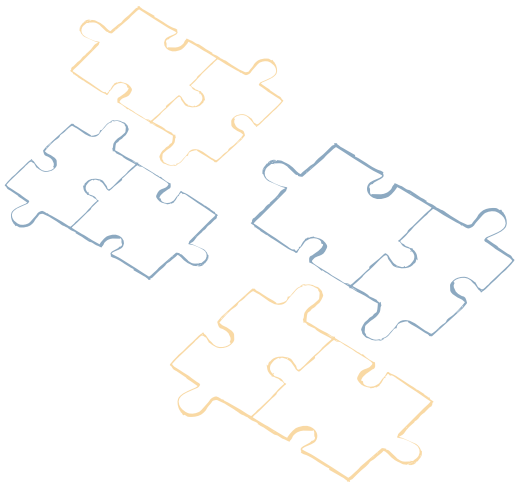


...AND THIS IS WHAT I HAVE TO SAY!

In your envelope, you will find a **piece of a puzzle**, write down your **motto** or the phrase that best represents you and your personality. It will come in handy during the workshop next week.

What makes me feel unbeatable:

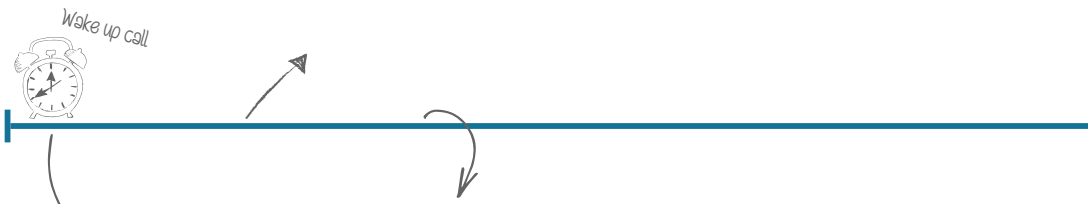
What I would like to learn to do better:



DAY 2: MY TYPICAL DAY

Tip: Use stickers, images and keywords

On this page, you will describe a typical day of your life.
Step 1: Explain the activities you perform every day on the timeline.
Step 2: Attach a sticker (and an image, if needed) for each activity.
Step 3: Describe the emotion you feel during that activity and why.



EXAMPLE

Step 1: I wake up, but I stay a while in bed.

Step 2: 

Step 3: I'm not going to get up early today!!

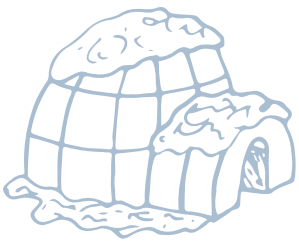
DAY 3: A NICE MEMORY AT WORK...

Describe a moment that you remember with particular pleasure **linked to a problem or a challenge that you have solved at work** (a personal or team success, a situation that you have resolved with dexterity and that has made you proud).

Why is it important to me?

...AND A LESS PLEASANT ONE

Here you have the space to describe **a challenge or problem that you failed to solve at work** (a moment of blockage, an issue that caused you anxiety and frustration).

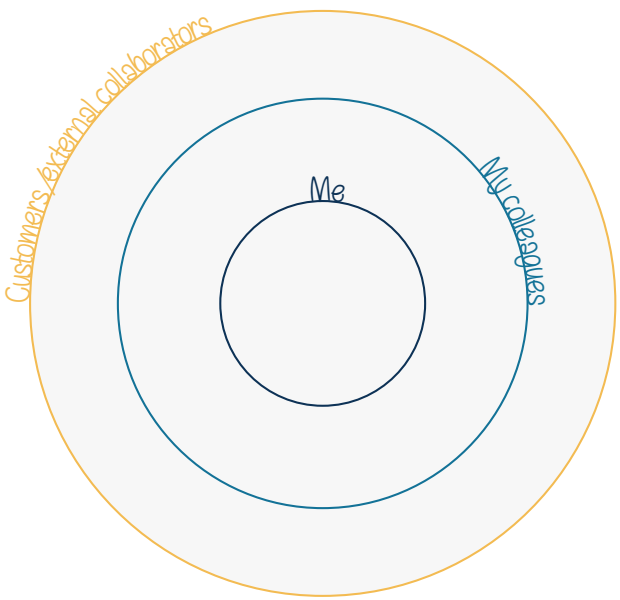


Why was it negative for me?

DAY 4: WHAT IS IMPORTANT TO ME

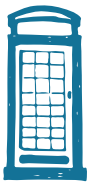
Illustrate your fundamental **values** to **approach a work project**. What are the "**secret weapons**" you use in relation to yourself, your colleagues and customers/external collaborators?

Tip: Use stickers, images and keywords

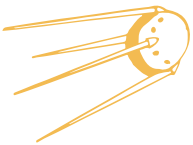


DAY 5: TO BIG RESPONSIBILITIES...

What advice would you give to your past self, before starting this work, to give him/her **tools to tackle today's problems**? And what would you recommend to someone who is going down the same road as you **to face tomorrow's challenges**?



To myself I would say...

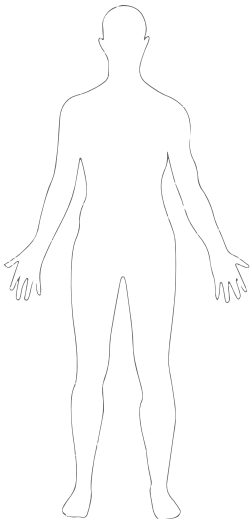


I would say to someone who is going to take the same path as me ...

...CORRESPOND BIG POWERS!

Suppose you could have a **superpower**, what would it be? On this page, you can draw yourself with the superpower you would like to have. After that, describe **why you want to have it**.

Tip: You can choose anything. Unleash your imagination!

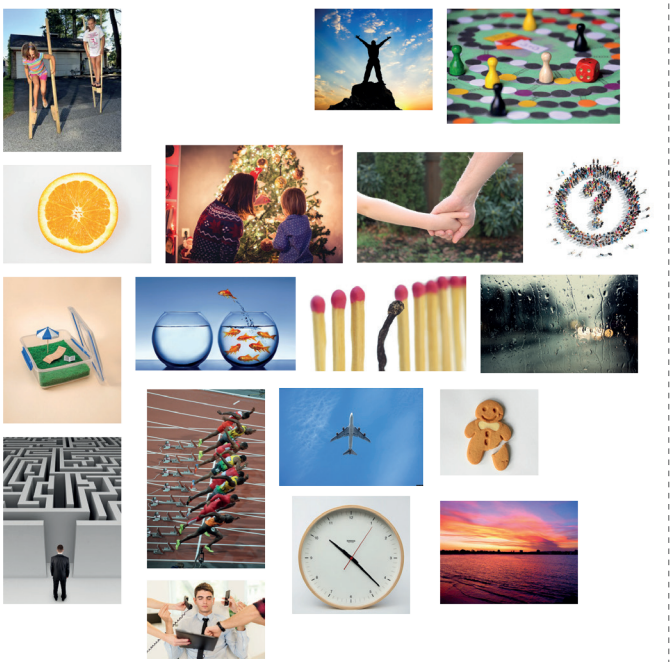


Description of my superpower:

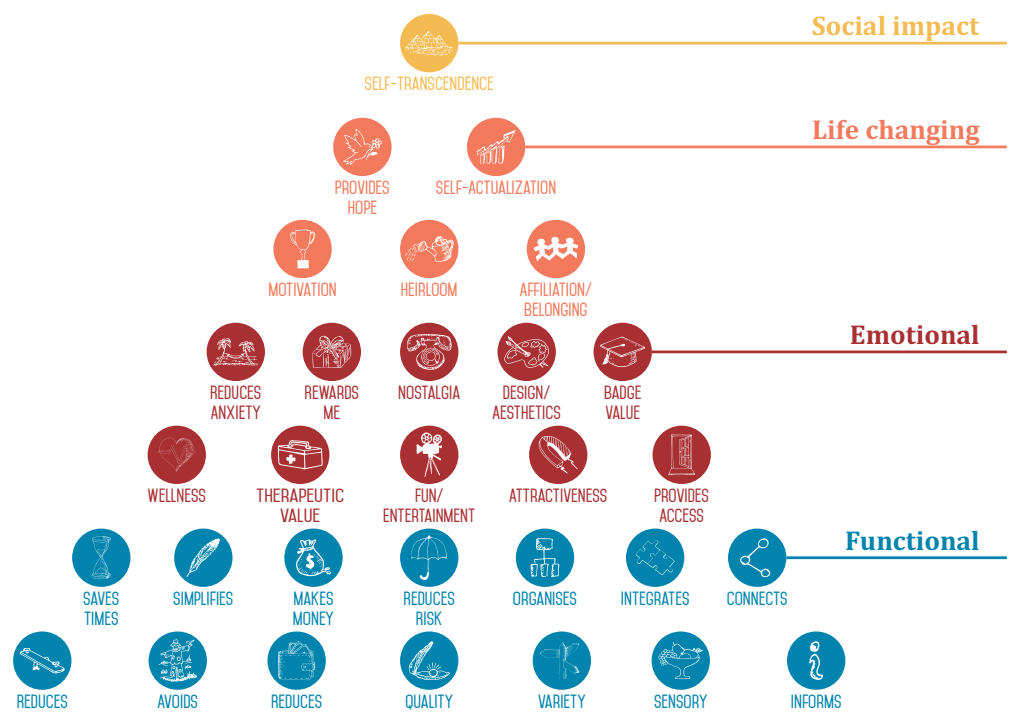
Why would I want to be able to do this:

Appendix D: Trigger set

Amore	Rituale
GRANDE	PARLARE
Partner	Indietro
IMPARARE	Avanti
Comunicare	CULTURA
SUPER!!	Pratica
STRESS	Energia
Insegnare	Confusione
Caso	USCIRE
NEGATIVO	Leggero
Rilassarsi	Sorpresa
Sano	Blocco



Appendix E: The elements of value pyramid



Appendix F: Reframing Behaviours Worksheet

REFRAMING BEHAVIOURS | From goals to actions

Reflect on six behaviors / attitudes that you would like to change or stop adopting, and on those that you consider fundamental or that you would like to develop in order to identify, approach and solve complex situations and projects at work in a more innovative way. Next, identify what actions could support you in implementing this transition

What behaviors / attitudes would I like to change? Think about what skills you think you don't have and behaviors attitudes that have often blocked or hindered you	**What behaviors / attitudes would I like to develop?** Reflect on behaviors / attitudes that have often been successful or that you would like to learn to adopt	**What do I want to learn/do to facilitate this transition?** Reflect on how you could learn or train this behaviour or attitude. What skills or attitudes can you connect to?