

MAKING CONNECTIONS

Exploring Value Co-creation in Service Design Projects

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Master thesis

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service design projects

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Abstract

Ford is facing new competitors and changes in their market. To stay relevant, they have to deal with collaboration to solve complex problems, new technologies that enable new value propositions and a shift from products to services. Service design seemed like a promising approach to deal with those challenges and to come up with new services in a multi-stakeholder context.

However, it was found that the service design process of the involved innovation team at Ford Research & Advanced Engineering has no clear structure and mainly focuses on gaining customer insights and coming up with a great value propositions for them. How value propositions could be delivered with and to multiple stakeholders to co-create value, while also capturing value from that for Ford, is not so much explored. Besides, it is not easy for the team to make the value of a new service explicit and clear for others. To be able to explore opportunities for co-creating value for multiple stakeholders with new services in the service design process, value co-creation building blocks and a value co-creation network are presented. In addition, an improved service design process model was developed for Ford, to serve as a more structured foundation for using the building blocks and network.

Through the use of the value co-creation building blocks and network the Ford team members are able to explore ideas for services in a multi-stakeholder context in practice. It gives room to multiple types of value, fitting with a multi-stakeholder context, and it balances value proposition, value co-creation and value capture from the exploratory phase onwards. Furthermore, the value co-creation network makes both the value proposition, value co-creation and value capture explicit. It thereby also provides a shared language and helps the team members to discuss the value that the new service concept co-creates and what Ford specifically could derive from that, to align with others.

Glossary

Terminology	Page number
Business model	28
From one organization's perspective a description of how an organization proposes, co-creates and captures value, including the offering, key resources and key processes. (Clauss, 2016; Johnson, Christensen & Kagermann, 2008; Vargo, Maglio & Akaka, 2008; Zott, Amit & Massa, 2011)	
Ecosystem / network	24
The word ecosystem is used to describe the dynamics of the relationships between all actors and resources in a certain field, including things like how they behave and collaborate (Hwang, 2014; Jackson, 2011). A network contains less details and can be described as 'a group or system of interconnected people or things' (Oxford University Press, 2020).	
Service design / service innovation	11. 14
Service design is the design discipline that considers the design of services as opposed to solely tangible products (Reason, Løvlie & Flu, 2015). In the case that an organization executes the complete development of a new service up until the actual service provision, the process goes beyond the design and also covers implementation. In that case the term service innovation is more suitable. (Sangiorgi, Prendiville, Jung & Yu, 2015).	
Stakeholders / actors	20
Stakeholders are in this report defined as all people or organizations that affect or are affected by a certain process or service (Friss Dam & Siang, 2019). This includes the user, supplier, providing organization, etc. In some cases, the word actors is used, which refers to the same definition.	
Value capture	27
How and what value is derived from the process of co-creating value for a specific stakeholder (Clauss, 2016; Vargo, Maglio, Akaka, 2008).	
Value co-creation	27
How value is created in a network of stakeholders by integrating value propositions (Clauss, 2016; Vargo, Maglio, Akaka, 2008).	
Value proposition	27
The total offering of one stakeholder to another (Clauss, 2016; Vargo, Maglio, Akaka, 2008).	

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1

INTRODUCTION

This first chapter introduces the context of this master thesis. First, it explores what challenges incumbent manufacturing companies like Ford have to deal with to stay relevant in their market. Then, a closer look is taken at service design as an approach to deal with those challenges by co-creating value for multiple stakeholders. This leads to the introduction of the research question and related sub questions.

Afterwards, the scope will be outlined and the chapter concludes with some insight in the process of this project and how its results are structured in this report.

1.1 Project introduction

Currently, incumbent organizations in several industries are facing a lot of developments that involve challenges and opportunities for their business. In the mobility industry, Ford Motor Company is one of those organizations that is trying to stay relevant in a market where new entrants and technological innovations are driving change (see figure 1). They are trying to answer the needs of their current and future users and simultaneously deal with the developments in the industry. The following three overarching factors influence the context in which Ford is operating and working on their approach towards innovation.

First of all, our society is confronted with several wicked, **complex problems**, such as crowded and polluted cities, in which Ford's cars also play a role. To deal with the challenges

those problems are posing, **collaboration between multiple stakeholders** is indispensable. It is impossible for one organization to have all the expertise, knowledge and skills to develop solutions to those challenges alone (Lusch, Vargo & Tanniru, 2010). For many organizations that used to manufacture products and sell those to customers, such as Ford, those complex collaborations might not come natural. Nevertheless, it can be seen that several organizations start interacting with other stakeholders to create value beyond the boundaries of their own firm and contribute to solving complex problems.

Secondly, technological developments play a role. **New technologies enable new value propositions**. In the field of infrastructure and transportation for example, emerging technologies are

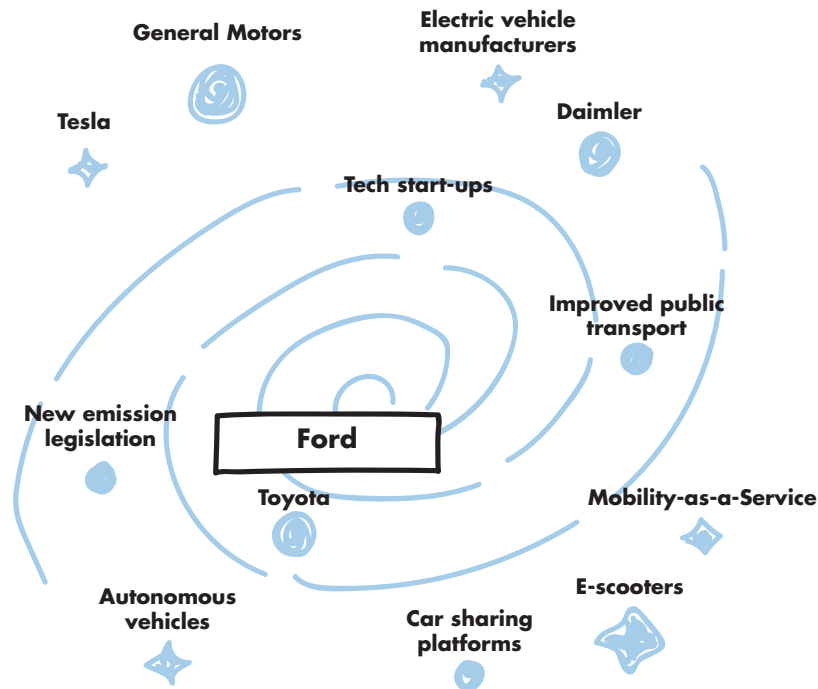


Figure 1. Ford is facing a lot of competition in its market

presenting opportunities to make cities smarter and potentially solve some of the challenges cities are currently facing. For instance smart traffic lights that can communicate directly with cars through vehicle-to-everything (V2X) communication and in that way improve the traffic flow.

Lastly, it can be seen that several organizations that used to manufacture and sell products are **shifting to the offering of services**. New entrants that provide better user experiences and earn money with subscription models cause disruption in existing markets. In mobility this can be seen for example in the success of Swapfiets (Reid, 2019). They are providing their customer with a working bike for a fixed amount of money per month, instead of selling the ownership of a bike. Providing a service also means interaction with a customer for a longer period of time. Increasing 'servitization' (Athyanta, 2017) is driving change and leads to new or innovated business models (Huikkola & Kohtamäki, 2018) that are more complex for organizations that used to sell products.

In conclusion, these three factors (see figure 2) form the context of this project.

- **Complex challenges:** this asks for collaboration of multiple stakeholders in the development of new solutions.
- **Technological developments:** this enables new value propositions.
- **Shift towards services:** this means interaction with a customer over a longer period of time and often a more complex value chain.

This is the context in which the innovation team within Ford Research and Advanced Engineering (R&A) in Aachen is working. This team's goal is to **inspire the Ford organization with new concepts** that show what the future could look like for Ford. Currently, they experience that their projects are becoming more complex

and they see opportunities for new services that involve multiple stakeholders. However, their current project approach does not fully address the potential and challenges of those complex multi-stakeholder projects related to new services. Therefore, they are looking for a structured approach to 'gather deep customer insights and translate them into creative business opportunities' (Project application form University Research Program Ford, page 2) for which Ford is collaborating with the Industrial Design Engineering faculty of TU Delft in a three year University Research Program.

To deal with the above mentioned challenges, **service design seems to be a promising approach** and has therefore received increased attention in the last couple of years. Both corporates and management consulting firms are investing heavily in (service) design as an approach to deal with today's challenges, which can be concluded from a range of acquisitions of service design agencies (Grimes, 2017). This also applies to Ford, recently announced their new design group D-Ford (Ford Motor Company, 2019). Service design has many forms and definitions, but in this report it is seen as the design discipline that considers the design of services as opposed to solely tangible products (Reason, Løvlie & Flu, 2015). New services are created or existing services are improved to offer a valuable and desirable experience for the user and to be efficient and effective for the involved organizations. It takes a holistic and integrated perspective on the user experience and other involved actors (Sleeswijk-Visser, 2013) and therefore it is a field that is equipped to deal with the earlier mentioned complex problems and technological developments.

However, it turns out that it remains challenging for Ford as well as for other traditional manufacturing organizations to truly adopt service design. **Organizations have difficulties with internalizing service design**

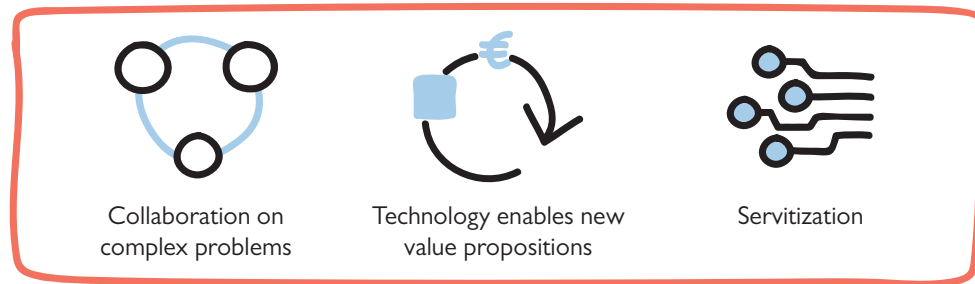


Figure 2. Three factors that form the context of this project

and service design agencies do not succeed fully in supporting them with the required transformation in doing so (Aricò, 2018). Results of a survey among service design agencies as part of six month global study show that service design's contribution is often mainly in the initial phases of a service innovation process, such as idea generation & customer insights, as opposed to a more transformational contribution in which service design influences the broader innovation process or changes the way an organization works (Sangiorgi, Prendiville, Jung & Yu, 2015). So, service design often does not deliver its more transformational promise to solve complex problems with services that are enabled by new technologies and provided in collaboration with multiple stakeholders.

When service design is meant to solve complex problems and be transformational, it also has impact on the organization. A new service might ask for a new business model or changes in the existing business model (Huikkola & Kohtamäki, 2018) and it therefore also relates to an organization's business objectives and strategy. From research into the contribution of service design to service innovation, it can be concluded that service design pays a lot of attention to the user (Sangiorgi et al., 2015). This also applies to the (service) design projects at Ford. The Ford innovation team started to apply design thinking with specific interest in service design to address the challenges and opportunities they experience based on complex, multi-stakeholder problems,

technological developments and servitization. In collaboration with the TU Delft several projects were undertaken. However, many projects until now focused on user insights and idea generation. **The organizational aspects, such as current capabilities and contribution to business objectives, are not so much in focus.** Currently, the team lacks the process and methods to **systematically develop these ideas further to new services that not only benefit the user, but are also valuable for the Ford organization and the other stakeholders involved.**

At the moment, when presenting their projects to managers, the team members are often confronted with the question 'What is in it for Ford?'; referring to expected monetary gains. This forces the team to develop a business case for the project and get focus on how and why the project is valuable for Ford. However, in that case this focus mainly consists of a **justification of the service design project and the monetary value it will bring.** It does not stimulate exploration of alternative opportunities to create even more valuable outcomes and it does not give room for other types of value that can be created and captured, that go beyond money or will lead to money in the long term instead of directly. Lastly, the focus is solely on Ford and there is **limited attention for co-creating value in a multi-stakeholder context.** So, Ford's current project approach lacks methods and tools to support exploration of business opportunities that go beyond monetary value and take multi-

stakeholder contexts into account.

In my observations of projects for other organizations, I also experienced that often only towards the end of the design process, attention is paid to developing a business case or business model that justifies the project and/or its monetary outcome for the organization. During the exploratory phases service design mostly focuses on the customer. Also, the service design tools that are currently used a lot, have limited focus on the organizational aspect of creating value for the organization in a network of stakeholders. Because of this, it is likely that more organizations struggle with exploring opportunities for new services that take a multi-stakeholder context into account and that create value for an organization.

This leads to the following research question:

How can opportunities for co-creating value for multiple stakeholders with new services be explored in the service design process?

To contribute to answering this research question, the theoretical background aims to first of all define what is meant by the different parts of the research question and to investigate what is already known about this in literature, so that this graduation project can build on that. This is done by answering the following sub-questions:

- *What does value and value (co-)creation mean?*
- *What is the role of value (co-)creation in service design?*
- *What is the role of value (co-)creation in an organization?*

To find out why the current services design processes do not sufficiently support the

exploration of opportunities for co-creating value for multiple stakeholders with new services, the empirical research aims to answer the following sub-questions:

- *How is the service design process currently executed and experienced at Ford and what is the role of value co-creation?*
- *How does a design agency like VanBerlo deal with value co-creation in the service design process?*
- *What tools and methods are used for exploring opportunities for (co-)creating value with new services and what are their advantages and disadvantages?*
- *How suitable are those in a multi-stakeholder context taking into account multiple types of value?*

This project specifically focuses on answering the research question for the involved innovation team at Ford. However, the outcomes might be relevant for more organizations that are also dealing with complex problems that ask for collaboration, technological developments and servitization.

To broaden my perspective and to increase the relevance of the research in other contexts than Ford, I decided to not only include my own experience and the insights from Ford, but also include the perspective of a design agency with service design expertise. The involved design agency is VanBerlo, a Dutch design agency with clients in a great variety of sectors. VanBerlo agency covers a broad range of expertise, offering services ranging from innovation consulting and user research to interaction design and technology integration. Next to participating in the research, one of their employees was on board of this project to provide feedback and bring experience with service design projects. This enabled me to broaden my view on service design with their examples from practice, to test my thoughts and ideas with professional service design experts and to get their view on service design processes.

1.2 Project scope



The project scope is determined by the following factors:

Service design as part of a larger service innovation process in a large organization

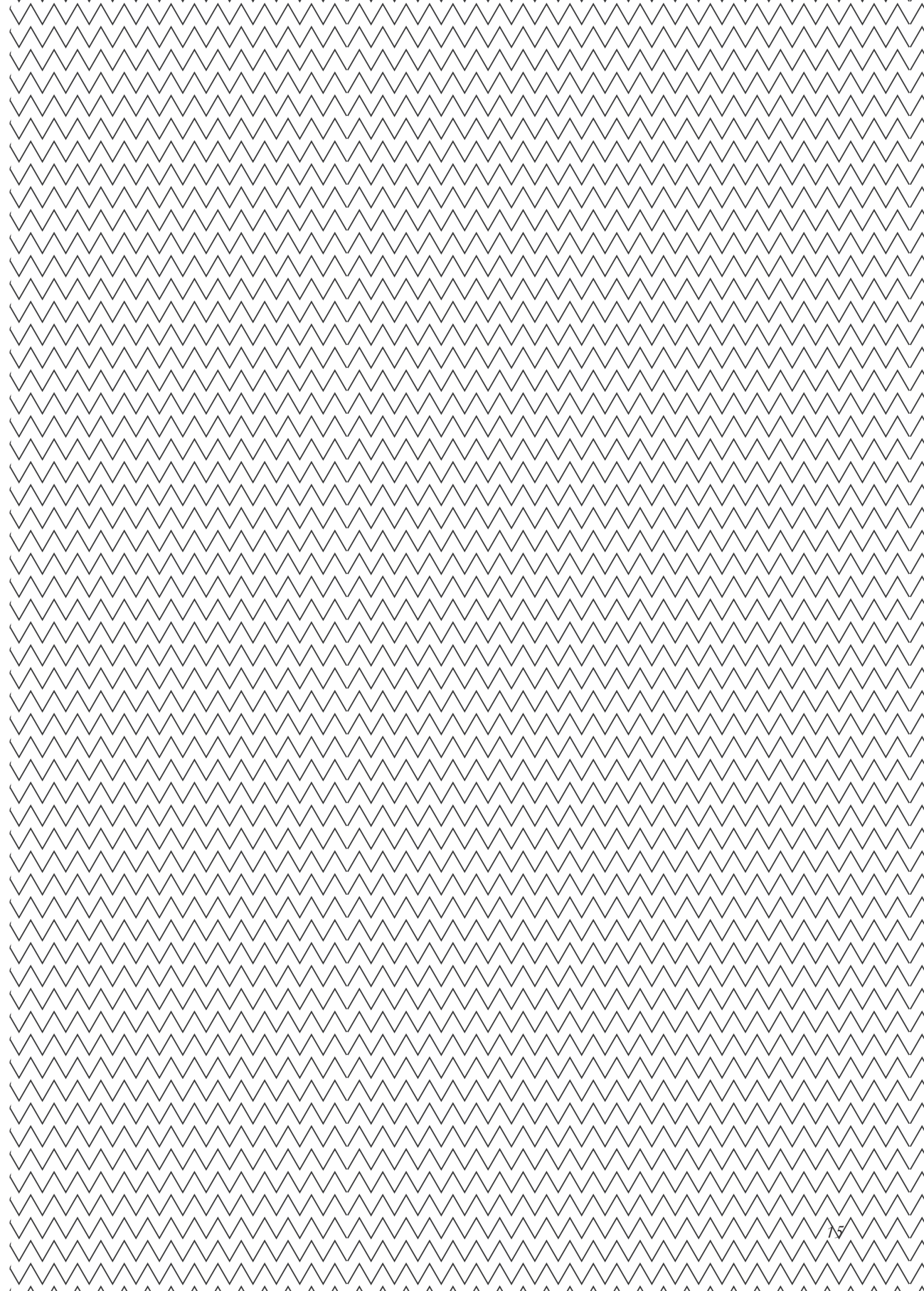
When an organization executes the complete development of a new service up until the actual service provision, the process goes **beyond the design** and also covers implementation. In that case the term service innovation is more suitable than service design (Sangiorgi, Prendiville, Jung & Yu, 2015). The context of this project is the broader service innovation process of a large organization, but the focus of the project is on the service design process. Approaches for other stages of the service innovation process, such as detailed development and execution or the phase of forming an alliance before starting a project, can serve as inspiration, but are not included.

Case study at Ford

This project aims to link theoretical insights and ideas with practice. More specifically, it tries to answer the question: ‘but how would it work in practice?’. Therefore, deep understanding of the practice is important and the project considers the current state of service innovation processes at Ford. The result of the project is first of all **specifically meant for Ford**. Comparing more large organizations was not within the scope of this project. However, to broaden the perspective to other situations, interviews and discussion with service design experts at VanBerlo were held, and many insights and results will also be applicable for other organizations.

Value-related processes from a designers’ perspective

During this project, I was aware of my perspective as designer on the processes that are related to creating value. I have a **background in design**, which **influences my view** on the literature and qualitative data and interpretation of it. A business student or marketer might have come up with different results. During the literature review, some perspectives of other fields are included, but this project does focus on this challenge specifically from a designers’ perspective.



1.3 Project process & structure

Having introduced the project topic, the involved parties and the scope, this chapter closes with how this project was approached and how this report describes the outcomes.

Throughout the whole project I tried to balance the perspectives from theory and practice.

Based on my strength and favorite thing as designer – making connections – I combined insights from both sources to come up with relevant results. For the practical part I collaborated with Ford and VanBerlo to gather data from the field, complement my own knowledge and to combine the perspective of a legacy organization and an experienced design agency.

To answer the research question, this project roughly consisted of two parts with a synthesizing phase in between and ending with a phase of drawing conclusions and discussing the results, which is also visualized in figure 3. The first part of the process consisted of reviewing literature, getting to know Ford by observations and discussions and collecting data through ten semi-structured interviews. Through analyzing all data the most important insights on the problems with the current situation came forward. The second part consisted of doing research through iteratively designing and developing a tool which was tested and adapted along the way. The aim of this part was to translate the insights from the literature review and empirical research to a tool that is useful in practice. Throughout both parts, I continuously went back and forth between theory and practice for new perspectives and validation.

At times, I made so many connections with

overlapping topics that the amount of insights was overwhelming. However, continuing the dialogue with supervisors and experts, taking time for incubation and reflection and iteratively trying to make sense of all things collected, enabled me to unravel the core.

This report described and arguments the results of my graduation project, starting off with the theoretical background and my perspective on it in chapter 2. Subsequently, the methods chosen for the first research cycle, the empirical research, are described in chapter 3. This leads to chapter 4 in which all insights of the empirical research are synthesized. These insights provided the input for the second cycle, the tool development, which starts with chapter 5 that describes the approach and process of the tool development. In chapter 6, the developed tool is described. Lastly, chapter 7 presents the discussion.

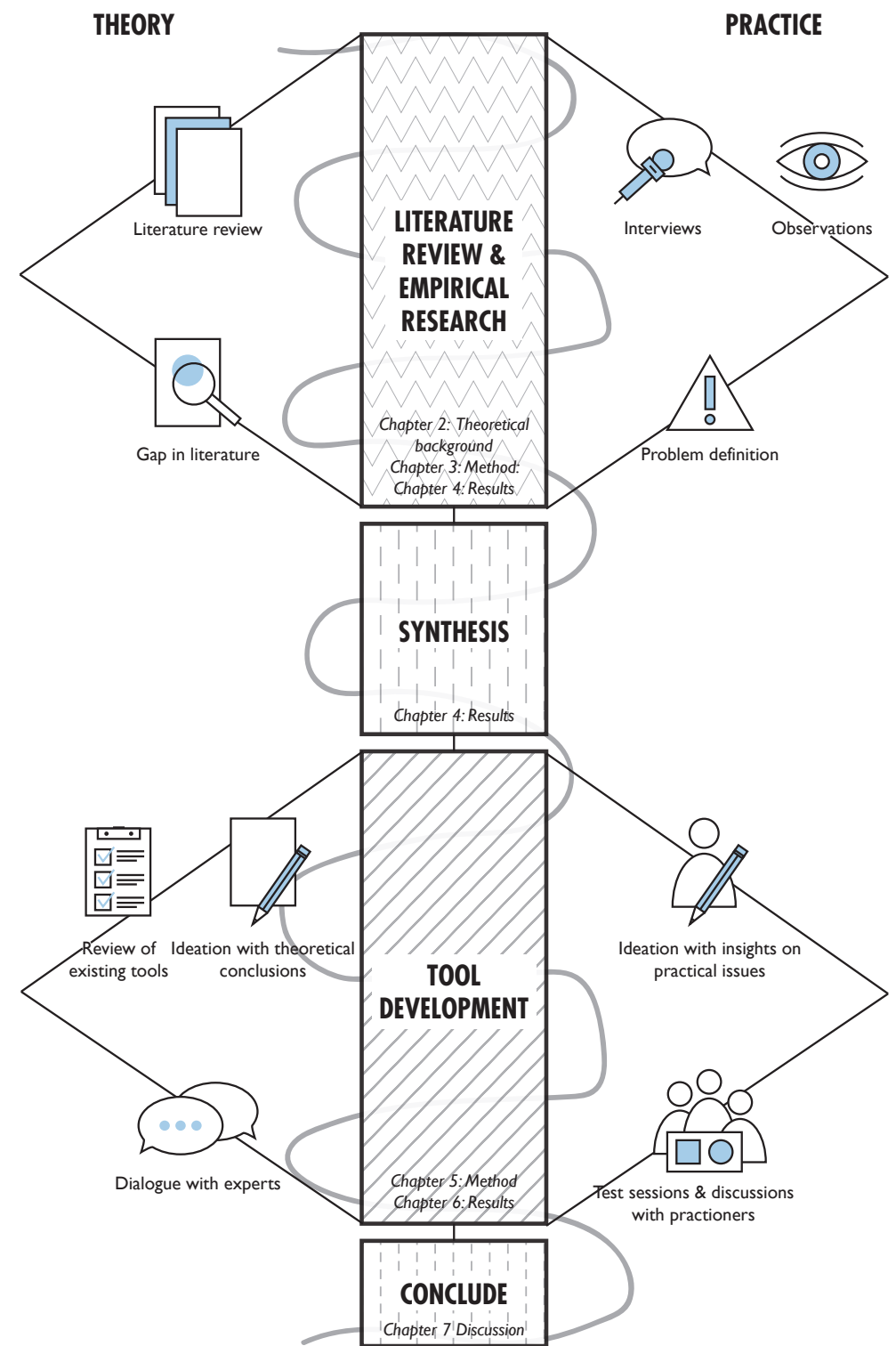


Figure 3. The process of this graduation project.



2

THEORETICAL BACKGROUND

To make sure this project builds on what is already known, relevant literature that relates to the research question and sub-questions was reviewed. Answering those sub-questions lead to conclusions that could be used as basis and arguments in the tool development phase.

2.1 Value & value (co-)creation

The research question mentions ‘opportunities for co-creating *value*’. In order to answer the research question, it is important to first define what value means in the context of this project. The word is used often, but for different meanings in different contexts. This report does not strive for one overarching definition of value, rather the differences are acknowledged and one meaning is chosen that fits the project context best.

In the dictionary of Oxford University Press ‘value’ is defined as

‘The regard that something is held to deserve; the importance, worth, or usefulness of something’ (Oxford University Press, 2019).

Examples of these are ‘his help was of great value’ or ‘this material covers a total value of €2000’. Interestingly, the plural form ‘values’ is defined as ‘Principles or standards of behavior; one’s judgement of what is important in life’, as in ‘they internalize their parents’ rules and values’ (Oxford University Press, 2019). Value refers to the value of something and values refers to someone’s view on what is important in life (Den Ouden, 2012). Although in innovation, both definitions play a role (Den Ouden, 2012), in this project the first definition of value is used, primarily to explore and determine how a project is of value for its stakeholders. Stakeholders are in this report defined as all people or organizations that affect or are affected by a certain process or service (Friss Dam & Siang, 2019). This includes the user, supplier, providing organization, etc. In some cases, the word actors is used, which refers to the same definition.

The value of something can either be objective, when value is a property (gold has more value than silver), or subjective, when it is not part of the object, but **related to something** such as how someone feels towards it (a piece of jewelry is of value because of the family history) (Den Ouden, 2012). Even with this general notion, value can still be viewed from **different perspectives** (such as the economic, psychological, sociological and ecological perspective) and from **different levels** such as the user, the organization, the ecosystem and society (Den Ouden, 2012). For commercial organizations, the economic perspective often plays the biggest role. However, value from other perspectives, such as sustainability in the ecological perspective also can play a role. Especially in the context of this project where problems are complex and often involve multiple stakeholders, other perspectives and levels are also very relevant.

In conversations around value in practice, other words than value might be used, such as benefits or goals. The common factor in these words is that they all refer to an outcome or result that a person or organization can strive to achieve. However, it is important to notice that value relates to a person or organization’s evaluation of an outcome. The two factors that play a role here are the relation to a person or organization, making it context-dependent, and the relation to an outcome, meaning that it can only be determined afterwards and it can be unexpected as well. The term ‘project benefits’ is such an example of a word that can be used in discussions around value and it describes ‘the flows of value that arise from a project’ (Zwikael & Smyrk, 2012). This definition comes from management literature and it is important to realize that they refer to the value for the organization that undertakes the project.

To illustrate this with an example, think of an e-bike sharing platform that a certain organization launches in the market. The service can have value for the user, for example a business man, because it provides a hassle free way of transportation from the train station to an appointment in town. When the service is received positively, it can have a positive effect on the brand reputation of the launching organization, which is an example of value for this organization, that can only be evaluated afterwards. Also, the total system of the platform being used, can also have value for society, when more people use a less polluting e-bike instead of a regular car. Lastly, after launch there can also be unexpected value. For example if the e-bike becomes very popular because using it is seen as boosting the user’s image, it can cause an increase of users that also want to have this image boost. This is something that might not have been foreseen or predicted by the organization.

Conversations around value often happen around the process of creating value, which is also part of the research question. Therefore, the next section describes the perspective this project takes on creating value.

Value creation

While still remaining open to different perspectives and levels of value, creating value can happen in different ways. In this report, the starting point of value creation is the perspective of an organization. Within an organization, several lenses of value creation can be adopted (see figure 4), such as the holistic organizational level (for example, how the total organizations creates value for customers and society) or a team level (for example, how a team creates value for the organization). In this report, value creation is considered at the **project level**, looking at how certain projects and project outcomes could create value for the organization and other involved stakeholders. This report specifically addresses the search for new

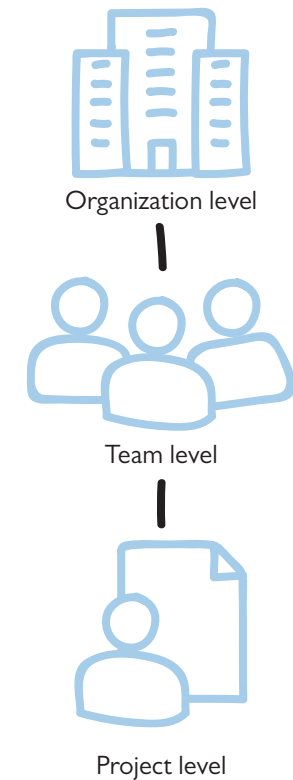


Figure 4. Value co-creation at different levels.

ways to create value, so it looks at innovation projects undertaken by people or teams in an organization.

When looking at innovation projects, value is often linked to the success of a project (Laursen and Svejvig, 2016); the value that a project creates is seen as the benefits that can be derived from the outcome. This in contrast to the traditional focus on delivering outputs, such as products, which do not per definition lead to the creation of value (Laursen and Svejvig, 2016). The assessment of the value a project creates depends on the interpretation of the involved stakeholders (Martinsuo, Klakegg, & Van Marrewijk, 2017). The different stakeholders in the network around a project, such as investors, the organization, partners or customers might have a different view on the value that a project creates and the value they want to derive. This is in line with what is described above about value: it is relative to a specific person or organization.

2.2 Value co-creation in service design

Value co-creation

The creation of value can also be seen as a joint process (Prahalad and Ramaswamy, 2004). The notion of creating value in a network of multiple stakeholders has its roots in value co-creation theory, which follows the service-dominant logic (SDL) (Vargo, Maglio & Akaka, 2008). According to SDL, **value is always co-created and derived by the participation of, and determined by, the beneficiary** (Vargo and Lusch, 2008). The value co-creation takes place by **interactions among providers and beneficiaries through the integration of resources and application of competences** (Vargo et al., 2008, p. 146).

This notion of interaction among stakeholders to jointly create value is very relevant for this project, because of its focus on multi-stakeholder situations. Table 1 describes the differences between service-dominant logic and its opposite goods-dominant logic.

Service-dominant logic and servitization

For organizations that used to manufacture and sell products and want to move towards providing services, service-dominant logic can serve as a mindset to do so. It considers a service system as **an arrangement of resources** (including people, technology, information, etc.) **connected to other systems by value propositions** (Spohrer, Maglio, Bailey, & Gurhl, 2007; Spohrer, Vargo, Caswell, & Maglio, 2008).

Therefore, collaboration is important in value co-creation to establish a balanced system with mutually beneficial and reciprocal relationships (Vargo et al., 2008). This emphasizes the multi-stakeholder nature of services and the necessary connections that need to be established in moving toward providing those services.

In this logic, according to Vargo et al. (2008), 'a service system's function is to make use of its own resources and the resources of others to improve its circumstance and that of others'. They co-create value to survive. However, this **value is highly contextual and experiential** (Vargo, Akaka, & Vaughan, 2017). This stresses the importance of value co-creation when designing service, but also awareness about the subjective nature of value.

Although these statements provide insight in the logic and awareness an organization should have to move from selling products to providing services, it does **not provide concrete ways on how to achieve value co-creation**. In other words, how does value co-creation in service systems take place in practice and how do you design for it? The next section takes a closer look at service design to gather insight in how services are often designed in practice. The section thereafter takes a closer look at business models, because they are often used as a means to explain how an organization creates value in practice.

Table 1: The difference between two perspectives on value according to Vargo et al. (2008).

Goods-dominant logic	Service-dominant logic
Producers and consumers are distinct. A firm's production process creates value for consumers in the form of a good that is exchanged for money (or other goods).	Firm and customer co-create value: Firm applying their knowledge and skills in the production and branding of the good, and customers applying their knowledge and skills in the use of it in the context of their own lives.
Value is measured by this exchange transaction.	Value is co-created by this reciprocal and mutually beneficial relationship.
Value-in-exchange	Value-in-use

Having defined value and value (co-)creation, the current sub chapter investigates its role in service design. To answer this question, it is important to first understand the discipline of service design and the characteristics of a service design process. This also helps us to understand why service design seems like a promising approach to deal with the complexity of today's societal problems, technological developments and shift from manufacturing and selling products to providing services. On top of that, service design is placed into the broader picture of the innovation process of an organization.

Service design is the design discipline that considers the design of services as opposed to solely tangible products (Reason, Løvlie & Flu, 2015).

When designing services, a few characteristics of services should be taken into account, that distinguish service design practice from designing products.

- Instead of ownership, services provide assistance or the **right to use** (and therefore access to) technical or human capacities and resources (Gadrey, 2000).
- Services produce value through processing operations carried out by a **providing organization** to a **requesting customer** (Gadrey, 2000).
- Services offer an **user experience over time** (Sleeswijk Visser, 2013).
- Services are complex systems with often **multiple actors** (Sleeswijk Visser, 2013).

Service design as a discipline takes a **holistic perspective** on these characteristics, when

designing new or improving services. Service-dominant logic provides a range of insights about value (co-)creation with services, of which a few are relevant for service design, because they can influence how a service is designed. First of all, service design creates the environment and conditions for a **valuable experience** of the consumer. However, the perception of the value differs per actor and value can only be determined by the beneficiary (Vargo et al., 2017). This is in line with what was mentioned before: **different stakeholders can have a different perspective on the (co-)created value**. When designing a service, a designer should therefore take into account that it can never fully be predicted what value other actors derive from that service. Unexpected value co-creation may happen or new value might be created over time. Lastly, **value is co-created in interaction**, a consumer is one of the co-creators of the value co-creation process (Vargo and Lush, 2008). This also means that production and consumption cannot be separated (Zeithaml, Parasuraman & Berry, 1985). Taking this mindset and view has consequences for the relation an organization aims to establish with its customer by means of the service they provide. A customer should in that case not only be seen as an individual that needs to be helped by solving his/her problems and fulfilling his/her needs, but as a co-productive stakeholder that also has something to offer, such as the competences he/she applies in co-producing the services.

Service design process

There is no defined process for designing a service. General characteristics of design processes and design thinking, such as the iterative nature and focus on people's needs (Brown, 2008) apply to service design as well. However, in this report the following phases that come often back, possibly with different names,

Distinguishing ecosystem and network

As said, value co-creation with services often takes place in a complex system with multiple actors (Sleeswijk Visser, 2013). Sometimes the term ecosystem is used in this context. The word ecosystem is taken from biology and used to describe the dynamics of the relationships between all actors and resources in a certain field, including things like how they behave and collaborate (Hwang, 2014; Jackson, 2011). In a biological system, the ecosystem 'has certain functional characteristics that specifically regulate change or maintain the stability of a desired equilibrium state' (Jackson, 2011, p.1). Applying this to the context of innovation, this can be seen as a certain balance in an existing field that should be maintained. Based on that, an ecosystem is not something that one organization can establish and benefit from on its own. Something that an organization can more actively create is a network, which contains less details and can be described as 'a group or system of interconnected people or things' (Oxford University Press, 2020).

in the service design process are distinguished. Those phases are based on the design process of design agency VanBerlo, see figure 5, and the three phases of design thinking as described by Brown (2008): Inspiration, Ideation and Implementation.

- **Research & Analysis** (for example, gathering customer insights with generative design research methods)
- **Synthesis** (for example, defining the problem that customers experience with the existing service)

- **Ideation** (for example, using brainstorm techniques to come up with ideas for improving customer relationships)
- **Prototyping** (for example, making an experiential prototype of an app)
- **Testing** (for example, inviting customers to test the experiential prototype)

When the service is developed further, the following phases is often added:

- **Implementation**

In a six month study Sangiori et al. (2015) researched the contribution of service design to service innovation and New Service Development (NSD) and its role within these kinds of innovation projects. Service innovation also looks at the development of new services, but more from an innovation management perspective as opposed to a design perspective. New Service Development is a field that emerged with the increasing attention of organizations towards customer experiences and services, to take a closer look at the specific differences of development of these experiential services with New Product Development (NPD) (Zomerdijk & Voss, 2011). Sometimes, service design is seen as a phase within NSD, but service design can also be seen as a broader practice. The outcomes of service design's contribution in these fields have been summarized in the following three typologies: "Service Design as a skilled contribution

to address a specific need, Service Design as a people centered, creative and systematic process and Service Design as a collaborative and people centered mindset and approach" (Sangiorgi et al., 2015). This can be seen as ranging from a more practical role towards a more transformative role, in which new value propositions are created that deal with complex problems and collaboration and that have effects beyond the individual project. The study also concluded that when service design was mostly a skilled contribution, the main contribution was in the **initial phases** of NSD, performing activities as customer research. When service design is used because of its mindset and approach, to deliver its transformative promise, it has a broader contribution and also plays a role in NSD phases that focus on value creation and organizational aspects like business objectives and strategy.

▶ VANBERLO PROCESS

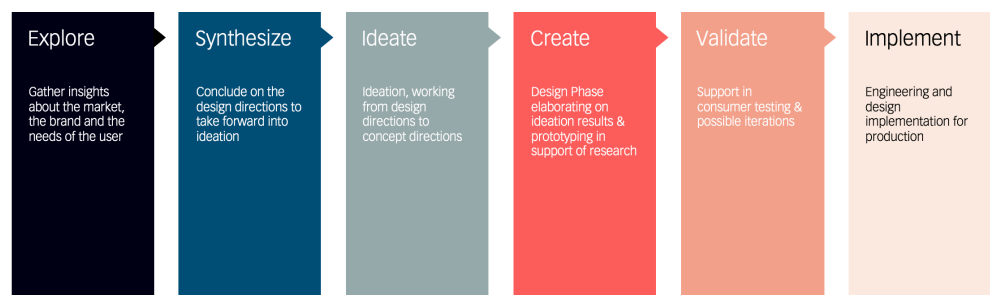


Figure 5: Design process VanBerlo

2.3 A business model to describe value (co-) creation in an organization

In an organization, a business model is often used to describe how the organization creates value for its customers. Therefore, a closer look is taken to what is meant with a business model.

There is no agreement about a common definition of a business model. However, Zott, Amit and Massa (2011) found a few common themes among scholars of business models. One of these was that “business models emphasize a system-level, holistic approach to explaining how firms ‘do business’” (p. 1020). A description of how a firm does business seems to be the common factor in definitions. Johnson, Christensen & Kagermann (2008) define that a business model consists of four elements that together create and deliver value: “the customer value proposition, profit formula, key resources, and key processes” (p. 60-61). This leads to the following definition:

[Business model]:
From one organization’s perspective a representation/ description of how an organization does business, consisting of the customer value proposition, profit formula, key resources, and key processes.
(Zott et al., 2011; Johnson et al., 2008)

However, business models can be described and designed from multiple levels, such as the individual, organizational or societal level (Lepak, Smith & Taylor, 2007). This graduation project focuses on innovation projects around the design of services and the co-creation of value in a multi-stakeholder context. Therefore, business models are looked at from the **level of a project** around a to be developed service. Despite the fact that most project level business models are derived top-down from the organizational business model, project level business models can also affect the organizational business model bottom-up (Mutka & Aaltonen, 2013). This means that even though the focus is on the

business model at the project level, that business model can still also affect the organizational business model.

The business model of a project is often confused with the business case, which is often used in organizations as a tool to judge the value a project would bring. A business case is defined as the following.

[Business case]:
“A justification for a proposed project or undertaking on the basis of its expected commercial benefit.”
(Oxford University Press, 2019)

So for example, the business model of Swapfiets (Swapfiets, 2019) consists of its customer value proposition ‘always a working bike’, their subscription model for gaining profit and their bikes, cars and staff that are involved in the key processes of distributing, swapping and repairing bikes. A project at Swapfiets could for example be, that are going to introduce children bikes as well. The business case for that project would then describe what Swapfiets would gain from that project and why it would be worth pursuing.

In conclusion, the goal of a **business model** is to **describe how an organization does business**, either on a project level or organizational level. On the contrary, the goal of a **business case** is not purely descriptive, but it is also meant to **justify a certain project**. This project focuses mainly on the role of the business aspect during the service design process, specifically during the exploratory phase. In that case, focusing on the business model is most relevant. The business case is only relevant towards the phase of evaluation of the value a project brings, which is in focus to a lesser extent.

Business models and value

Another theme that Zott et al. (2011) identified described that **business models seek to explain both how value is created and captured**. In line with Zott et al. (2011), Clauss (2016) described **the three main dimensions that form a configuration of a business model, when integrated**. Those are:

- **“Value creation:** defines how and by what means firms create value along the value chain using the resources and capabilities of intra and interorganizational processes.
- **Value proposition:** contains a portfolio of solutions for customers and how they are offered
- **Value capture:** defines how value propositions are converted into revenues. It defines how firms gain revenues that cover cost and achieve profits that ensure sustainable performance” (Clauss, 2016, p. 387)

However, the term value creation that Clauss uses as one of the main dimensions of the configuration of a business model is not in line with SDL, because it does see a customer as co-productive and it is also **not applicable for creating value with and for stakeholders** in a network. Therefore, the term **value co-creation** is preferred in this report. Also, from an economic perspective value capture is seen as an organization’s ability to generate

profit from its transactions, which also can be seen from Clauss’ description of converting the value proposition into revenue. However, in this report the perspective on value goes beyond economic value and therefore value capture also goes **beyond economic value**. **Value capture** still describes **how an organization derives value from a project or services** and in that sense there could also be referred to ‘value derivation’, instead of the more to money and exchange relations-tilted term ‘value capture’. However, because of its clarity value capture is still used in this report, but with a broader definition. In conclusion, this report uses the following definitions (Clauss, 2016; Vargo et al., 2008):

- **Value co-creation:** How value is created in a network of stakeholders by integrating value propositions
- **Value proposition:** The total offering of one stakeholder to another
- **Value capture:** How and what value is derived from the process of co-creating value for a specific stakeholder.

Figure 6 gives an example of the three main dimensions of a business model applied to and from the perspective of Swapfiets. These dimensions would differ for different stakeholders involved in the same system, such as customers and suppliers.

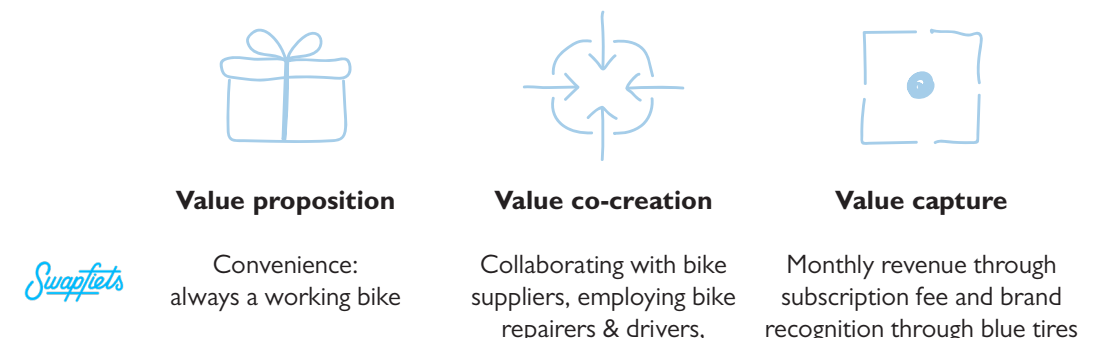


Figure 6: The three main dimensions of a business model, applied to the example of Swapfiets (Swapfiets, n.d.)

Based on these insights, the definition of a business model that is used in this report is described as follows:

[Business model]:

From one organization's perspective a description of how an organization proposes, co-creates and captures value, including the offering, key resources and key processes.

(Clauss, 2016; Johnson et al., 2008; Vargo et al., 2008; Zott et al., 2011)

While using the term value it is also important to distinguish between the process towards the (co-)creation of value and actual realization and capture of value (Pitelis, 2009). During the design and development process value (co-)creation is planned for and the actual realization takes place during execution in the real market and is very context dependent. This graduation project focuses on the design phase and therefore focuses on planning for value creation and can only make an expectation of what value an organization can derive from that. The realized value can only be determined after implementation and during execution.

Besides, the value co-created and the value captured usually don't coincide (Pitelis, 2009); two stakeholders might co-create value that is only captured by one of them, or even by a third stakeholder. It is important to realize that an organization can capture more, the same or less value than it creates or co-creates (Pitelis, 2009). This can influence a stakeholder's role in a value co-creation network, making it more passive or active. Furthermore, the total value that is captured by the stakeholders, can also be the same, more or less than they co-create in the network. This means that they either take from

or positively contribute to the ecosystem they are part of; often the ecosystem of a society.

Narrow view on value in business models

As mentioned before, Johnson, Christensen and Kagermann (2008) describe what they see as the four elements of a successful business model. A key aspect is creating an attractive value proposition to an organization's targeted customer segment, which can be in line with service-dominant logic, in which value propositions are connected in a service system. They also recognize the need to integrate resources and processes to be able to create this value. However, regarding value capture, the focus is completely on the profit formula, as opposed to a broader view of deriving other value than revenue.

Den Ouden & Valkenburg (2011) also identified a lack of business models that address intangible value, so other types of value than for example money, explicitly (see figure 7). They expressed the need to broaden the scope of value in business models specifically for social or networked innovation. They described that in the case of having participating profit and non-profit organizations, it is important for them to check "what value it will deliver them in terms that are relevant to them" (Ouden & Valkenburg, 2011, p.303). Those organizations define value differently: "next to economical value, other values, e.g. knowledge or reputation, are important in the decision to commit to the innovation." Both tangible and intangible

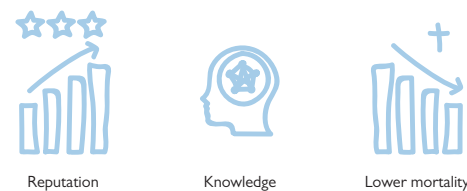


Figure 7. Three examples of intangible value as addressed by Ouden & Valkenburg (2011)

benefits for both the short and longer term play a role. In the case of service innovation, there are often also multiple stakeholders involved for who different values could be important. So, this need for a broader scope of value in business models is also relevant for service innovation.

Integrating views on value in the service design process

As mentioned earlier, different stakeholders have a different interpretation of the value that a project creates. When those stakeholders are involved in co-creating and capturing this project value, which is often the case in complex service design projects, those views should be taken into account from the front end of the project (Martinsuo, Klakegg, & Van Marrewijk, 2017). This argues for earlier discussion, exploration and

integration of the business model aspects value co-creation, value proposition and value capture in the service design process than towards the end phase. Furthermore, early exploration of the value co-creation, value proposition and value capture of stakeholders individually and in total of the value co-creation network, makes already earlier in the process explicit if in total, the value co-creation network co-creates or captures more value, or if this is in balance. This is very relevant if the value co-creation network for example wants to make sure they don't capture value in an unsustainable way from our planet, without giving back; so using natural resources and producing a lot of CO2 without co-creating positive value for our planet that compensates this.

2.4 The cross-section of design and business

When service design extends its focus from the user to the business model and organizational aspects such as business objectives, this has consequences for the discipline and its specific characteristics. Not only design skills are needed but sufficient knowledge about organizations and business models is desirable. In that case, **service design starts to operate on the cross-section of business and design.** To position service design on this cross-section and to find out if contributions to answering the research question could be found outside service design practice, a closer look was taken to two other disciplines that touch service design.

Business design

Recently, the term business design got more attention. Service design agencies started to recognize their lacking focus on the business side and the need for increased attention to organizational aspects; in 2015 almost half of them included 'business design' in their offering (Sangiorgi et al., 2015), being more relevant to business offering and language. For some people, business design is a reaction to the increased popularity of design thinking and service design

(see figure 8). Design thinking and service design enable organizations to design and develop more desirable and human-centered products and services. However, designers are not necessarily equipped to also take the long-term business viability of new products and services into account. Here, business design comes in, combining design with the business aspect. The following definitions from agencies that offer business design service, give good insight in what business design entails:

“Business designers take juicy, creative, human-centered innovation and make it succeed out there in the real world.

We use strategy, analysis, and financial modeling as generative design tools, and help organizations turn their biggest, wildest ideas into businesses with long-term viability.”

- IDEO

“Build products and services customers love supported by a profitable business model.” – Board of Innovation

“Design products, services and business models that create customer value – strategic value – business value.”

– Board of Innovation

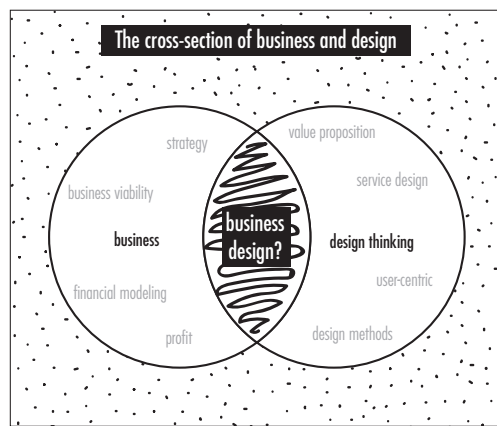


Figure 8. Business design

Business model innovation

Another term that relates to service design and business design is 'Business model innovation'. The context of this project is innovating services from a service design perspective. In service design practice, a customer need or problem is often taken as starting point for innovation. Besides, in very tech-driven companies such as Ford, technology is often taken as starting point for innovation. Next to these starting points, a business model can also be the starting point of innovation, which is called 'Business model innovation'. In the case of business model innovation not a product of process is the subject of innovation, but the interplay of the value proposition, value creation and value capture and the changes in those three dimensions (Baden-Fuller and Haefliger, 2013; Clauss, 2016).

The following definition of the consultancy firm Boston Consultancy Group helps to better understand Business Model Innovation:

“Business model innovation is the art of enhancing advantage and value creation by making simultaneous—and mutually supportive—changes both to an organization’s value proposition to customers and to its underlying operating model.

At the value proposition level, these changes can address the choice of target segment, product or service offering, and revenue model. At the operating model level, the focus is on how to drive profitability, competitive advantage, and value creation through these decisions on how to deliver the value proposition:

- *Where to play along the value chain*
- *What cost model is needed to ensure attractive returns*

- *What organizational structure and capabilities are essential to success”*

(Deimler & Kachaner, 2019)

Conclusion

Reviewing those two disciplines in relation to service design showed that there is actually **overlap** between those disciplines and service design; **all consider the value proposition of an organization to its customer and how this organization creates value.** However, service design still **distinguishes** from those disciplines with its **specific focus on services** and the accompanying characteristics. Besides, service design as a discipline with its own tools and methods is already quite far developed, which makes it easier to apply in practice. Despite that, there is still a lot that can be learned from business design and business innovation. Therefore, also methods and tools that might belong to those disciplines were reviewed during the tool development phase, in the search for an answer to the research question.

2.5 Conclusion

To contribute to answering the research question, the theoretical background aimed to answer three sub-research questions. With regard to the first sub-question - *What does value and value (co-)creation mean?* - it can be concluded that there are different definitions of value, but that this report uses the following definition of value: 'the regard that something is held to deserve; the importance, worth, or usefulness of something' (Oxford University Press, 2019). It is important to notice that in that case value is related to something and the evaluation of value can be looked at from different perspectives. For example, an organization and a customer might view the value that is created with a specific service differently.

Furthermore, this report takes a **mindset of value co-creation**, because of its focus on services and the multi-stakeholder nature of the research question. This also means that there are multiple different perspectives on the co-created value and different types of value are relevant. However, value co-creation theory does not give insight on how those types of value can be co-created and how a stakeholder can benefit from that in practice.

Answering the second sub-question - *What is the role of value (co-)creation in service design?* - it can be concluded that service design could be a promising approach to explore opportunities for value co-creation and deal with the complexity of moving to services in a multi-stakeholder context, enabled by new technologies. However, the **focus of service design often is on exploring the value proposition by gathering customer insights and developing new ideas based on that. How this value could be co-created and how it would create value for the providing organization, is often not explored.**

Lastly, the insights regarding the third sub-question - *What is the role of value (co-)creation in an organization?* - will be discussed. In an organization, a business model is often used to describe how the organization creates value for its customer. For services, the **three main dimensions of a business model** can be described as the **value proposition, value co-creation and**

value capture. Although a multi-stakeholder situation asks for **multiple types of value**, in management literature and business models, the focus is mostly on monetary value only. There is no or less attention to intangible and non-monetary value or value that can only be derived in the long term. Also, it is often not taken into account that stakeholder can capture more, the same or less of value it co-creates and also the total co-created value can be more or less than the total of the captured value of each stakeholder.

In conclusion, the three dimensions that are used to describe a business model are the value proposition, value co-creation and value capture, provide a good framework to answer the research question: *How can opportunities for co-creating value for multiple stakeholders with new services be explored in the service design process?* However, it can be concluded that **literature did not give concrete insight on how to explore opportunities for value co-creation and value capture, next to the value proposition, in the service design process in practice, while taking into account the complexity of services with multiple stakeholders and the different perspectives on value.**

To answer this research question, the empirical research looks at how value co-creation and value co-creation are currently explored in practice. It also investigated how the service design process is currently executed at Ford and VanBerlo.



3

Cycle 1: Empirical research **METHOD**

To answer the research question and sub-questions, empirical research has been carried at Ford and VanBerlo. Ten semi-structured interviews were carried out with people with differing roles and experience with service design. Besides, data was collected through continuous dialogue with Ford employees. This chapter describes how the empirical research was done and the results can be found in chapter 4.

3.1 Qualitative research & research design

From the identified gap in literature about how value creation is explored in practice, it can be concluded that not so much is known about this process in literature. This research aims to contribute to literature by generating insights that help to understand this process, by analyzing how service designers and team members of the Ford innovation team currently deal with this. It does not aim to fully generalize these findings, but to deeply understand them in the specific context of Ford and VanBerlo. However, because different perspectives are included and the context of the research is known and described, others can decide for themselves which parts could also be applicable or helpful for them. Because of these reasons, a qualitative research methodology (Braun & Clarke, 2013) is chosen to answer the research question: *How can opportunities for co-creating value for multiple stakeholders with new services be explored in the service design process?*

Just as a design process, doing qualitative research is an iterative process. In my research process, two main cycles can be distinguished. The

first cycle is described in chapter 3 and 4 and consisted of empirical research to determine the main topics, processes and problems to focus on and to bridge insights from theory and practice by mapping and clustering insights. During a phase of synthesis a framework was developed that included the definition of the main problems. These results, which can be found in chapter 4, served as input for the second cycle. The second cycle can be found in chapter 5 and 6 and was more focused on generating ideas, translating theoretical recommendations to practice and coming up with solutions for the defined problems. Through an iterative research through design process in which co-reflection and testing was important, a model and tool were developed that would provide an answer to the research question. During both cycles, I tried to establish interaction between theory and practice, constantly reflecting on the insights I got and comparing them to what I learned from other sources.

3.2 Empirical research

As mentioned in the introduction chapter, the empirical research aimed to answer the following sub-questions to find out why the current services design processes do not sufficiently support the exploration of opportunities for co-creating value for multiple stakeholders with new services:

- *How is the service design process currently executed and experienced at Ford and what is the role of value co-creation?*
- *How does a design agency like VanBerlo deal with value co-creation in the service design process?*
- *What tools and methods are used for exploring opportunities for (co-)creating value with new services and what are their advantages and disadvantages?*
- *How suitable are those in a multi-stakeholder context taking into account multiple types of value?*

The research question is specifically applied to Ford, so to ensure an outcome that fits their organization, it was of great importance to gather in-depth insights. Besides, the sub-questions really focus on the process of designing a new service in practice, because that is also what this research aims to contribute to and where information was lacking in literature. To get concrete insights in this process, it was chosen to focus on the processes of real projects that had the goal to explore new service opportunities. To include the perspective of both an design agency and a legacy organization, the empirical research consisted of two parts.

First of all, **Ford was used as a case study** (Gray, 2014) to achieve deep understanding of the service design process of the involved innovation team and their perspective on proposing, creating and capturing value. Multiple sources of data were used to gather a variety of insights, but the most important source for data collection of this case study were semi-structured interviews (Patton, 2002). It was chosen to do a case study, because case studies are very suitable for answering a 'how' question about a process in a real-life context over which you don't have control as researcher (Gray, 2014). A singular case study with embedded subcases (Yin, 2012) was performed, because the holistic case that was analyzed was the design process at Ford, which was studied by multiple embedded units of analysis (Yin, 2012): multiple projects and their processes were discussed in the interviews. It was not aimed to compare the projects and to find differences and similarities between them, but to study the process at Ford from multiple perspectives. However, doing only a single case makes the insights not very suitable to generalize.

To broaden the perspective, the second part of the empirical research consisted of **semi-structured interviews** (Patton, 2002) that were performed **at VanBerlo**. Those interviews were done to get insight into how service design

experts perceive value creation in the service design process, specifically in the case of projects that involve multiple stakeholders. However, this was not a full case study with multiple sources of data, so the total empirical research is also not a multiple case study.

Sample of participants and projects

This research looks at how you can explore opportunities to co-create and capture value with new services. A team that designs and develops these new services in the service innovation process can consist of both designers and non-designers and their background might influence their view and behavior. For example someone with a design background and a lot of experience with service design, might naturally be more focused on the value proposition, whereas someone with a business background might be more focused on the value capture.

Because the outcome of this project would be applied at Ford, it was of course important to study and include their service innovation process in the empirical research. At Ford the involved team consists of people with a diverse range of backgrounds, mostly a non-design background. They are currently applying design thinking in their projects, but their experience with design varies. In an attempt to cover a variety of experience with and knowledge about (service) design in the sample, **purposive sampling** (Sanders & Stappers, 2012, p.154) was applied, scouting both participants with a design and non-design background. In the case study at Ford, discussions were held with an employee with a design background, but the participants in the semi-structured interviews had mostly limited experience with design (see table 2). Therefore, and to include the design agency perspective, additional participants with service design expertise were scouted at VanBerlo for semi-structured interviews (see table 3).

Table 2: The 6 Ford participants in a random order, with their background, expertise, the project they chose for the assignments, its horizon and the (potential) project stakeholders.

Background	Expertise	Project	Project horizon	(Potential) project stakeholders
Degree in electrical engineering	Technical guidance	Development of ecological driver assistance software (10 year project in total)	Near/now	Telecom providers, cities, suppliers, competitors
Degree in electromechanics with MBA	Project management in innovation with a business focus (business design)	New mobility concept	Far	Several internal Ford stakeholders (such as technology development teams) Cities, universities, Ministry of Infrastructure and Water Management, engineering consultancies
Officially electrical engineer, but never worked in that field	Coordinating research projects, being the link between people/fields	Development of a new product-service system that would work in collaboration with other parties	Near	Several internal Ford stakeholders (such as Product Development, partnerships team, innovation management team), delivery company, 3rd party companies, end customers
Bachelor in business management	Partnerships & Innovation	European go-to-market of a company with a product-service-system owned by Ford	Now	Several internal Ford stakeholders, start-ups, universities, cities
Master International Business Management	Product owner with a vision and experience in after sales	Connected service project in collaboration with D-Ford (new design thinking organization of Ford)	Near	Ford dealers, Ford car owners (end user)
Degree in Business Administration	Design Thinking	Development of a new service for a specific target group of commercial vehicles	Near	Client companies, 3rd party companies for additional services, external supporting companies (such as agencies and universities)

All participants, both in the case study at Ford and in the semi-structured interviews at VanBerlo, were asked to discuss the **process of a specific project** they were part of and that comprised the design and development of new services. Preferably, these were project processes in which multiple stakeholders were involved. This was done to make sure to get insight in real processes and because it is easier for people to talk about things that happen now and or happened in the past, before asking them about what they would like in the future (Sanders & Stappers, 2012). Besides, it already guided them in the direction of services and a multi-stakeholder context, because that is the context of the projects this research focuses on. These projects were the embedded subcases of the case

study to the overall process. The projects that were discussed are described in the 4th column of table 2 for Ford and table 3 for VanBerlo. The 5th column of table 2 also gives an indication of the time horizon of a project, based on the scale that Ford uses for this. This indication helps to understand how exploratory the project still is and how well defined the outcome is. Time horizon 'Now' is chosen for projects that are currently being implemented. 'Near' is chosen for projects that are expected to be implemented in the upcoming years. 'Far' is chosen for projects that focus on what the future could look like. The last column of both tables gives insight in the potential stakeholders of the project to give an indication of the multi-stakeholder context of each specific project.

Table 3: The 3 service design expert participants in a random order, with their background, expertise and their for the assignment chosen service development project with multiple stakeholders.

Background	Expertise	Project	(Potential) project stakeholders
PhD multi-stakeholder design	Alliance forming and multi-stakeholder innovation in a designerly way	Alliance formation central registration point for the 'debt lab'	Many stakeholders around debts, such as debt assistance organizations, municipalities and ideally also organizations where people have debts, such as banks and shops
Master Design for interaction & Service design	UX Design and service design	Future smart city guidelines for an Indian city	Government, citizens, builders and the agencies that took care of the maintenance, sub-parties
Design bachelor & Innovation management master	Developing new tools & methods and services & propositions for the design studio	New product/service development for boiler manufacturer	The manufacturer, housing association, building/house tenants, installers, the government

3.3 Case study Ford

The overarching main goal of the case study at the involved innovation management team at Ford was to get insight in the service innovation processes of Ford and finding the needs and struggles of the participants. Next to getting insight in their service innovation process in general, there was extra focus on processes around value co-creation and situations in which multiple stakeholders were involved.

Data collection

As said, the main source of data collection during this cycle of the case study at Ford was data from semi-structured interviews in which I used an interview guide as described by Patton (2002). This method was chosen, because the type of data that was searched for was information about the service design process and the role of value (co-)creation and next to this informational type of data also the participant's experience with this process to learn about their struggles and needs. Also, insights in perception of value among Ford employees was searched for. Contextmapping (Sanders & Stappers, 2012) principles and processes were used as part of the interview process to get richer information from the participants about their deeper understanding, for example by using sensitizing material (Sanders & Stappers, 2012), accessing not only their explicit knowledge but also their more tacit knowledge. Between 1 and 2 weeks prior to the interviews, the participants received a sensitizing booklet (see Appendix A) that they were asked to fill in and bring the interviews. These filled in booklets contained additional data and were also used as a source during the data analysis, see figure 9 for some examples. The interviews were complemented with insights from informal conversations, observations from when I was working in the same environment and insight in materials. Those materials were mainly materials that support the innovation processes at Ford,

such as models of the process, slides with information about steps that need to be taken and forms that are required to fill in.

Two visits to the Ford Research & Innovation Center Aachen were made prior to the interviews. Informal meetings without agenda were done to explore the context and get a feel for the work processes and to decide on the next steps of the research. Also, I worked in the same environment those two days as the Ford employees, immersing myself in their context. The observations and information from the conversations were used to develop an interview guide (see Appendix B) for the semi-structured interviews. This interview guide was not tested during a pilot session. However, the sensitizing booklet was talked through with my contact person at Ford and improved afterwards, so that it suited the work and context of the participants more.

The goal of the sensitizing booklet (see Appendix A) was to prepare the participants for the interview, start their thought process on value (co-)creation and serve as a guide during the interviews. It was also used to gather some background information from the participants. During the interviews, an interview guide (see Appendix B) was used that followed the same order as the sensitizing booklet. This guide listed the carefully selected topics and related questions that I wanted to explore during each interview. It was meant to ensure that those main topics would be covered in each interview, while still leaving room for flexibility in probing, discussing additional topics that emerge or more in-depth exploration of a certain topic (Patton, 2002). It also makes it easier to keep the interview focused and spend the interview time efficiently.

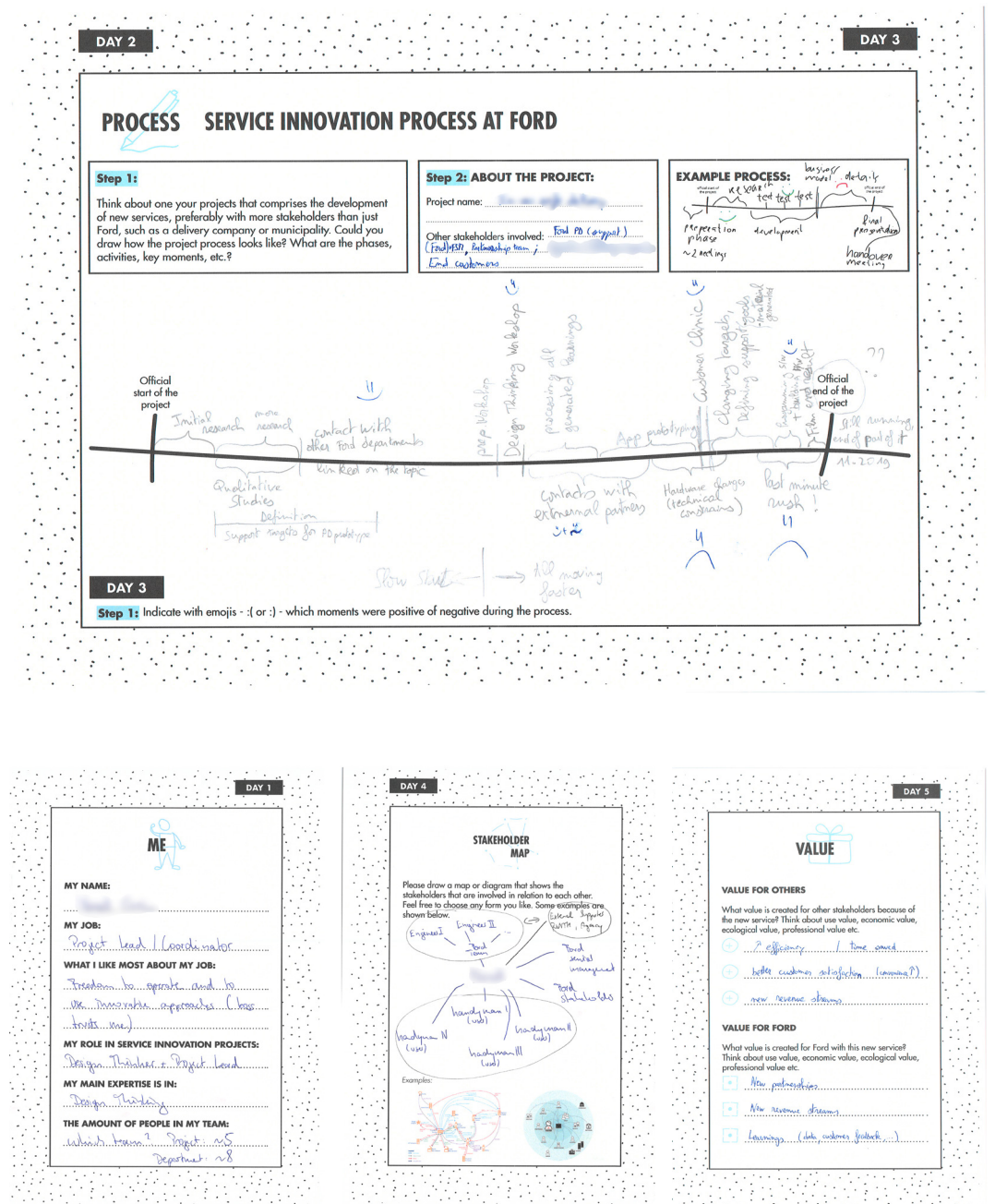


Figure 9: Examples of filled-in assignment in the sensitizing booklet

3.4 Semi-structured interviews VanBerlo

The overarching goal of the semi-structured interviews with service designers at VanBerlo was to get a broader understanding of how design practitioners deal with value co-creation and value capture in the process of designing and developing new services. The interviews were also used to compare to the case study at Ford and to study the same phenomena from different perspectives. Lastly, the interviews at VanBerlo were also done to get more insight in the tools and methods that are currently used for exploring opportunities for (co-)creating value with new services.

Just as during the interviews at Ford, there was searched for information about the service design process and the role of value creation and next to this informational type of data also the participant's experience with this process to learn about their struggles and needs. Again, insights about the perception of value were also searched for. Because the participants during these interviews had more experience with service design, more attention was paid to getting information about and learning about their experience with tools and methods around value that they use in service design processes.

Data collection

Data was again collected through semi-structured interviews with an interview guide (Patton, 2002), because the same type of information was searched for. Also contextmapping (Sanders & Stappers, 2012) principles and processes were again used as part of the interview. Prior to the interviews, the participants received a sensitizing assignment that consisted of two A3 sheets (see Appendix C). They were asked to fill in this assignment prior to the interview and bring it with them during the interview. It was meant to let the participants explore the broad scope of the topic to prepare them for

the interview and start the process of reflecting on their experiences. Therefore, the sensitizing assignments focused on explanation and understanding of the topic as well as reflecting on past experiences. In the assignments a part about tools for multi-stakeholder service design projects was added compared to the sensitizing assignments at Ford. Since the people in this sample had more design experience, this topic was more relevant and important during these interviews and could provide new insights that would contribute to answering the research question. The filled-in assignments were also treated as data and used during the data analysis, see figure 10 for some examples.

An interview guide (see Appendix D) was developed to structure the interviews and make sure the same topics would be covered in each interview, while still leaving room for exploration and probing. The interview guide was designed to follow the path of expression (Sanders & Stappers, 2012), going from the present (about the person's job) via the past (a previous project) to the future (ideal way to facilitate value creation discussions). The interview guide was tested in a pilot interview, after which it was slightly improved and used for the three interviews included in this cycle.

The figure shows two examples of assignments filled in by designers at VanBerlo. The top sheet is titled 'VALUE CO-CREATION IN SERVICE DESIGN PROJECTS' and contains an 'INTRODUCTION' section with a handwritten definition of value co-creation and an 'ASSIGNMENT 1: SERVICE DESIGN TOOLS' section. In the assignment, the designer has circled 'Value flow mapping (Dan Ouden & Valkenburg, 2011)' and 'Service Blueprint (Shostack & Valkenburg, 1984)' and drawn smiley faces next to them. The bottom sheet is titled 'VALUE CO-CREATION IN SERVICE DESIGN PROJECTS' and contains 'ASSIGNMENT 2: SERVICE DESIGN PROCESS WITH MULTIPLE STAKEHOLDERS'. It includes a project description and a handwritten process diagram showing stages like 'Official start of the project', 'Research', 'Interpretation', and 'Official end of the project'.

Figure 10: Examples of the assignments designers at VanBerlo filled in

3.5 Data analysis



After collecting the data, **data analysis was done 'On the wall'** as described in Convivial Toolbox (Sanders & Stappers, 2012). This kind of analysis is suitable for a maximum of 10 participants and is a 'light' form of analysis; still very exploratory, serving both the move from data to insights and as form of inspiration for before further analysis. To prepare the data for this type of analysis, **transcripts** were made of each interview (see appendix J). In the transcripts, interesting quotes were highlighted of which statement cards were made. These statements cards summarize and express the researchers understanding of the quote. From the **statement cards** clusters of statements with similar meanings were made in order to find patterns. The sensitizing assignments were also used during analysis.

Prior to analyzing the data from the interview session, I mapped my insights and reflections on the literature on some papers on the wall (see figure 11). Those contained both theoretical statements as well as my own critiques, thoughts and hypotheses. At the start of the analysis, the **three dimensions of a business model, value proposition, value co-creation and value capture**, that were defined in the theoretical background served as an initial framework to cluster the data.



Figure 11: Analysis on the wall, combining insights from literature with reflections and insights from the interviews

Because these three dimensions are all important to explore and evaluate opportunities for co-creation in a multi-stakeholder context, it seemed interesting to see how those dimensions came back in the service design processes at Ford and VanBerlo.

I clustered the insights on statement cards of both the case study at Ford and the interviews at VanBerlo in a framework with two axes. On the horizontal axis, the insights were plotted on the design process, indicating when in the design process the specific insight occurred. The phases of this design process were based on the service design processes that the participants had drawn in their sensitizing assignments and booklets and the VanBerlo design process (see figure 5 in chapter 2). On the vertical axis, the three dimensions proposing value, co-creating value and capturing value were displayed. In this way each insight was also categorized on what type of value-related process it contributed to. On top of that, clusters emerged that did not fit a specific phase in the design process, such as general clusters for proposing value, co-creating value and capturing value and clusters such as 'personal attitude & expertise', 'servitization at Ford' and 'multi-stakeholder projects/alliance forming'.

However, this way of structuring the insights did not really lead to interesting conclusions that would be helpful in finding out why the current services design processes do not sufficiently support the exploration of opportunities for co-creating value for multiple stakeholders with new services. To get more insight into this, the insights were restructured in a framework that plotted all **struggles and opportunities around value in the service design process**, that came forward from the interviews on again a general timeline of a project process. Each struggle or opportunity was now categorized according to processes around one of the dimensions of a business model; proposing value, co-creating value and capturing value, see figure 12. Although it was interesting to see where in the process problems occur, some struggles and opportunities were also forced fit on the processes of proposing value, co-creating value and capturing value. The risk of this is that insights are taken out of their context and original meaning.

Based on this framework it was discovered that several comments from participants showed

that there are often **struggles when people with different background and roles in an organization needed to be involved or convinced of the value of a project**. Figure 13 shows for Ford how people in a certain role look at each specific dimension of the business model and what they specifically focus on. It is important to keep in mind here that this is only based on interviews with employees involved in designing new services and their perspective on how other people in the organization perceive value. Figure 14 shows the quotes that support this. The two boxes without quote are filled with my own hypotheses, because there was no supporting quote.

During this analysis, it became clear that it would be very relevant to include an extra participant to the sample of Ford employees, namely the supervisor of the involved team. This would complement the insights within the existing framework. Therefore, an additional semi-structured interview was planned and performed. The insights of this interview are also taken into account in the results section.

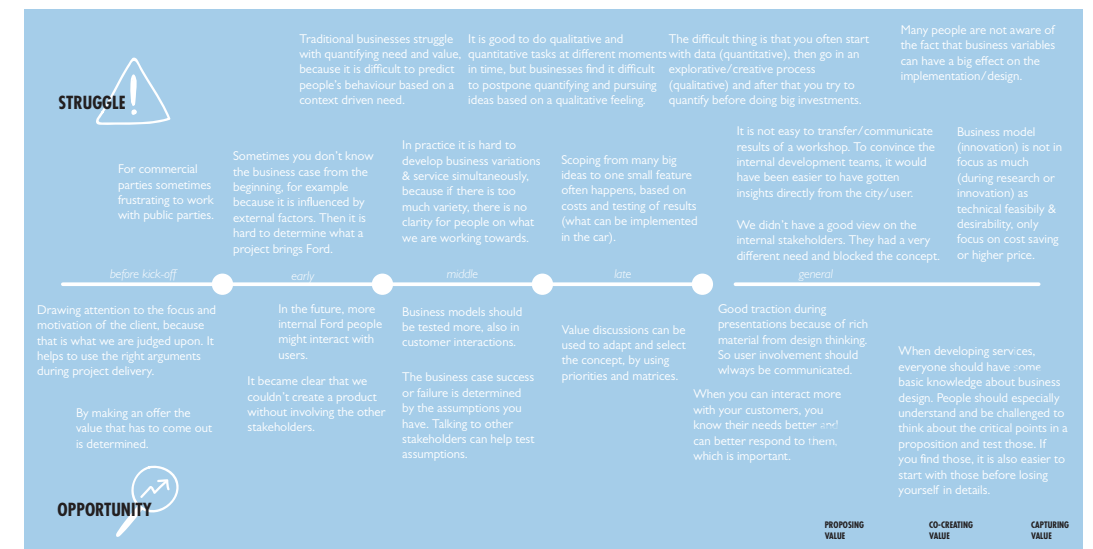


Figure 12: Struggles and opportunities around value-related processes

	PROPOSING VALUE	CO-CREATING VALUE	CAPTURING VALUE
Higher management	Vision	Strategy	Goals
Middle management			Decision making on viability
Product development			Cost goals
R&A (IMSMVC)	Expertise in: Technology Business Design thinking Special focus on: Desirability	Engagement with stakeholders; users, cities, (potential) partners, other Ford teams etc.	Translate insights into business case
External stakeholders	Mutual benefits	Collaboration	Own goals

Figure 13: Roles and perspectives around value-related processes

Furthermore, during the phase of data analysis, dialogic engagement (Ravitch & Mittenfeller, 2015) with TU Delft supervisors, my contact person at Ford and a designer of VanBerlo, time for reflection and incubation time caused different iterations and changes in the clusters and framework in which the clusters would fit. Part of this was also going back to the (sub) research questions for the empirical research. Doing this again led to the conclusion that although interesting conclusions could be drawn from the two frameworks above, they did not sufficiently help to concretely determine what would help Ford most in exploring opportunities for value co-creation with new services and to develop an outcome based on that. As mentioned before, the forced fit of some struggles into the dimensions value proposition, value co-creation and value capture did not really tell the story that came forward from the data. Besides, in the struggles and opportunities framework the conclusions that came from VanBerlo are mixed with the conclusions that are specifically relevant to Ford. Therefore, a new iteration of the analysis of the interview insights from Ford, resulted in a framework of their service innovation process and the concrete struggles

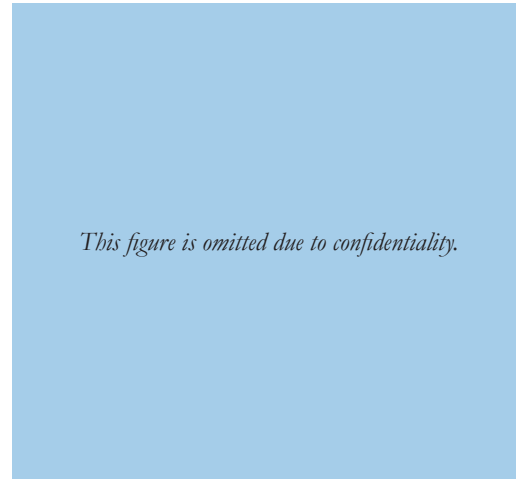


Figure 14: Supporting quotes for roles and perspectives around value-related processes

around the research question that were identified. In this framework, the theoretical concepts of proposing value, co-creating value and capturing value did not have a directing role in the framework, but they were only applied to the moment in the process they were most present and relevant. This result of this analysis explained in chapter 4.

Lastly, I also analyzed insights specifically about the use of tools around value co-creation, in the service design process. I plotted the mentioned tools and the purpose for which they were used on the timeline of a general project process, see Appendix E and F for the tables in which this is shown with or without quote. From this table could be concluded what tools are used at what moment for which purpose. The tools that were specifically common to use at Ford also got a place in the above described framework about Ford's innovation process.

3.6 Validity of the research

To ensure the validity of the qualitative research, a few strategies for achieving validity (Ravitch & Mittenfeller, 2015) were applied.

During the empirical research, people at both an organization (Ford) and a design agency (VanBerlo) were interviewed. This also covered a varying range of experience with design. At Ford, people from both inside and outside the involved innovation team were interviewed about the same topics. Also, the supervisor of the team was interviewed in addition to the nine interviews that were executed during the first cycle, to add someone with a different role in the organization. These were all examples of how **perspectival triangulation** (Ravitch & Mittenfeller, 2015) was applied.

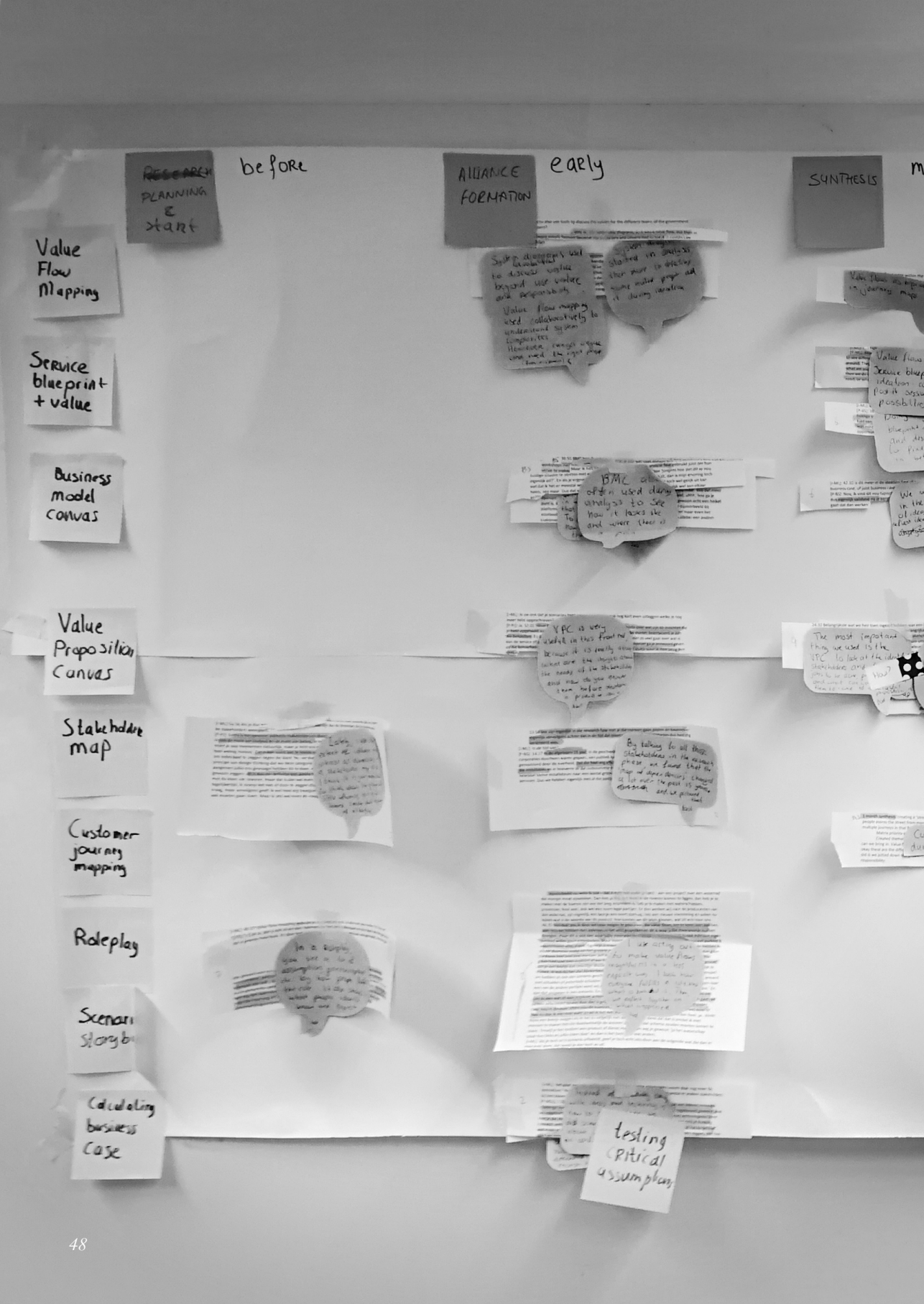
In the research at Ford, also **methodological triangulation** (Ravitch & Mittenfeller, 2015) was applied. Several data collection methods were performed. Next to the main source of data, the semi-structured interviews, informal conversations and discussions were held, group sessions were done and insight in materials was given. Those materials were mainly materials that support the innovation processes at Ford, such as models of the process, slides with information about steps that need to be taken and forms that are required to fill in. Reviewing those helped to get a better understanding of Ford's traditional innovation process, the struggles that are experienced with it and the differences with and ideas for a new process.

Especially during the data analysis phase it was important to go beyond the perspective of one researcher by fostering **dialogic engagement** (Ravitch & Mittenfeller, 2015). Therefore, in the middle of the analysis a meeting was planned with both TU Delft supervisors to discuss the current status of analysis and hear

their perspective on it. After that, a session with a service designer of VanBerlo was done to collaboratively continue the data analysis. This led to a new iteration of the clusters and framework.

After the data analysis phase, a collaborative session was held at Ford to kick-off the research through design phase. However, before moving to solutions, the insights that were gathered so far were presented to a majority of the participants of the semi-structured interviews. This was done to check in with them and discuss if this interpretation of their words resonated with what they meant. This was a form of **participant validation** (Ravitch & Mittenfeller, 2015).

Lastly, some **structured reflexivity practices** (Ravitch & Mittenfeller, 2015) were performed throughout the entire research process. A research logbook was filled in to keep track of activities. Continuously, notes were made and stored and organized digitally in OneNote. Also, interpretation of data was regularly discussed with graduation supervisors, the contact person at Ford, a fellow service designer and to some extent with fellow graduation students of the faculty or recent design graduates (while taking into account the NDA).



4

Cycle 1: Empirical research RESULTS

In this chapter, the insights from the empirical research are presented. Those results were used as input for the further development of the service design process at Ford and the development of a tool, which will be described in chapter 5 and 6.

4.1 Service design at Ford and VanBerlo

In the introduction chapter, it has been discussed that several organizations that used to manufacture and sell products, like Ford, need to stay relevant in the market by dealing with factors like complex problems that ask for collaboration, new technologies that enable new value propositions and servitization. Taking a design approach to come up with new services in a multi-stakeholder context seemed a very promising approach. First of all, the case study at Ford and the interviews at VanBerlo gave insight into how Ford and VanBerlo currently use service design.

Service design at Ford Research & Advanced Engineering in Aachen

The case study at Ford gave a lot of insights into the innovation process of their organization. Understanding this context very well was important to eventually work towards an outcome that really fits the Ford organization.

As mentioned before, the involved innovation team at Ford Research & Innovation Center in Aachen has as their goal **to inspire the Ford organization with new concepts** that show what the future could look like for Ford. They have to help Ford stay relevant in the future and they feel the urge to change something in the organization. They see new opportunities for Ford, such as starting to offer more services and collaborating with other stakeholders. The following quote from one of the interviews illustrates why Ford's innovation teams start to think about designing services:

“Car manufacturers have no idea what the future will bring. Digitization and connected vehicles are coming. A university or Chinese company can produce vehicles now, which was much more difficult with combustion engines. This is a huge problem. So, it is key

to provide anything in addition to the vehicle that keeps the customer at Ford.” – team member Ford innovation team

For a long time, this team used a **traditional stage-gate innovation process** to develop new products. However, from conversations with the team members it could be concluded that **this process does not fit the development of new services with a design approach**, not even speaking of a multi-stakeholder context yet. The stage-gate process does not an iterative approach that might lead to unexpected changes in the outcome and the process is completely adapted to the development of tangible products, which is illustrated by the following quote:

“As soon as we are in the traditional technology development process, you are working towards a clearly defined goal with clearly defined milestones. A service design process that is very iterative because of the insights from the stakeholder research does not fit this clearly defined process.” – team member Ford innovation team

The characteristics of services that are mentioned before, such as focusing on offering a user experience over time, make it difficult to use the same process. Different expertise is needed for development and services also ask for different business models. In order to adapt their innovation process to services and make it suitable to address the challenges Ford is currently facing, the team is already collaborating with TU Delft for a few years to integrate a design approach in their innovation process.

Design thinking is currently used as a mindset and methodology to improve Ford's own innovation process. The Ford R&A team currently uses Ford's existing design thinking

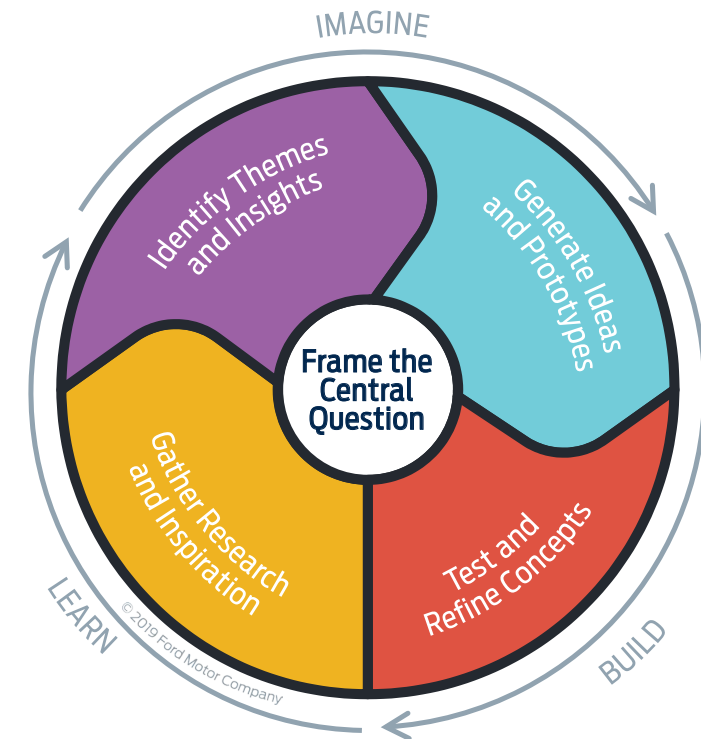


Figure 15: Ford's existing design thinking model

model (see figure 15) as foundation for their service design process. This model consists of four phases that can be iterated: Gather research and inspiration, Identify themes and insights, Generate ideas and prototypes and Test and refine concepts. Based on the TU Delft collaboration and increased attention to design, **the team also already adopted some service design methods that they currently apply in their projects.** However, **most of those methods focus on gathering, analyzing and presenting customer insights and coming up with ideas based on these insights.** Not a lot of service design projects have made the step to development and implementation and taking the business context into account yet.

During the interviews at Ford, different innovation and service design projects were discussed, as can be seen in table 2 in the previous chapter. These covered projects in both the 'now', 'near' and 'far' time horizon that the

Ford innovation team uses. However, during the interviews it turned out that for answering the research question of this graduation project, the interviews about projects in the 'near' and 'far' turned out to be most relevant. In the 'now' project there was less room for exploration of new opportunities in a multi-stakeholder context. Although there were multiple stakeholders involved, dealing with them was more ad-hoc and focused on solving specific problems.

Service design at VanBerlo

As design agency, VanBerlo helps clients with service design projects. From the interviews it became clear that they adapt the service design process to each individual project. Also, they do a lot of collaborative sessions to involve and empathize with other stakeholders and they adapt existing tools to the purpose of those sessions. It also seemed that for the interviewed designers it was natural to think about multiple stakeholders in their projects. However, in some projects

they are still only involved to a limited extent, for example because they are only involved during the research and ideation phase to come up with a new value proposition and in the test phase to test the service that delivers this value proposition. There is not always room for co-production and co-creation of value.

From the interviews at VanBerlo, two main struggles came forward about service design:

Traditional organizations (especially managers who decide on whether projects will be implemented or not) look for quantitative insights, where service design is often built on qualitative insights.

“The difficult thing is that you often start with data (quantitative), then go in an explorative/creative process (qualitative) and after that you try to quantify before doing big investments.” – designer at VanBerlo

This mismatch leads to **struggles when the project needs to be evaluated** on the value that is planned to be co-created and captured. If the deciding manager can not be convinced of the value of a project, chances are that it will not be implemented. However, sometimes it is very difficult to give the quantitative arguments this manager is looking for, which is illustrated by this quote of a designer at VanBerlo: **“Traditional businesses struggle with quantifying need and value, because it is difficult to predict people’s behavior based on a context driven need.”** Understanding between the project team and the deciding manager seems very important to improve this struggle.

Secondly, **the perspective and interest of the different internal stakeholders that will be influenced by the project is very important**, when a service design agency executes a project for a client. With internal stakeholders is referred to people or team in different roles of the

organization, such as the development team, project owner, deciding manager, etc. Although the project owner that is involved in the project and present during meetings and presentations with VanBerlo might be enthusiastic, to implement the project those other stakeholders should also be aligned. As explained before, struggles might otherwise emerge when the project is evaluated.

The following quotes of show what the consequence could be of not having the interest of internal stakeholders in focus:

“We didn’t have a good view on the internal stakeholders. They had a very different need and blocked the concept.” - designer at VanBerlo

“It became clear that we couldn’t create a product/service without involving the other stakeholders.” - designer at VanBerlo

Also a suggestion for a next time was done: **“If I would do it again, then I had done a different exploration and that you should have done a few reviews in between to align with how fitting these ideas that come out of it are with the business strategy.”** - designer at VanBerlo

Lastly, insights came forward from the service designers at VanBerlo about multi-stakeholder projects that were really in the beginning phase. Those projects were not yet about designing service, but about forming an alliance and getting many stakeholders to the table and aligning them. A service design project could follow that phase, but sometimes after forming the group of stakeholders and getting them aligned on a shared goal was the sole purpose. Those kind of projects were out of scope of this graduation project and therefore those insights are also not discussed here.

4.2 Value co-creation with multiple stakeholders



After getting understanding of the current state of service design at Ford and VanBerlo, the data analysis focused more on value co-creation with multiple stakeholders in the design process. As described in the previous chapter, several clusters emerged that did not fit the frameworks (see figure 13 and 14) about struggles, opportunities and roles. However, the cluster about different types of value that were mentioned was very relevant for understanding how is currently looked at those different types of value in practice.

From the theoretical background could be concluded that when multiple stakeholders are involved in a project, multiple types of value play a role, such as brand reputation, ecological value, money and use values (for example convenience). A need for a broader scope of value in business models was identified. When interviewees were explicitly asked about the values of a project for their organization or other stakeholders, interviewees came up with a broad range of values that include examples from different types of value. So, **there is awareness about a broad scope of values**, which is illustrated by the following quotes:

“I think also for the cities, it is more that you,... the traffic flow is also interesting for them. So if you drive ecological, it is more fluent, fluent traffic, so it is also better for the traffic flow.” - team member Ford innovation team, discussing that driving ecological could be valuable for the traffic flow

“That’s a service that would be offered in the vehicle. So obviously that would mean that people who have the vehicle, if it is a good service, are most likely to stay with the same brand of vehicle, because they have things that they like in it. So even though that is not

bringing money, that is value as well. And even though we get the money from the third parties, we do get something back from the customers as well. So that’s why I did a put a flow there as well.” – team member Ford innovation team, showing awareness about how a positive brand image can be of value

“And then the value for Ford. The first and foremost value which we initially saw, also from a business model innovation perspective, is that really a lot of the future, or potential future, users of that service offering, are currently not customers of Ford.” – team member Ford innovation team, showing awareness about the value of addressing a new potential customer group

In conclusion, it can be said that there is **awareness about different types of values for different stakeholders** among the innovation team members at Ford. This is a good start for exploring opportunities for new service in a multi-stakeholder context, because then multiple types of value play a role. However, the team members have to be **sensitized and asked**, before they make these types of values explicit, which is something to take into account during the tool development phase.

Furthermore, it came forward from the interviews at VanBerlo that decisions about value are sometimes made very pragmatic or only based on money, as illustrated by the following quotes:

“Yes, the user wants a lot, of course it has to be business viable, technology feasible and desirable, in a triangle, these things you have to keep in mind as designer, I understand, although nowadays you also have to take sustainability into account. You can listen

to the user without thinking, like ‘he wants this, we make his life easier’, but if that ruins the earth, you can also think about if we should want that. (...) Often these are indeed more pragmatic choices than that the same choices are made on an ethical axis.” – service designer at VanBerlo

“Project with the government of India had a lot of societal value, but was closely tied to cost, as long as the cost factor was in, it was something that could be implemented. (...) But if I look at projects with corporates, they don’t particularly assess what materials they use or what processes they do for production. They don’t see circularity as a value exchange. They don’t see sustainability as something on the table as a conversation, that is more as a by-product in the end. With organizations, it really does become cost value.” – service designer at VanBerlo

From these quotes could be concluded that when decisions about the value that is co-created and captured with a project are made very pragmatic or based on monetary value only, those projects could be very unsustainable for our planet. This relates to the conclusion in the theoretical background that a service system can in total capture more or less value than it co-creates for each individual stakeholder (Pitelis, 2009). When more value is captured from our planet, for example in the form of resources, than is given back and co-created, it could have a negative impact on the planet. It would be good to make people aware of the total value that a service co-creates in relation to what it captures. This was kept in mind during the tool development phase.

The next section takes a closer look at what struggles are experienced in the service innovation process at Ford that relate to co-creating value with new services.

4.3 Problems with value co-creation in the service design process at Ford R&A



As mentioned in the previous chapter, the insights from two earlier frameworks led to a new iteration that specifically focuses on Ford R&A and the problems that are experienced in their service innovation process. As a consequence of those problems service design is now not used in a way that helps to explore opportunities for value co-creation with new services. It became clear that insights about the service design process at Ford R&A could mainly be categorized in three topics; processes, people and tools. This is shown in figure XX with the categories processes, people and tools on the vertical axis, ending with the problems that occur. On the horizontal axis, a timeline is shown. It mainly focuses on the services design process, but also shows the transition towards implementation and execution. This structure helps to see where struggles are experienced that cause the difficulties that are experienced with exploring opportunities to co-create value with other stakeholders and to come up with new, valuable service concepts.

Processes

The ‘Processes’ row at the top of figure 16 shows which of the three dimensions of a business model that are defined in the theoretical background, play what role at what moment according to my observations and insights from the interviews. It could be concluded that the value proposition is thoroughly explored, tested and iterated in the early, exploratory phases of the design process, which is illustrated in the following section by the use of specific service design tools. When a concept is chosen, there is more attention for the planned value co-creation and value capture, because these play a role at the evaluation and decision moment, when it is considered if the project will be implemented further. Towards implementation and execution more details about how value will be co-created

and captured in the real situation are defined and discovered.

Below that is shown in which Ford processes service design plays a role. From an interesting opportunity or insight, the R&A team can start a project. It either goes into their traditional ‘Technology Development Process’, which is their earlier mentioned traditional innovation process that does not really fit service design, or follows an alternative process based on a service design thinking approach. This alternative process is not yet defined or structured, except for the earlier mentioned Ford design thinking model that is used as inspiration. This leads to a **service design process at Ford R&A that is fuzzy**. Without a structured process and clearly defined milestones, it is difficult to keep track and have the overview of the project. However, this is needed when the team wants to address more complex opportunities for new services. A lot of insights are not made explicit and remain at the one person leading the project, because there are no people or milestones asking to concretize the results, which is illustrated by the following two quotes:

This quote is omitted due to confidentiality.

This quote is omitted due to confidentiality.

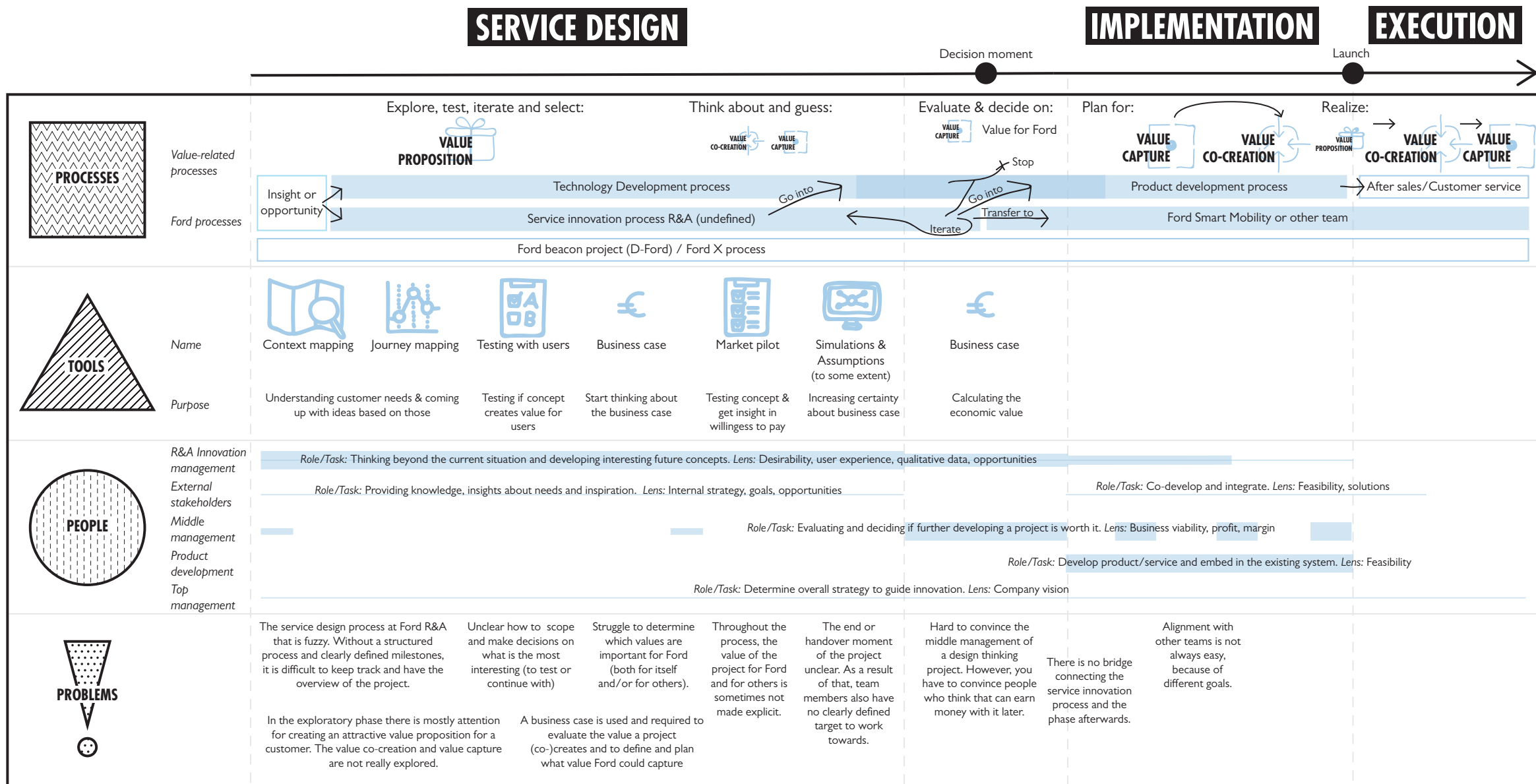


Figure 16: Framework that summarizes the insights of the case study at Ford.

From these interviews it could be concluded that the process was not structured and a lot of information remained in their heads. However, for managers these kind of projects are then hard supervise and evaluate, they rely often on trusting their employees, which is illustrated by the following quote:

This quote is omitted due to confidentiality.

Furthermore, the fact that this process is unstructured makes the **end or handover moment of the project unclear**. As a result of that, team members also **have no clearly defined target to work towards**, which is illustrated by the following quote:

This quote is omitted due to confidentiality.

Besides unclarity in their process, not having a target, makes it also hard for team members to evaluate their work and consequently their success:

This quote is omitted due to confidentiality.

It can be concluded that on the hand, it helps to have structure and clarity about the process, to manage progress and have a goal. However, on the other hand it is important that the service design process still allows flexibility, as illustrated by the quote below. So, balancing flexibility and structure is a key challenge. Furthermore, it was expressed that flexibility is important in the sense that the process is adaptable to a specific project and individual preferences:

“If you have a milestone and you see that it doesn’t fulfil all the requirements, maybe it is going to do it just later, and so sometimes having too many roadblocks can kill the thing. Not every project develops at the same pace.” – team member Ford innovation team

Furthermore, a few insights about the process came forward that could be clustered as **struggles with evaluating and selecting opportunities and scoping the project**. These do not specifically relate to value co-creation in the services design process. However, they are very relevant during the exploration of new opportunities. Therefore, they are shortly summarized below and supported with a quote:

- Unclear how to scope the project and make decisions on what is the most interesting to continue with.

“I think we prioritize decisions now very unconscious (...) we don’t have the tools to do that. (...) quantifying opportunities is hard. You want to do that at a higher level. It would be interesting when you could scale the opportunity, without quantifying it with a number, to see how big the opportunity is for Ford.” – team member Ford innovation team

- Struggle to determine which values are important for Ford (both for itself and/or for others). The overall target is not clear.

This quote is omitted due to confidentiality.

Despite these difficulties, an interesting opportunity to deal with scoping and evaluating of opportunities came also forward from one of the interviewees. Assumptions are critical to determine the success or failure of a business case, as illustrated by the following quote:

This quote is omitted due to confidentiality.

Finding the most critical assumptions and testing those, can help to scope and evaluate the project and get an estimation of what value would be co-created and captured, as illustrated by the following quote:

“The value of a value analysis is that you challenge people from the start of a project to see where the critical points are. If you have to think about what something is going to cost me or if I have to think about what is the value of a service for a customer or how much a customer would possibly pay for it, or that you are going to generate money in another way, then it is easier to see what the critical points are and if you look at those scenario analyses, where the biggest levers are. Then it is more logical to start there and not lose yourself immediately in details.” – team member Ford innovation team

As can be seen in figure 16, after a service has been designed and tested, there is an evaluation moment. Here, the value of the concept for Ford is evaluated. Based on that is decided if it will be further developed and implemented, if it needs another iteration or if it will be discontinued. However, if it is decided to implement the concept, the transition towards the product development team is sometimes difficult: there is **no bridge connecting the service innovation process and the phase afterwards**. The following quote gives an example of what needs to be done to make this transition:

This quote is omitted due to confidentiality.

Lastly, some other Ford processes and teams that use service design elements were mentioned during the interviews. However, those are targeting a different type of innovation than that is addressed by the involved R&A team.

Although elements of those could serve as inspiration, those processes as a whole are not included in the analysis of this graduation project.

Tools used by the team for designing and developing services

From the ‘Tools’ row in figure 16 can also be concluded that at Ford, service design tools are mostly applied at the early, exploratory phase of the service design process. As already discussed in the first section of this chapter, the team mostly applies tools that focus on gathering, analyzing and presenting customer insights and coming up with ideas based on these insights. This means that they **really focus on coming up with a great value proposition for the user** during the exploratory phases of the service design process. However, the **value co-creation and value capture are not really explored**, as is illustrated by the following quotes:

This quote is omitted due to confidentiality.

This quote is omitted due to confidentiality.

It also came forward from the interviews that a **business case is used and required to evaluate the value a project (co-)creates and to define and plan what value Ford could capture**. The team members are then also asked to explain **‘What does the project bring Ford?’**. So therefore the business case as a tool is used more towards the later phases of the design process, when a concept already has been chosen. However, **a business case only focuses on a justification of the monetary value a project could directly create**. Of course, this is important to eventually get insight in as an commercial organization, but it does not stimulate exploration of new opportunities to co-create and capture value in a different way, which maybe leads to even more interesting opportunities that derive value less directly from a customer. In the theoretical background, the need to include different types of value already early in the project process, was identified. This would argue for earlier discussion, exploration and integration of the business model aspects value co-creation, value proposition and value capture in the service design process than towards the end phase.

This quote illustrates why it might also be important to also explore the other dimensions of a business model earlier, because it can really affect the implementation:

“For us, the business model had quite some influence on the design of the powertrain. (...) That might be things that a lot of people don’t always realize, but there are quite some business variables that possibly affect your eventual implementation.” – team member Ford innovation team

Furthermore, as mentioned before, team members themselves came up with different types of value when they were asked about it, but those **values are sometimes not made explicit during their projects**, as illustrated by the following quote:

“We don’t make these values explicit, because they know them by themselves.” – team member Ford innovation team

This is related to their experience that it is **hard to express other values that could be co-created in a business case**, as illustrated by the following quote:

“Because we could learn from each other, or form some kind of alliances/connections and because of that also other things, other opportunities, that we also saw as value. Of course, those are hard to express in a business case and therefore not easy to use to convince the management to invest, which I think is important in the long run.” – team member Ford innovation team

Besides, the business case as currently known and asked for by managers at Ford focuses on a Ford-customer relation. Value co-creation with multiple stakeholders is not really explored, stimulated or paid attention to. This is also in line with the earlier conclusion that the team members are aware of different types of value that could be co-created for and with other stakeholders, but because there is only attention for a one-sided business case, this is not further explored and translated in new opportunities. This quotes illustrates the focus on the short term value in a business case that team members are confronted with:

This quote is omitted due to confidentiality.

People

As described in chapter 3, already during early

analysis rounds it was discovered that there are often struggles when people with different background and roles in an organization needed to be involved or convinced of the value of a project. These struggles were mainly a lot of misunderstanding and disagreement and they could often be traced back to **differences in how those different people perceive value**. Also, people with different roles in the company have different tasks and views to evaluate value from, which also causes that the processes of proposing value, co-creating value and capturing value mean different things to them. Although it is in general good to have people with different backgrounds, perspectives, roles and tasks, it is important that common understanding can be achieved through having a shared language. The ‘People’ row in figure 16 shows the roles of the different people/teams that are at a certain moment in the service innovation process. Besides, it shows through which ‘lens’ they look at the value proposition, value co-creation and value capture of a project.

One of problems that came forward from the interviews with the team members was that it is **hard to convince the middle management of a design thinking project**. They are used to evaluate the value of a project according to how much revenue can be generated through sales. In service design projects the value is often harder to make this concrete, because services are an experience over time. The monetary value is harder to estimate and might come less direct, for example because the service creates intangible value such as a better reputation, which indirectly might lead to more revenue through sales. Also the different task of the middle management plays a role here: they have to make decisions. Therefore they often look more at the value that can be derived for Ford, whereas the innovation team might focus more on how value can be co-created for the customer. This is supported by what was expressed by a team member of the involved Ford team:

“Middle management is used to evaluating traditional technology and product development processes, which have clearly defined steps and milestones, where the outcomes are progressed further which each step. In a design thinking project, anticipated directions might prove to be not desirable by the stakeholders and new, more desirable directions may come up. This asks for more flexibility in how the process is perceived and evaluated.” – team member Ford innovation team

Besides, it is always important to clearly communicate expectations, but in this case even more, because a new type of projects asks for a different evaluation. That this is needed is illustrated by the following quote:

This quote is omitted due to confidentiality.

Also, as already mentioned before throughout the process the value of the project is sometimes discussed, but often not explicitly. The team members mention the value a project creates for Ford and for others more between the lines. This also contributes negatively to the struggle to convince middle management, because if they do not understand the value of a project they will decide to not continue the project. The

fact that the team members are not required to express this in milestones makes them also more reluctant to define the value of the project. Related to this is also the fact that there is no milestone that asks the team members to test the most important assumptions. Now, the value of a project sometimes stays (based on) an assumption.

The following quote shows that the value of a project was discussed a bit everywhere:

This quote is omitted due to confidentiality.

When he was asked how he communicated the complexity of how and for who the project created what value, he answered the following:

This quote is omitted due to confidentiality.

From this can be concluded that the team does not really have tools to explain the different types of value of a project clearly to others.

Also, being explicit about the value of a project, and the involved risk is something that was experienced as difficult:

This quote is omitted due to confidentiality.

However, to get a concept implemented, the team has to convince people who think that Ford can earn money with it later, which is illustrated by the following quote:

“The idea is that these kind of services are not going to be paid for by the customers, so I don’t need to convince the end customer, I need to convince people who think they can earn money with it later on.” – team member Ford innovation team

Differences in how value is perceived and evaluated not only plays a role when convincing middle management. It also influenced the alignment with other teams, such as the product development team. They have cost goals and use those to select or decline features in the car. Although they do consider the revenue it might create, they do not look at the value that is (co-) created for other stakeholders including the customer and what this could positively mean for Ford in the long term.

This quote illustrates the focus on costs at product development:

“Here (points to next phase), we have to look, what can we implement into Ford. And here, it really comes to, what does it cost, what is the real benefit. (...) However, you have to implement all things into the car and then you have to look at what it costs. Is it new hardware or has it new software? The best thing is when it doesn’t cost anything.” – team member Ford innovation team

4.4 Tools for exploring opportunities for value co-creation



Apart from the general service design tools Ford R&A uses, both during the interviews at Ford and VanBerlo tools were discussed that are currently used to explore value propositions, value co-creation and value capture in service design projects. An overview of those tools and their purpose and supporting quotes, plotted against a timeline of a design process can be found in appendix E and F. As could already be concluded from the previous section, at Ford mostly service design tools are used that focus on developing new value propositions towards their customers. Ford lacks the tools to explore value co-creation and value capture. More insights about tools for value co-creation came forward during the interviews with VanBerlo. The tools that came forward as most interesting regarding this topic are shown in table 4.

Two tools that clearly came forward from interviews at VanBerlo as being useful in discussions about value were the Business Model Canvas (BMC) (Osterwalder & Pigneur, 2010) and the Value Proposition Canvas (VPC) (Osterwalder, Pigneur, Bernarda, & Smith, 2014). **The clarity and simplicity of those tools work well and they provide an easy-to-use format that many people can apply** when they need to think about how their organization creates value. However, **both tools are not completely suitable for multi-stakeholder situations**. The tools relate to each other and are both meant for a one-sided organization-customer relationship in which there is no room for a co-productive customer. Also partners are not described as stakeholder with whom you co-create value.

“The BMC helps to talk about relations and look at all segments as a whole. However, on company level I think it is old-fashioned, because it excludes the whole ecosystem around it.” – service designer VanBerlo

Besides, it could be concluded that the BMC is often used either in the analysis phase to analyze the current situation or after the ideation phase, when the idea is developed further. If it is used after ideation, it is mostly used to validate and justify for a commercial organization that money can be made from the concept. It is not used to explore alternative opportunities to co-create and capture value.

“We use the BMC in the further development of ideas, so validation after the first ideation.” – service designer VanBerlo

“I use BMC only when stakeholders want to know about the business side.” – service designer VanBerlo

On the contrary, the VPC is often used during ideation and exploration of new services. However, the VPC has no room to include what value an organization would capture and what value a customer could propose. In other words, it **does not allow to explore value co-creation** even with only the organization-customer relationship it revolved around. Customers are only seen as having pains, gains and jobs to be done, their competences and skills, which are part of his/her context and are used in services to co-produce the service and co-create value are not taken into account.

“The most important thing we used is the VPC to look at the identified stakeholders and find their jobs to be done, pains & gains and what you can do for all of them to come to a successful proposition.” - service designer VanBerlo

Lastly, the BMC only **considers monetary value for the organization**, hence the segment ‘Revenue streams’ and the VPC considers only use value

for the customer described in ‘Gain creators’ and ‘Pain relievers’. There is **no room for other types of value**, such as reputation, which can lead to monetary value on the long term, and social and environmental value, which are especially for NGO’s and cities very important and interesting. If Ford wants to think about the long term and collaborate with those types of organizations, a tool should allow for different types of value.

“It is a shortcoming of the BMC that societal value does not fit in it.” – service designer VanBerlo

Furthermore, tools that were mentioned as suitable for more complex, multi-stakeholder projects were stakeholder maps and value flow maps (Den Ouden & Valkenburg, 2011). A tool to that supports making those maps is the Business model kit of the Board of Innovation. However, **stakeholder maps do not show interaction between stakeholders and do not use any of the dimensions of a business model**. Value flow models do show interaction, but they

do not always support the complex character of services and are a simplified representation of what is exchanged between stakeholders. There is no notion of co-creation of value.

“I often make a stakeholder map with people together. It is not about the value you will create in the end, but about in which field we have to define the value at all.” – service designer VanBerlo

Lastly, it could be concluded that a service blueprint (Shostack, 1982; Bitner, Ostrom & Morgan, 2008) was a useful tool to map both the current and the desired situations of a service. Adding a layer with values was sometimes done to make concrete what value was created at what step. This pays explicit attention to value in the service design process and takes the fact that a service happens over time into account. However, it still **only focuses on the value a service creates for its customer and there is again no room for value co-creation**. Besides, it is not suitable for complex multi-stakeholder services.

Table 4: The mentioned tools for exploring value proposition, value co-creation and value capture

Business model canvas (Osterwalder & Pigneur, 2010)	<i>Purpose:</i> Offering a ‘A shared language for describing, visualizing, assessing, and changing business models’ (Osterwalder & Pigneur, 2010, p. 12)
Value proposition canvas (Osterwalder, Pigneur, Bernarda & Smith, 2014)	<i>Purpose:</i> Come up with new or improve existing value proposition towards customers
Stakeholder maps	<i>Purpose:</i> Representing, charting and/or analysing of the various groups (such as staff, customers, partner organizations, and other stakeholders) involved with a product or service.’ (Stickdorn & Schneider, 2011, p. 150)
Value flow model (Den Ouden & Valkenburg, 2011) + Business model kit (Board of Innovation, n.d.)	<i>Purpose:</i> Describing both tangible and intangible value exchanges
Service blueprint (Shostack, 1982; Bitner, Ostrom, & Morgan, 2008)	<i>Purpose:</i> Describing the front-stage and back-stage of a services

4.5 Conclusion

Because in literature, no concrete insights could be found on how value co-creation and value capture could be explored in the service design process in practice, empirical research was done to get more insight in this practical side. In this conclusion, the sub-questions of the empirical research will be answered.

First, the insights regarding the question *How is the service design process currently executed and experienced at Ford and what is the role of value co-creation?* will be discussed. Ford started to use design thinking as a mindset and method to come up with new value propositions, also including services, but the involved innovation team struggles to really adopt a more service design focused approach that also helps to explore opportunities for value co-creation in a multi-stakeholder context. Based on all insights of the Ford case study, the following main problems could be identified:

1. The **service design process is fuzzy**; there is no clear structure and no clearly defined milestones. This also makes it hard for managers to supervise and evaluate, as they rely often on trusting their employees. To explore more complex opportunities for new services, a structured, but still flexible service design process should form the foundation to build further on.
2. Team members are aware of different types of value and possibilities of co-creating value with and for other stakeholders, but they **struggle to translate these possibilities into concrete opportunities for Ford** because it is often difficult to express and make explicit what value a service design project (co-)creates for Ford.
3. When the team members apply a service design approach, they empathize very well with the user and come up with great solutions for them during the ideation phase (the value proposition). However, **during this exploratory phase there was no focus on how to deliver those solutions and how Ford could derive value from them**; the value co-creation and value capture. Currently, the value capture is often only expressed towards the end of the project, in a business case to justify the project's monetary

value and it might not even have been the most valuable option. However, especially in multi-stakeholder projects it is important to explore the opportunities for co-creating and capturing value with those stakeholders, to come up with new concepts and evaluate which opportunities are most interesting and valuable for Ford as well.

4. The team members **struggle to convince their middle managers and align with other teams**, because they struggle to make explicit what the value of a project is. However, it is important to make sure the value of the project is understood by others, so that it can be implemented further. When the middle managers then evaluate the project, they only judge the direct monetary value from a business case, whereas the real value of a project might be something else that not immediately lead to money. So, **differences in how value is perceived and evaluated can then lead to discontinuation of a project**.
5. Lastly, it could be concluded from the interviews that scoping and **evaluating opportunities is currently sometimes experienced as hard**. This might have to deal with the fuzzy process and lack of concreteness.

The first three problems are most related to value co-creation with multiple stakeholders in the service design process. Therefore, it is chosen to focus on those three problems. The fourth problem is broader than value co-creation in the service design process and has a lot to do with 'talking a different language' and communicating to each other, which could also play a role in other projects where different people collaborate. This project could positively contribute to this, but it is not in the main focus and not realistic to solve this challenge, as also other factors beyond this project play a role. However, it is relevant to keep in mind that making explicit what the value of a project is, might help others to understand it. Furthermore, the fifth point is also important to keep in mind, because if an outcome stimulates more exploration of the value co-creation and value capture of new services, this might also influence the scoping and evaluation of those opportunities. However, this is also not within the scope of this project and therefore there is not specifically focused on this.

Regarding the second sub-question - *How does a service design agency like VanBerlo deal with value co-creation in the service design process?* – it could be concluded that VanBerlo adapts each process to the individual projects. In the case of multi-stakeholder projects this means that they do a lot of collaborative sessions in which they adapt their tools to the session. However, in co-creating value with service design projects in general, a mismatch is seen between qualitative insights service design provides and quantitative insights the manager wants. This plays a role when the project is evaluated by the manager who decided on further implementation. There is no shared language yet that includes both the co-created value for the customer and other stakeholder and the co-created value that the client organization could derive. This relates to the struggle that the innovation team also experiences when their projects are evaluated; they also miss a shared language for exploring and evaluating opportunities that co-create value for and with multiple stakeholders. For VanBerlo this also meant that there should be more alignment with more internal stakeholders at the client organization.

Insights from the interviews about tools, lead to answering the last two sub-questions:

- *What tools and methods are used for exploring opportunities for (co-)creating value with new services and what are their advantages and disadvantages?*
- *How suitable are those in a multi-stakeholder context taking into account multiple types of value?*

It could be concluded that the main tools used in practice to explore how an organization creates value with services were the Business Model Canvas, Value Proposition Canvas and Service Blueprint. However, those tools are not suitable for a multi-stakeholder situation, because they focus on a one-sided organization-customer relationships. They do not explore value co-creation and a situation in which is explored how value could be created and captured by multiple stakeholders. Besides, the Business Model Canvas and Value Proposition Canvas focus only on respectively monetary value for the organization and use value for a customer. Other types of

value that could later lead to monetary value, such as brand reputation and a good relationship, or that are relevant for stakeholders that you might need to collaborate with, such as economical value for cities and society, do not fit those tools. There are also existing tools that do take a complex, multi-stakeholder context into account and especially value flow maps also take multiple types of value into account. However, those tools do not focus on answering how this value is co-created and they do not support exploring this. They mostly are suitable for representing the relation between multiple stakeholders and what is exchanged between them. Furthermore, even combining the mentioned existing tools does not answer the problem this research aims to answer.

In conclusion, this means that also in practice there are no tools that both support taking into account a multi-stakeholder situation in which multiple types of value can play a role, and that support exploring opportunities for co-creating value with new services with those stakeholders.



5

Cycle 2: Tool development **METHOD**

The second cycle of this project revolved around developing a tool that translates the insights from the empirical research in practice and that helps to explore opportunities for co-creating value for multiple stakeholders with new services in the service design process. A research through design approach was taken to iteratively develop this tool for the Ford R&A team.

5.1 Research through design

Although - just like service design – design research has many definitions, the aspect that they have in common seems to be the application of design thinking in academic research (Savic & Huang, 2014). In 1993, Frayling categorized design research into research into, research through and research for (art and) design (Frayling, 1993). My second research cycle consisted of research through design, in which design activities were performed in the process of generating knowledge (Stappers & Giaccardi, 2017). Often, this design activity is the development of a prototype that together with critical thinking plays a role in the generation of knowledge.

In this second research part, design activities played a central role to find an answer to the

research question: *‘How can opportunities for co-creating value for multiple stakeholders with new services be explored in the service design process?’*. In several collaborative sessions and co-reflective discussions both known tools and new prototypes of tools and models were tested in the search for a tool that simulates exploration of opportunities for creating and capturing value with new services. Applicability in a multi-stakeholder context was one of the main criteria. Through those sessions and discussions with service designers and Ford employees, new insights were collected that served as input for changes, adaptations or a new iteration. These interactions with those practitioners not only resulted in new input, but also served as a way to validate (parts of) the outcome.

5.2 Process of tool development

The results of the first cycle of research were used as input for this second cycle of this project, that took an iterative research through design approach to develop a tool. This tool development cycle consisted again of 3 iterative cycles, which are represented in figure 17. As a result of this, value co-creation building blocks were developed for Ford. Those building blocks help to create a value co-creation network.

Cycle 1

Based on the insight that there is **currently no tool that is used to explore value co-creation and value capture with new services**. A test session (see Appendix G for the session plan) was held at Ford in which an existing service design tool

was adapted and tested. Besides, the interview insights were checked with the participants during this meeting. The goal of the test session was to create awareness about value co-creation and to observe how a tool would be used by the participants on their own and if it succeeded in putting extra attention to value (co-)creation. It was chosen to let the participants make a service blueprint with an extra value layer of one of their projects, because from the empirical research could be concluded that this was a useful tool to map both the current and the desired situation of a service, while paying explicit attention to the value that would be created.

This test session and the reflection with the

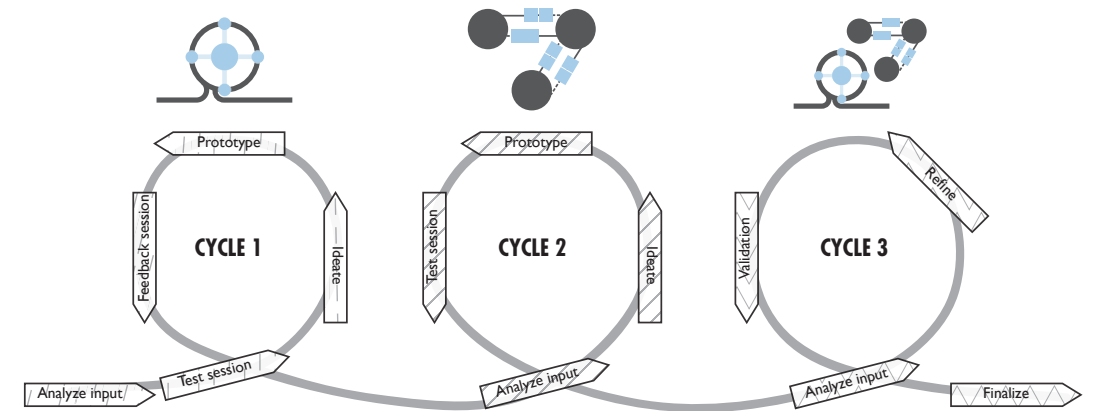


Figure 17: Process of tool development

participants was filmed (see figure 18) and observed, so that insights could be analyzed afterwards. Several conclusions could be drawn from that. First of all, a **service blueprint was not really suitable for the multi-stakeholder project that was discussed**. During the feedback the participants expressed that they would prefer a separate step to identify the stakeholders that play a role, which is not the case in a service blueprint. This insight was later translated in the new tool. Secondly, **the step to add a layer with the value that the service co-created was not very intuitive for the participants**. Values are not necessarily captured at a specific moment of the service. Thirdly, **a lot of very specific questions**

were asked and more examples and explanations were needed. Without facilitation, it was very hard for the team to learn a new, complex tool. However, the collaborative session did help to get people on the same page, because through the discussions unclarity came on the table. It could be concluded that a new tool should be clearly explained with a lot of information and tips available. Therefore, it was chosen to focus on one tool for exploring value co-creation that would have a rich explanation, instead of a kind of ‘menu card’ with multiple tools that they could choose and navigate themselves.

Based on another insight from the empirical research, namely that **the service design process at Ford R&A is a bit fuzzy, a new model for a service design process was developed**, inspired by Ford’s existing design thinking model. This process would provide a basic structure for the service design process. Furthermore, it would balance the three dimensions of a business model: value proposition, value co-creation and value capture, because from the theoretical background could be concluded that those could provide a good framework for designing new services that are relevant and valuable in a multi-stakeholder context. Part of this process model were checkpoints that would give guidance during the process. A first ‘prototype’ (see figure 19) of the model, including a few example checkpoints,



Figure 18: Still from the video of the team members at Ford during the test session

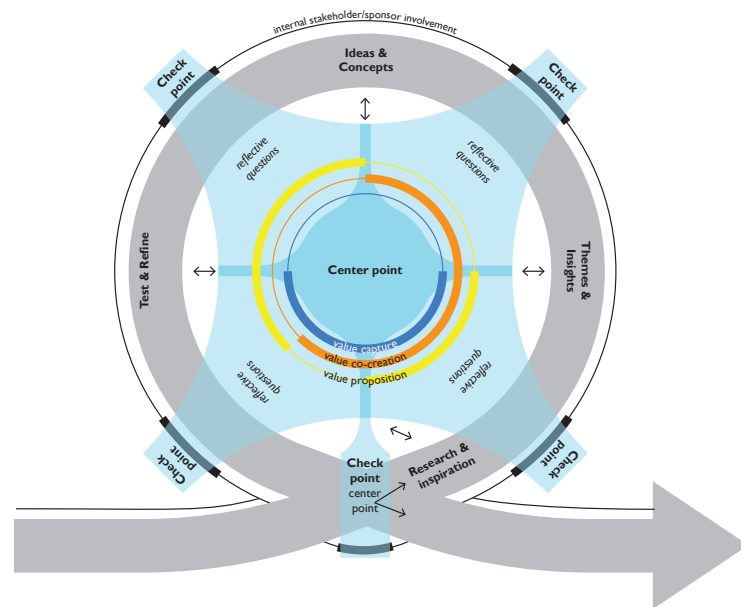


Figure 19: Version 1 of improved service design process model that was presentation at Ford

was made and discussed with supervisors, a service design expert, my contact person at Ford. Furthermore, feedback from the Ford team was gathered during a co-reflective session, which served as input for cycle 2.

Cycle 2

From the feedback of the Ford team became clear that they were quite confused about the new process model. What confused them most was the fact that the model had some overlap with the Ford design thinking model they know, such as a few of the design thinking phases, but that there were also differences and above all a lot of new information. The terms value proposition, value co-creation, value capture were also experienced as very theoretical and the colored circles that were meant to balance the attention to those dimensions did not give them any practical help. Based on this, it was decided to use the Ford design thinking model really as a foundation for the improved service design model, with the new structure as an overlay. It was also decided to remove the three colored circles for value proposition, value co-creation, value capture, because they did not contribute to exploring value co-creation in

practice. Furthermore, the earlier comment about identifying stakeholders was taken into account by making a separate checkpoint specifically for identifying the ecosystem in which the project would play a role. Regarding the first checkpoint examples came forwards that the team members wanted to have concrete tools to explore multiple variants of how multiple stakeholders could collaborate with a service or of how Ford could derive value from a service that is co-created with other stakeholders. It was also stressed that this would preferably be done in a structured way.

Based on these insights, a value co-creation canvas was developed that would play a role in each phase of the service design model and therefore provide more structure. Each checkpoint would elaborate on a part of the canvas and all checkpoints together would then fill the canvas and form the central check point. Insights from the empirical research about the Business Model Canvas (BMC) and Value Proposition Canvas (VPC) were taken as starting point for the canvas to build on the things that work well and not reinvent the wheel. About the VPC could be concluded that connecting a value proposition to concrete pains and gains of

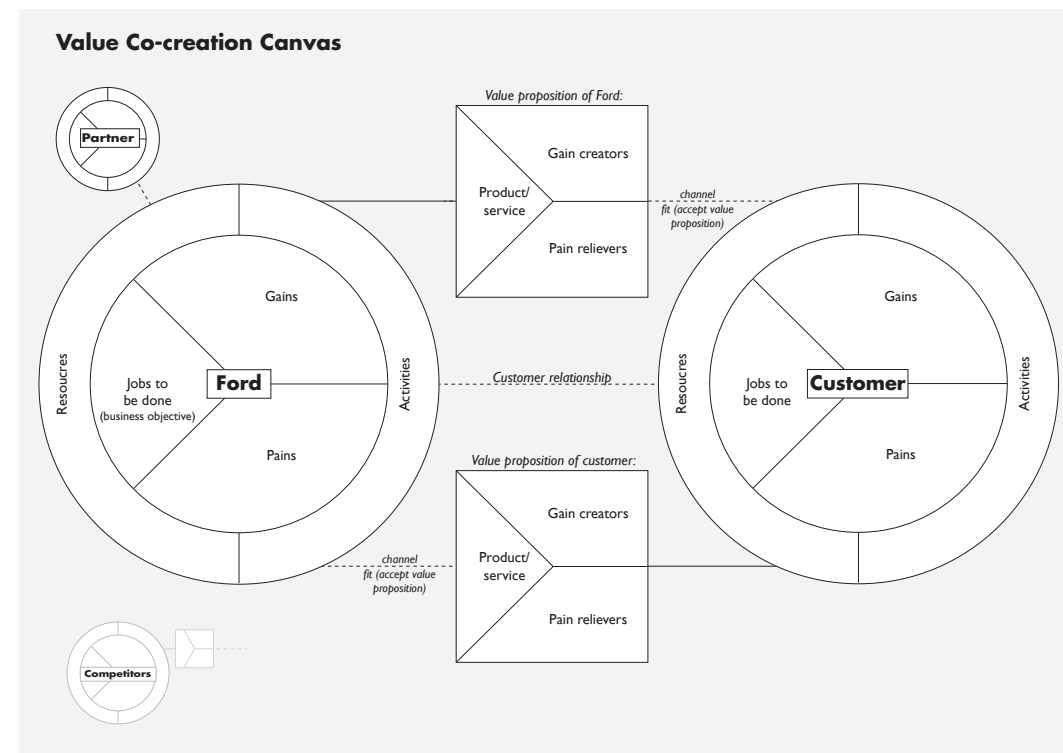


Figure 20: The value co-creation canvas

a customer works well to come up with ideas, which led to also making such a connection in the new canvas. However, these connections are taken broader than one value proposition to a customer, because of the mindset of value co-creation in services. Based on the insights about the BMC was chosen to include the resources and activities in a stakeholder profile, because these are described as required for a value proposition. However, the BMC concepts cost structure and revenue stream are for example not included, because they only focus on monetary and a one-sided relationship of capturing value. Instead of this, the new canvas uses connected value propositions to express how stakeholders co-create value together, by proposing value propositions to each other, that lead to value capture when those are accepted.

This canvas was prototyped (see figure 20) and tested during a 2,5 hour test session (see Appendix H for the session plan) at Ford with

the same participants as the previous session and an additional service design expert who was present during the first half of the session. Afterwards, there was time for feedback. The session was again filmed and observed and the of this served as input for cycle 3.

Cycle 3

From the first session in which the value co-creation canvas was tested, the following insights could be concluded:

- **Going through three phases in one session is a bit too much.** One of the participants gave the feedback that it is important to keep in mind and make clear to the participants that working on the value co-creation canvas would be part of a longer process that happens over the time of a whole project. The session was in that sense really a pressure cooker, in which everything would need to happen a lot quicker. This influenced

the results and experience of the people using the canvas.

- The difference between pains and gains and the difference between jobs to be done and activities was not clear for the participants.
- The fact that the participants had to distinguish between validated insights and assumptions stimulated discussions and created more awareness about the assumptions that were still present in the concept. There were also differences in how much some of the team members knew about what was tested or not, so these discussions also helped to get on the same page again.
- After the presentation and explanation of the process and the value co-creation canvas the team members had still no idea what they had to do, which they also expressed in the reflection moment afterwards. However, when they started doing, it became clear and they actually found the canvas much easier to use, which was expressed by one of the team members with the following sentence “It is hard to get started, but easy to do once you know it.”. From this was concluded that the explanation and communication needs to be improved, especially by making the steps that need to be taken more concrete. It was for example now not clear in what order the different boxes would need to be filled, which led to some confusion.
- As suggested by my contact at Ford, the project that the session revolved around was an existing project that all team members knew quite well. However, this project is already quite far developed: several concept tests had been done and a prototype is currently extensively tested during a pilot. This really influenced the session and the participants’ understanding of the tool. It was a bit of a reversed process now, because the starting point was already a concept, instead of for example a new, exploratory ‘How might we...?’-question. On the one

hand, it was good to make the insights and the planned proposed, co-created and captured value explicit. On the other hand, it was confusing for them to generate new ideas and to shift between the current concept and what else it could be. Because of this, it could not really be tested how the canvas would help to explore ideas for new services that co-create value with multiple stakeholders.

- During the reflection afterwards, one of the team members expressed that thinking about how certain pains are solved helps to make the benefits of the service explicit.
- One of the team members had expected that the session and canvas would help to quantify value, which was not the goal. Expectations about what the canvas could be used for, should be better managed.

These insights and discussions with my graduation supervisors and my contacts at Ford and VanBerlo led to a new iteration (see figure 21). The visual representation of the tool was really improved to make the tool more intuitive to understand, interesting and attractive. This also resulted in the until now called ‘stakeholder circle’ was split into two parts; the stakeholder profile and the stakeholder luggage. This was done to really put focus on the activities and resources that enable the value proposition, because during the previous session the justified comment was made that you could now just write down all stakeholders that would not be relevant. Besides, instead of the word canvas, the new words ‘value co-creation building blocks’ and ‘value co-creation network’ were introduced, because they fit the character of the tool, that is elaborated and build throughout the whole services design process, better. Furthermore, new terms were chosen to express the different elements of the building blocks, because the words ‘pains’ and ‘gains’ were confusing for a lot of people and also reminded too much of a one-sided, not co-productive organization-customer

relationship. Lastly, based on the feedback about unclarity about the steps and how to use the tool, a guide was designed that would explain the process and building blocks to the team members and guide them through the steps in the process.

A last session at Ford was planned to test this version, so that the people at Ford R&A could experience it and I could see what worked and what did not. It was chosen to specifically focus on the phase of generating ideas, because the research question that this graduation project aims to answer with this outcome has an exploratory nature. Besides, during the last session it turned out that going through 3 phases that would normally stretch over a couple of weeks, was too much for one session of 2,5 hours and the idea generation phase was not really tested, because the session was applied to a project that already had a chosen concept.

However, because of unforeseen circumstances

two team members unfortunately had to leave the session quite soon and the prepared session had to be adapted a bit. Together with my contact person at Ford we went through the steps that were prepared for this session, we reflected on those steps together and had a look on the guide that was developed to explain how the value co-creation building blocks would be used. This still led to the validation of some parts of the tool and some feedback for a few last refinements.

Besides the feedback from the last session at Ford, I discussed the value co-creation building blocks with some ‘critical friends’ (Ravitch & Mittenfeller, 2015) and I reflected a bit more on the graphic representation of the building blocks and the terms used in it. This together led to refining the value co-creation building blocks and network one more time. The result of this can be found in the next chapter.

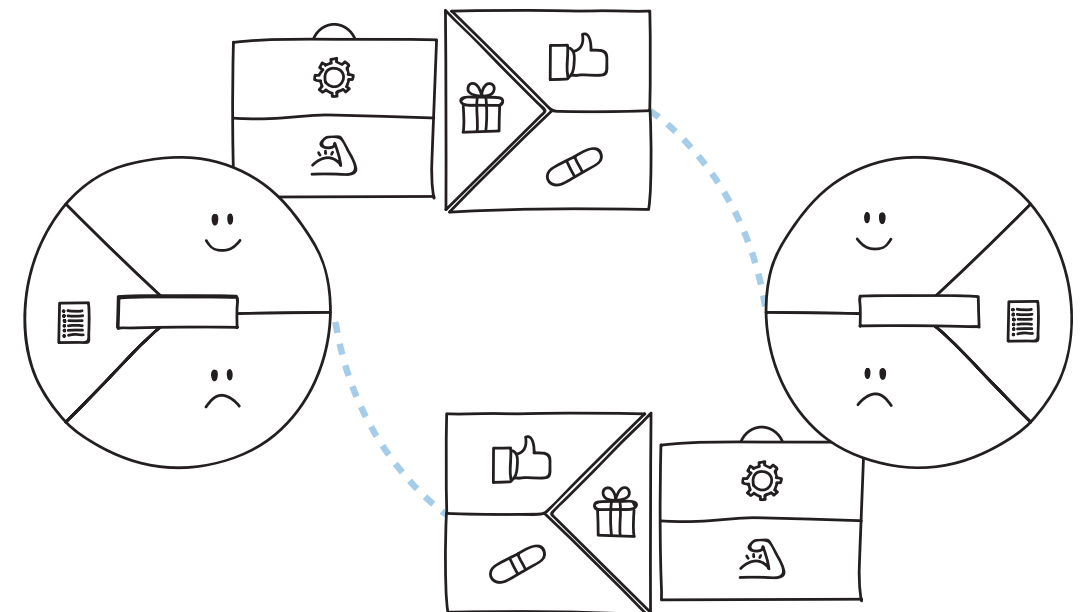
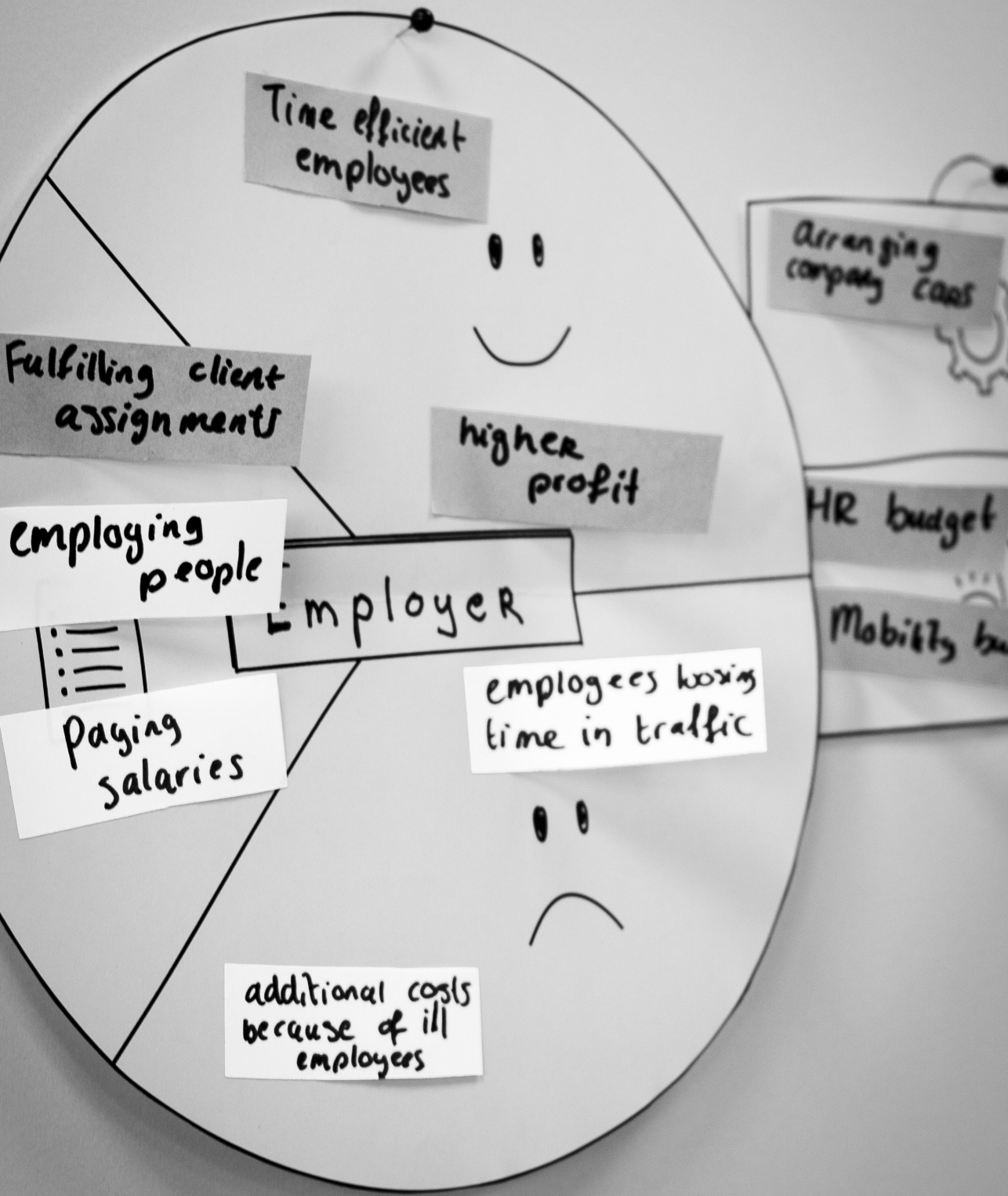


Figure 21: New iteration that was tested and discussed at the last Ford visit



6

Cycle 2: Tool development **RESULTS**

This chapter describes the results of the tool development cycle. The developed tool consists of value co-creation building blocks that build a value co-creation network. It is built on both the conclusions from theory, as described in chapter 2 and the results of the empirical research, as described in chapter 4.

6.1 A more structured service design process at Ford



Based on the insight that the current process to design new services at Ford R&A is by the team members experienced as fuzzy, an **improved service design process within the bigger service innovation process was developed** based on Ford's existing design thinking model, as shown in figure 15. The general phases of this model suit a service design process and are already known to the people who would eventually work with this process, therefore they form the basis in this service design process model (see figure 22). However, the process of developing a service starts already before the research kicks off and goes beyond the phases of this model. Therefore, a timeline with more phases is added.

Projects at Ford R&A can have different starting

points. These starting points can come from different projects, other teams or earlier research. They could be categorized in the following three core areas, as also shown in figure 22:

- Start from an insight on a customer need (people)
- Start from a new technology application for which a use case is being sought (technology)
- Start from a business objective, such as entering a new market (business)

When there is a starting point, it is important to 'frame the central question', as also expressed in the middle of the Ford Design Thinking model. It contains the central topic of the project that gives guidance throughout the project. Framing

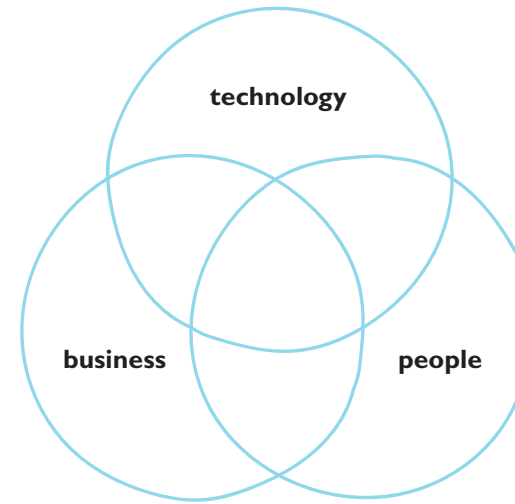


Figure 23: The project can start from different core areas

the central question is done during the first phase of the project, when the project is planned and prepared, even before the research is kicked off.

Besides, a few weeks after the kick-off of my graduation project, a new Ford organization was announced: D-Ford. This organization has as goal to centralize, structure and organize design thinking and human-centered design within Ford. In project type that is now part of D-Ford, a new model (not shown due to confidentiality) is used to describe a project process that incorporates design thinking principles. An important part of this model is convening internal sponsors of the project, because of the difficulty to get ideas through the Ford system, as also is shown by the conclusion of the empirical research that it is difficult to convince managers. It focuses on getting both people with decision power and people who can operationalize early on board in the process. This principle would be very useful to also apply at the service design processes at Ford R&A, because from the research was concluded that it can be difficult to convince managers and align with other teams. Therefore, **identifying and gathering experts & sponsors** is also included in the preparatory phase before starting the actual design process cycle.

In general, **the goal of the developed process model is to have an overview of the process and to provide a foundation for exploring new services**. It is also meant to still enable iteration and experimentation by evaluating after each loop if you need another loop or if you continue towards further development with the involvement of a development and implementation team. Also, it is not always needed to go through each phase again, when you make another design thinking loop during your process. The model is designed to allow customization of the process and adaptation to the needs and characteristics of a project and a team member's expertise.

To also contribute to more structure in the service design process and to make it easier to oversee a service design project and the results of each phase, there will be a **'checkpoint'** after each phase. This is not a stage gate, but more meant as a checklist for the team members themselves to see where they are in the process and what new insights the past activities have given them. It consists of the results of that phase that are summarized and made explicit. Besides, it helps to reflect on the goal of that phase with a set of reflective questions.

The improved model provides more structure for the team members during the service design process. This is a foundation for also solving the two other problems that were identified during the empirical research and that the tool development phase planned to solve: the team members struggle to translate possibilities for multi-stakeholder services into concrete opportunities that make explicit how they are valuable for Ford and the insight that they mainly focus on exploring the value proposition and not on exploring the value co-creation and value capture. Those two struggles more specifically relate to the research question and hinder exploring opportunities for new services that co-create value with and for multiple stakeholders,

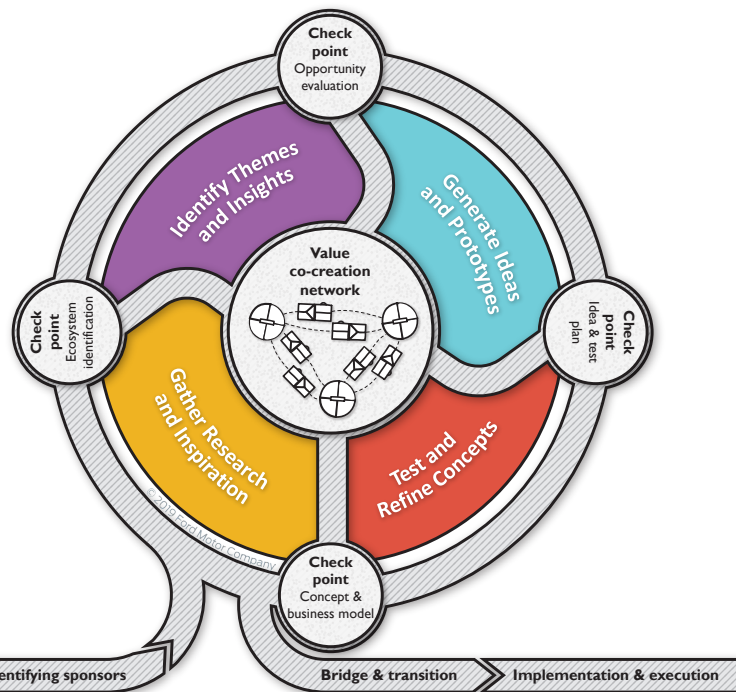


Figure 22. Improvements in Ford's design process to enable exploration of opportunities for value co-creation and value capture with new services

including Ford. To also focus on the value co-creation with multiple stakeholders during the exploratory phase of the service design process, **value co-creation building blocks** were developed. Those building blocks together form eventually a **value co-creation network** that expresses for a concrete service concept what (planned) value is proposed and captured by whom and how this value is planned to be co-created for Ford and the other involved stakeholders. In this way the value that a concept co-creates for different stakeholders can be made explicit. The value co-creation building blocks and network will be explained in more detail in the next section.

After each cycle of the design process, the last checkpoint 'Concept and business model' could be used to evaluate the project. It could be decided that the project would be implemented

and further developed by a development team, that more research, testing or ideation is needed and another cycle would be made or that the project is not continued for now. When the project is ready to be implemented by another team, the new process model suggests a phase of bridging and transitioning. This is done based on the insights from the interviews that this handover moment is currently not well-defined and that it is sometimes difficult to convince others of the value of and align with other teams. However, defining this transition moment was not within the scope of the project and therefore not further elaborated on. After this transition moment, the service concept would be implemented and eventually executed. Only during execution each stakeholder can determine what realized value they could capture.

6.2 Co-creating value with a new service with multiple stakeholders



From the theoretical background could be concluded that the three dimensions of a business model, value proposition, value co-creation and value capture, could provide a good framework to explore opportunities for co-creating value for multiple stakeholders with new services. However, from the empirical research could be concluded that in practice there are no tools that both support taking into account a multi-stakeholder situation in which multiple types of value can play a role, and that support exploring opportunities for co-creating value with new services with those stakeholders. Therefore, value co-creation building blocks (see figure 24) and a value co-creation network (see figure 25) were developed to provide this tool.

There are three types of value co-creation building blocks:

Stakeholder profile

The stakeholder profile describes and summarizes the project team's **understanding of each stakeholder that plays or could play a role** in addressing the central question. It contains information about this **stakeholder's goal and assets**. What does this organization or person want to achieve? Examples of this could range from business objectives, such as addressing a new market, to things that customers are trying to get done, such as arriving at work on time. And what assets does this stakeholder have to achieve that? Assets could be competences a



Figure 24: The three value co-creation building blocks

stakeholder has, activities that are performed or resources that can be accessed. Examples of this could range from having the capacity, staff and resources to manufacture cars, to having a driver's license and having access to a lease car. Furthermore, for each stakeholder should be researched what could possibly provide a boost (such as a good brand image or work pleasure) or a barrier (such as high customer acquisition costs or the risk of traffic jams) for this stakeholder to achieve its goals.

Value proposition

Value propositions describe **the products and services a stakeholder offers and how those create value** for the stakeholder that is addressed with this offer. It can contain both tangible products such as cars, intangible services such as assistance or a combination of both, where you for example get access to physical products through using an app. **How these products and services create value is expressed in boost enablers and barrier breakers**. Boost enablers describe how those products and services concretely boost the targeted stakeholder in achieving its goals (such as enhancing work pleasure by taking over annoying tasks or more customer engagement because of an established user community) and the barrier breakers describe how those products and services concretely take away barriers (such as covering costs by paying a usage fee).

Stakeholder luggage

The stakeholder luggage describes **what specific assets of a stakeholder are used to enable a certain value proposition**. Whereas the assets that are described in the stakeholder profile are generic for the stakeholder, the ones described in the stakeholder luggage are specific for a value proposition. A stakeholder can offer different value propositions to multiple stakeholders within the same value co-creation network. A car sharing platform can for example offer a client base to the people who want to share their car and they can offer access to shared cars to the people who search for a car they can rent. The described assets can consist of competences this stakeholder has, activities they perform and resources possesses or has access to.

These building blocks can build a value co-creation network. In its most simple form, the value co-creation network consists of an organization and a customer that are each described in a stakeholder profile. Those **two stakeholders are connected through two value propositions that are enabled by each stakeholder's luggage**; the competences, activities and resources used to offer this value proposition. The building blocks play a role in each phase of the earlier described service design model and the network is elaborated and updated after each checkpoint. The building blocks will be filled, elaborated and iterated throughout

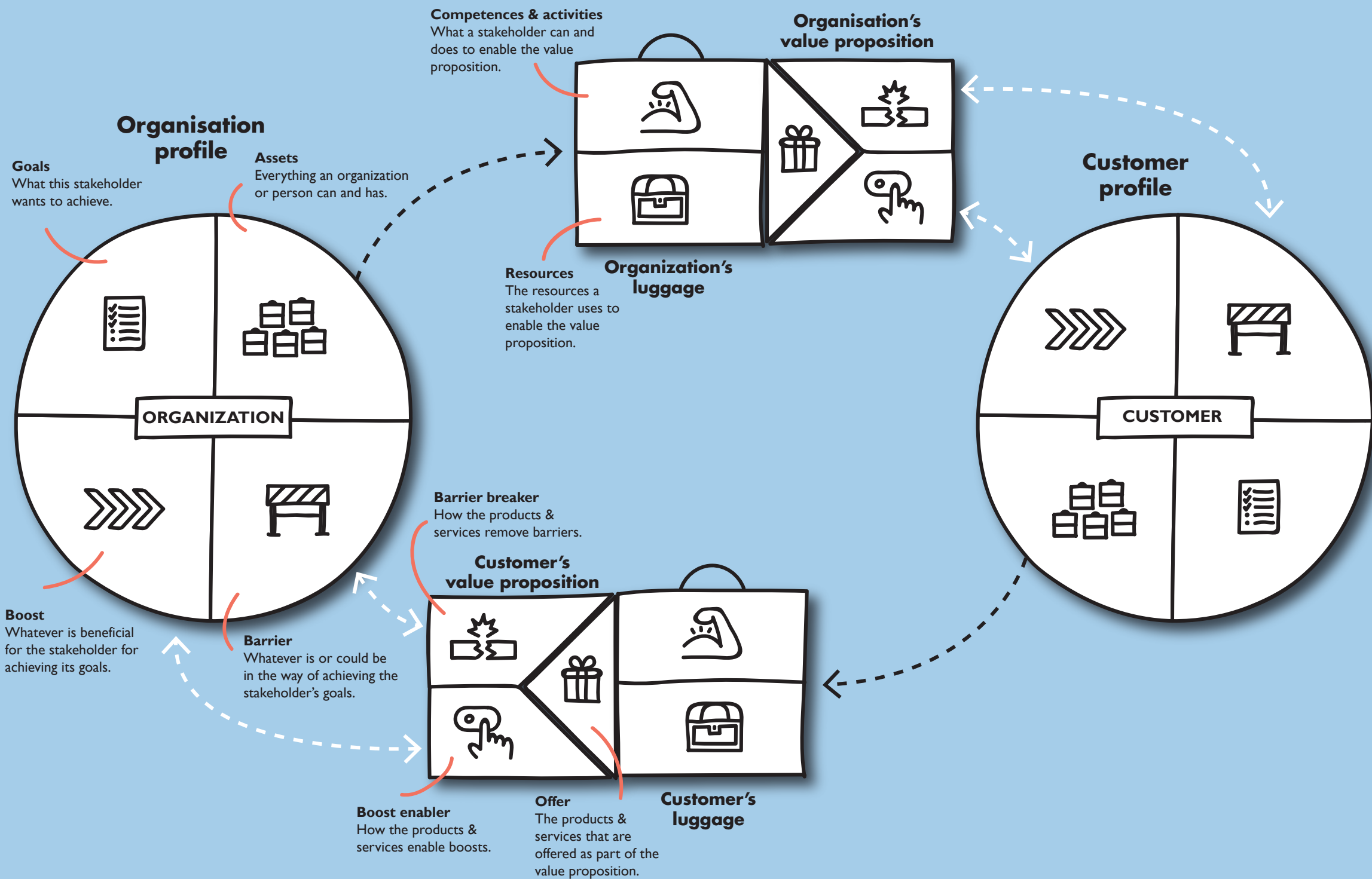


Figure 25. Value co-creation network

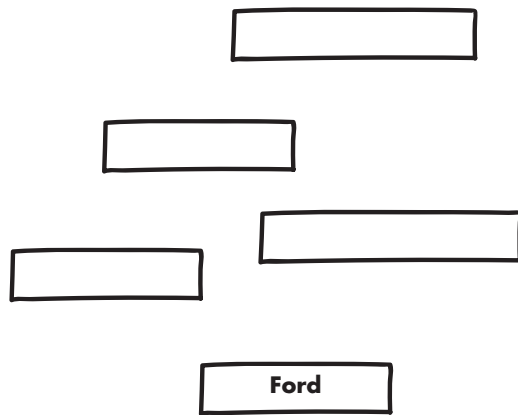


Figure 26. Example of identified stakeholders [confidential]

the process and after each phase the value co-creation network should be updated. Therefore, the value co-creation network is displayed in the middle of the process model (see figure 22). It plays a role during each phase of the process.

The first phase of the service design process is 'Gather research and inspiration'. In this phase, the team gathers data to understand the context of the central question of the project. Activities that fit this phase are doing market research, interviews, customer shadowing, etc. During this phase an initial value co-creation network could be made to map the assumptions that the team has around the central question of the project. At the end of this phase, at the checkpoint 'Ecosystem identification', the stakeholders of the ecosystem should be identified that could potentially play a role in the new service (see figure 26 for an example). The word ecosystem refers to the existing context of the central question and the stakeholders that either directly or indirectly play a role in this. This could be customer groups (either B2C or B2B), commercial organizations (such as competitors, suppliers or other companies that fulfill a different role in the ecosystem), cities, NGO's etc.

In the next phase, 'Identify themes and insights',

the results of the research are analyzed to extract themes and insights. Activities that fit this phase are making sense of all gathered data by making personas, customer journey maps, etc. During this phase stakeholder profiles could be used to organize and structure all gathered data and subsequently summarize the insights. The profiles could be made by printing the formats (see Appendix I) and filling them with sticky notes on which insights are written down regarding the stakeholder's goals, assets, boosts and barriers. While doing so, the team members should use different colored sticky notes to distinguish between insights that are validated or that are still assumptions. It is important to be aware of the assumptions, because it came forward from the empirical research that those are critical for the success or failure of a business model later on. When there are too many insights, they can be ranked according to importance to keep focus on the central question.

After this phase, it is important to investigate where opportunities for new services emerge and to select the most promising ones. The criteria for this differ per project and should be determined first. To help during the evaluation of opportunities, the filled-in stakeholder profiles could be used. This can for example be done by looking at which stakeholders are interesting, because of the assets they have that are interesting for Ford, such as a customer group that has money to spend on mobility solutions. Also, certain goals of a stakeholder might be a reason to make the stakeholder interesting to collaborate with, for example because there is overlap with Ford's goals, which would be the case as when both Ford and another company would have the goal to reduce the amount of time people spend in traffic jams. Lastly, the boosts and barriers might provide opportunities, for example because Ford could potentially enable these boosts or break those barriers and in that way create value for that stakeholder. At the end of this phase, the checkpoint 'Opportunity

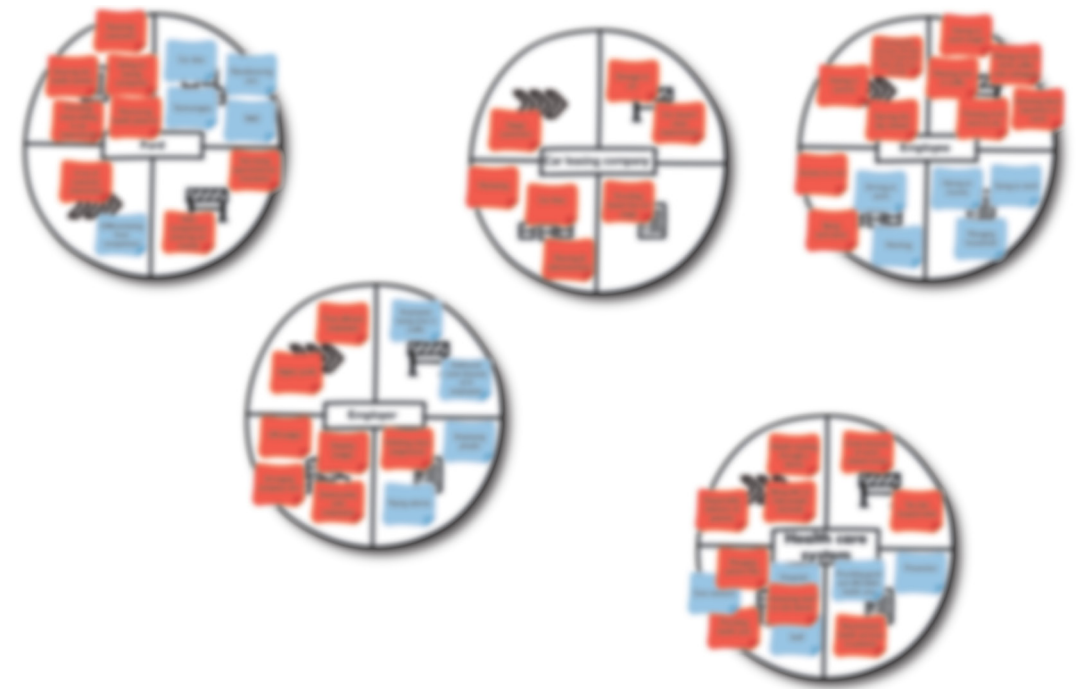


Figure 27. Fictional example of selected stakeholders [confidential]

evaluation' results in a selection of stakeholders that are used during the next, exploratory phase (see figure 27 for an example).

During the phase, 'Generating ideas and prototypes', the selected opportunities are further explored. The value co-creation building blocks aim to help to generate ideas for new services that are co-created by and valuable for multiple stakeholders. The starting point is provided by the selected stakeholder profiles that are put on a wall or whiteboard. Then, the team members can start generating ideas based on the earlier discovered opportunities, such as interesting goals, assets, boosts and barriers of certain stakeholders. They can write them down on sticky notes and stick them close to the opportunity they relate to, on a third color of sticky notes. The next step would be to make connections between ideas that relate to each other and to link ideas to stakeholders that either could (partially) propose those or stakeholders that could capture value from those. In this way, connections are made between stakeholders that

could co-create value.

After this, ideas are evaluated and the not selected ones could go in a 'parking lot' for now, to have focus on the most promising ones but not throw away the others. For each connection that is made, two value proposition squares are placed between the two connected stakeholders; they co-create value by finding a fit between each other's value proposition. This match between all stakeholders that are involved in co-creation of value with a new service, is what is searched for. Team members can use the squares to think about the products and services that are offered and how those create value by enabling boosts and breaking barriers. The stakeholder luggage helps to define how these value propositions are enabled. This is especially relevant for service, as a value proposition might be a service that allows access to certain competences and resources, so those are closely connected to the value proposition. Here, it is important to stay in the mindset of co-creation that is relevant for services. During the test sessions at Ford,



Figure 28. Fictional example of value co-creation network [confidential]

it turned out that it is sometimes hard to think about the value proposition of a customer to an organization. However, customers also have to co-produce to co-create value, for example by applying their competences. Another value proposition of a customer could be that it help to improve the brand's reputation through worth-of-mouth, which is very valuable for an organization. However, there can also be customers that are not so productive and that only contribute through paying money for a service. The value co-creation building blocks help to explore and make explicit what value each stakeholder proposes and could derive, to come to a network that is balanced and is valuable for each stakeholder. Furthermore, it might be helpful to think of whole customer segments that could provide a customer base. Without this, a service could not be provided and no value would be co-created.

When a first version of a value co-creation network around a new services is established

(see figure 28), it is time to prototype (parts of) this service, so that tests can be done in the next phase to reduce assumptions and increase certainty about the value that is planned for. This phases ends with the checkpoint 'Idea and test plan' and the value co-creation network could be used to explain the idea. Furthermore, it could be used to make a plan for the phase of testing, because the places with still a lot of assumptions indicate were tests are needed for validation. Those assumptions could be ranked to find the ones that are most risky and crucial and look for ways to test and validate these.

During the last phase, 'Test and refine concepts', the assumptions in the value co-creation network should be tested, so that there is less and less uncertainty in the service concept and the value it plans to co-create for each stakeholder. During and after the phase of testing, you get new insights that might lead to changes in your model and it should lead to a decreasing amount of assumptions. The value co-creation network

could be used to zoom in on specific parts and to extend it with more details. Furthermore, one should zoom out again to think about the bigger picture (see figure 29). In this way, the service concept is more and more refined. Details that could be thought about are for example:

- Through which channel do stakeholders reach each other?
- What kind of relationship are aimed to be achieved between stakeholders?
- Are there any supply partners needed?
- What value proposition do potential competitors offer?
- How will value from the accepted value proposition of a stakeholder be captured? In the case of a commercial organization that captures revenue, this could be done by choosing a revenue model, for example by using the revenue model flowchart of Board of Innovation (Board of Innovation, n.d.). However, also about other types

of value could be thought to determine how they could be captured, such as use values (for example convenience and well-being), societal value (for example broader accessible mobility), ecological value (for example less emissions) or professional value (for example brand reputation). Maybe those values could even lead to other types of value in the long term.

- How could the expected value captured be determined and evaluated?

This phase and thereby a cycle of the design process end with the checkpoint 'Concept and business model', which describes the new service concept and the business model behind it, by showing how value is proposed, co-created and captured by multiple stakeholders.

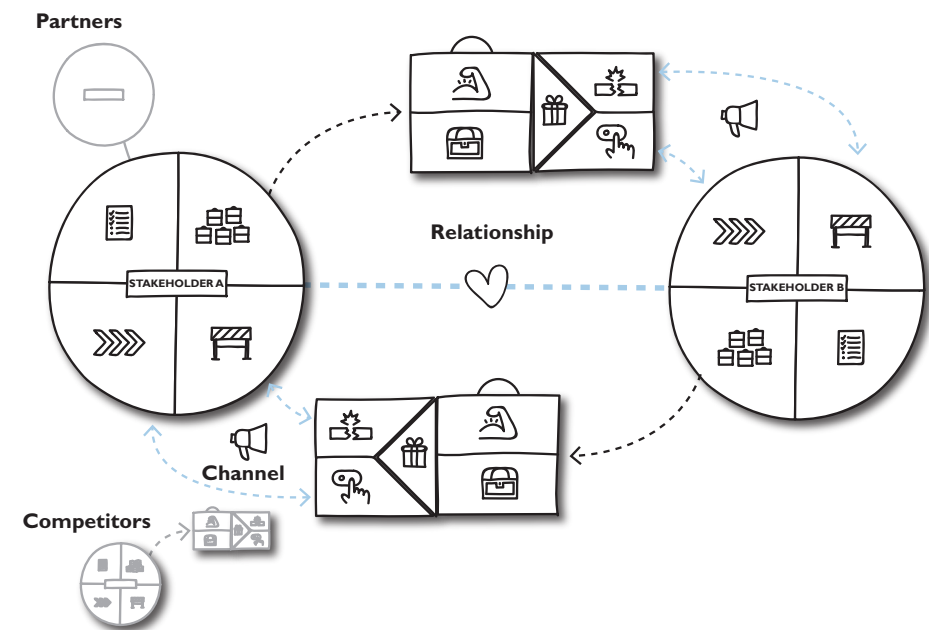


Figure 29. Value co-creation network with more details

6.3 Guidance in using the process and tools

In the previous section, the improved service design process for the Ford R&A team is discussed as well as the three value co-creation building blocks and how they are used in the process to build a value co-creation network. However, from the first test session at Ford it became clear that the process and the formats were very complex to understand and it was especially unclear what the tool could be used for and how it would practically work. To improve on this and **communicate this better, an introduction video and practical guide were developed.**

The introduction video explains in three minutes in which situations the value co-creation building

blocks and network are relevant and what struggles it might solve. Furthermore, it explains the key elements. The video can be found through the following link: <https://youtu.be/Lzr1n5G7u4g>. The video link is also included in the practical guide.

The guide (see Appendix K) also contains information about when to use the proposed service design process, value co-creation building blocks and value co-creation network and how it would help the team members or other users. This contributes to better managing the expectations about the tool, which was mentioned as something that could be improved during the second last session at Ford.

03 GENERATE SERVICE IDEAS IN NETWORK OF STAKEHOLDERS

Goal: Translating opportunities in a concept that co-creates value for each stakeholder

Design process phase:
Gather research and inspiration

What you need:

- Markers
- Filled Stakeholder profile circles
- Filled Stakeholder luggage
- Value proposition squares (printed)
- Small post-it's in two colours
- Board to put everything on
- Yarn/string or tape to make connections

Tools and activities that might help (during ideation & evaluation of ideas):

- [How-might-we questions](#)
- [Brainwriting](#)
- [Analogies as inspiration](#)
- [Brainstorm rules](#)
- [Decision matrix](#)
- [Dot voting](#)
- [Idea bundling](#)
- [Roleplaying](#)

Steps:

- ★ First, individually generate a lot of ideas for services that could enable or break the identified boosts and barriers. You can think of complete services or smaller ideas that respond to only 1 boost or barrier. Set a time. Use the same colour post-it's as for the assumptions, because you have not validated your ideas yet.
- ★ Discuss/present/read all ideas. At least make sure, you know them.
- ★ Evaluate the ideas and form a top 3. Write the selected ideas on the service offering triangles of the value proposition squares.
- ★ For each idea of a service offering of the top 3, fill in the **boost enablers and barrier breakers**.
- ★ Choose or combine until you come to one main idea that you want to test. For that idea, also fill in the stakeholder luggage that enables it.
- ★ Now, think about how this idea could co-create value for your own organization as well. Define a **value proposition** that the other stakeholder might have for you. Also think about how its assets enable this value proposition and fill the **stakeholder luggage**. Adapt the concept and both value propositions in such a way that value is co-created for both stakeholders.
- ★ Search for a fit between a value proposition you offer to the other stakeholder that relate to its boosts and barriers and a value proposition you want to accept from that stakeholder, that relate to your own boosts and barriers. In that way, you search for a situation in which you plan to co-create value.

Figure 30. Example page from the guide with a step-by-step description of one of the phases

CHECKPOINT IDEA & TEST PLAN

Goal:
Making the idea concrete. Identifying risky assumptions and planning how you can test them, so that uncertainty can be reduced.

Example questions to ask yourself:

- Which assumptions should be true to make the service concept work?
- Which assumptions are most risky?
- How can you test those assumptions?
- What is the core of the idea?
- What value will be co-created by the service concept, that is bigger than the gains of one stakeholder?
- What value propositions will you accept, in other words what value can your organization derive?
- How can your organization derive value from this service concept? How can you validate that?
- What specific advantages and capabilities can you leverage?
- How can success be measured?

Result:

- Idea and prototype
- Test plan

Tip:
Use the following formats to express your, a stakeholder's or the whole systems' value proposition.

For that want to ,
 offers that and
 (by using our).

The total network can also co-create more value than the total value of each individual stakeholder. The total network could for example co-create value that contributes positively to society. However, it can also be the other way around, that the total network of stakeholders derive more value than could be co-created. This would be the case if the network makes a negative on our planet. Take some time to reflect on this.

Because , and interact and collaborate, we are able to co-create

Figure 31. Example page from the guide with a checkpoint

The main goal of the guide is to help the team members through the service design process that aims to design services in a multi-stakeholder context. It contains a step-by-step description of how the value co-creation building blocks and network could be used in each phase of the service design process, see figure 30 for an example. Additionally, practical information about what the team members need and suggestions on what general service design tools and activities could be used in each phase is included (see figure 30). However, employees are free to choose the tools they prefer, to maintain their freedom in how they give substance to their projects, which came forward as an important criterium to improve adoption of a new process or tool. Because of the same reason, the guide can both be used as interactive pdf on a laptop or displayed on a big screen, containing clickable links with extra information, and as a printed

version. Furthermore, it can be used both individually or in a team during collaborative sessions, as a manual to follow. Lastly, the checkpoints that structure the service design process can also be found in the guide, see figure 31 for an example.

Furthermore, tips and extra information in each phase provide additional support. For example a page is added with five 'rules' of what the team members have to keep in mind (see figure 32). Besides, in one of the checkpoints (see figure 31) the team members are asked to reflect on the total value that the service system co-creates and captures. This was done based on the insight from literature that the total value a service system co-creates can be more or less than is captured by each individual stakeholders (Pitelis, 2009), leading to situations in which value is captured or co-created for a bigger ecosystem,

such as society or the planet. The interviews underlined this by with examples of how certain decisions about value could lead to unsustainable services.

The guide can help the team members at Ford with structuring their service design process and explore new services that co-create value both for Ford and for other stakeholders. Despite the fact that it provides guidance and structure, it should be kept in mind throughout the whole process that the value co-creation building blocks and network are a dynamic tool, the content and configuration can always be adapted and changed based on new insights.

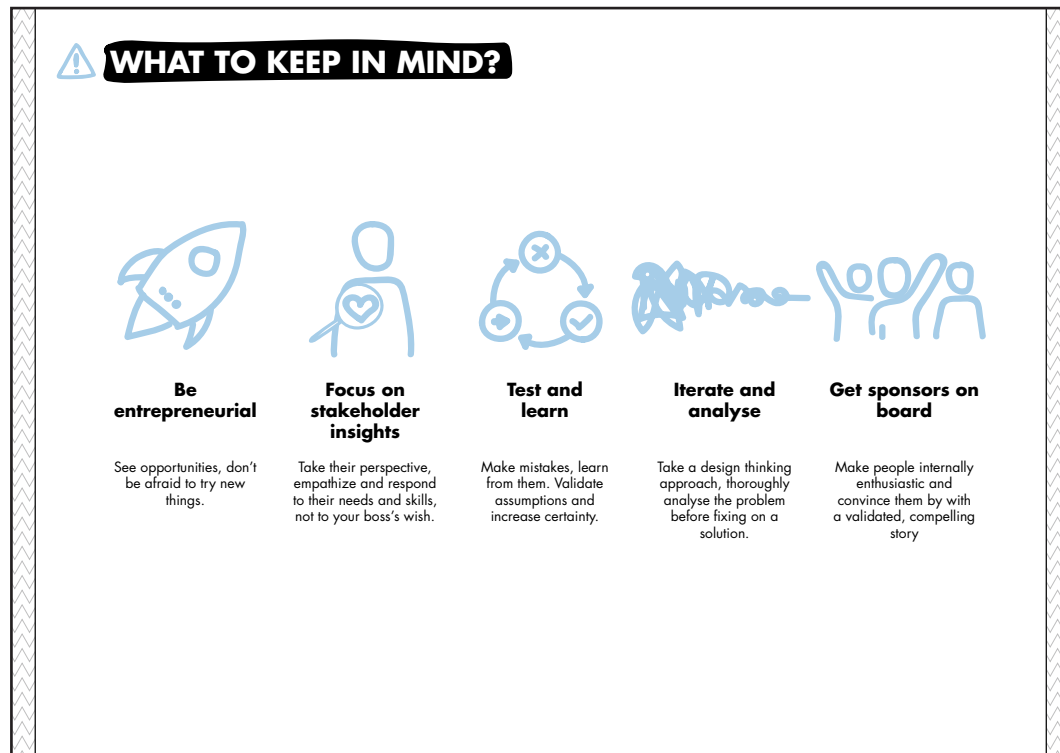


Figure 32. Example page from the guide

6.4 What the tool could do for Ford

In conclusion, the result of the tool development phase are the value co-creation building blocks and network that can be used to explore opportunities for new services that co-create value with and for multiple stakeholders. An improved service design process is suggested to support the design of new services in this multi-stakeholder context. An introduction video and practical guide support communicating what the tools could be used for and how they could be used. This result is summarized in figure 33.

From the empirical research, 5 main struggles could be concluded about the service design process of the involved Ford R&A team. In this section will be concluded how the above described results contribute to solving those struggles.

1. **The service design process is fuzzy;** The improved service design process as described in a new model based on the existing Ford Design Thinking model, provides more structure to the service design process, by adding a beginning and transition phase as well as having checkpoints. The checkpoints (see figure 31 for an example) help to reflect on the goal of the last phase and to make explicit what was the result of the past phase. The improved process will help the team in having more overview of the projects and with clearer communication of the results of each phase. Furthermore, it provides the foundation for a service design process in which also more complex projects can be addressed.

2. **The team members struggle to translate these possibilities into concrete opportunities for Ford, because it is often difficult to express and make explicit what value a service design project (co-)creates for Ford.**

The value co-creation building blocks help to become concrete and separate translate ideas

and insights about multiple stakeholders into a value co-creation network. The value co-creation network helps to express and make explicit what value Ford could derive from a new service, as shown in the value propositions Ford would accept. Furthermore, the value other stakeholders would derive is also shown in the value propositions they are planned to accept as well as the total value the system could co-create, which could go beyond the total each stakeholder individually derives.

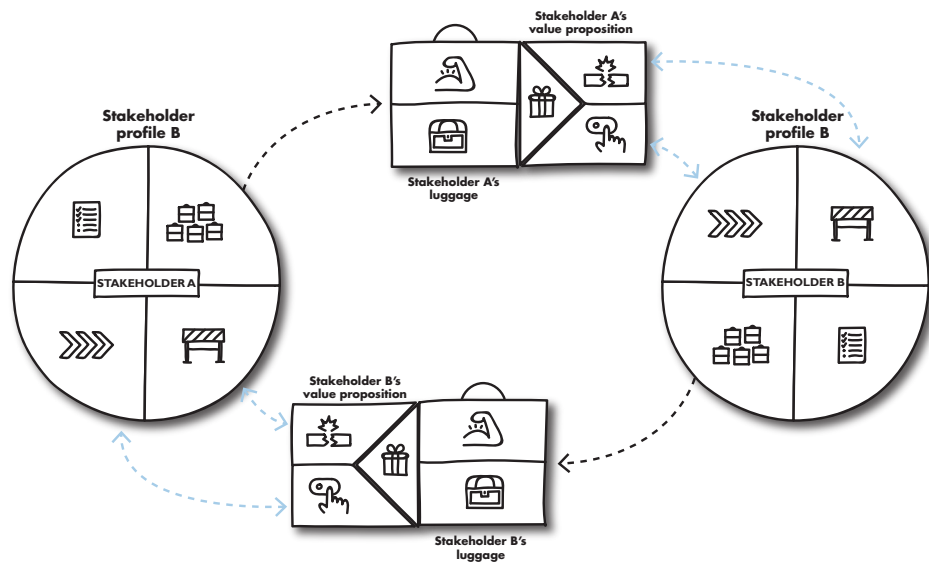
3. **During this exploratory phase there is not really focused on how to deliver those solutions and how Ford could derive value from them: the value co-creation and value capture.** During the idea generation phase, each connection between two stakeholders consists of two value propositions; the one a stakeholder proposes to the other and the one that stakeholder should accept from the other. This helps to already from this exploratory phase pay attention to what value each stakeholder could derive, including what Ford could derive for themselves. Those value propositions together with the stakeholder luggage pays attention to how this value is co-created.

4. **The team members struggle to convince their middle managers and align with other teams, because they do struggle to make explicit what the value of a project is.**

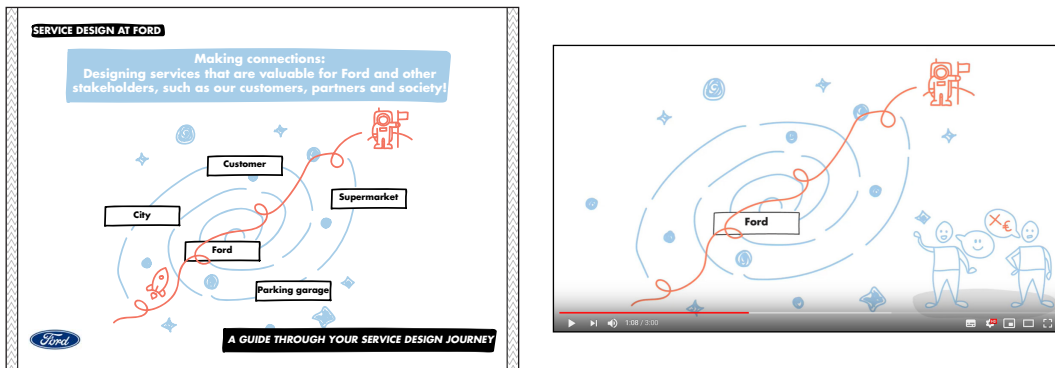
As described earlier, the value co-creation building blocks and network help to make explicit what value could be derived from a new service. It provides a shared language and a concrete overview of the planned value to be co-created, that can help in discussions to get on the same page.

5. **Lastly, it could be concluded from the interviews that scoping and evaluating**

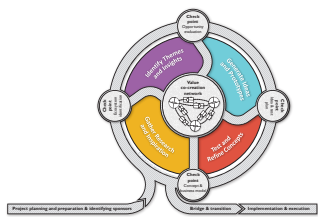
The value co-creation building blocks and network



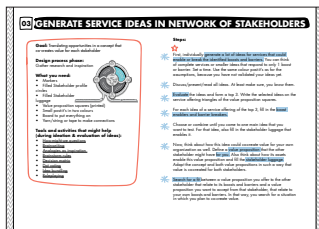
The practical guide and introduction video



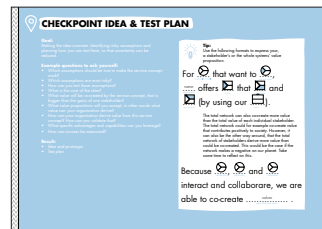
including:



Service design process model



Steps & tips



Checkpoints

Figure 33. The result of the tool development phase

opportunities is currently sometimes experienced as a hard. This might have to deal with the fuzzy process and lack of concreteness.

The tools developed in this project do not aim to quantify value and make it as explicit as people are used to in a traditional business case. However, by putting attention to distinguishing assumptions and validated insights and subsequently testing and validating those insights, the tools might contribute to making scoping and evaluating easier.

Besides the planned contribution to those struggles, the following insights and quotes from the test sessions at Ford illustrates how the tools stimulate exploration of value co-creation at the Ford R&A team:

- The value co-creation canvas stimulated interesting discussions about what role certain stakeholders could have relative to Ford. This is illustrated by the following quote:

“They are very interesting, could really be a partner that contributes to the development of the system or they could be somebody providing X, where we just can connect to and we don’t need any collaboration with them, we just need to be able, technically speaking to read their out their X.” - team member Ford innovation team

- It also stimulated the team members to think beyond a one-sided organization-customer relationship, and think further about what value could be co-created by collaborating with others, as illustrated by quote below. Also during later moments in the process, the team members came up with more stakeholders than they thought of at first.

“[Participant A]: This relationship is interesting to explore, on the one side; we can do it without them, but what is the extra value we get out of it, when we do it with them? [Participant B]: Extra value is there for sure, we are getting more information about X. [Participant A]: What does that help us?” - team member Ford innovation team

- Furthermore, during the last session it was expressed that the guide that described how to use the value co-creation building blocks was really seen as an added value in dealing with the complexity of this topic. During earlier sessions some of the information was mentioned as being too complex. However, during the last session it was acknowledged that this complexity is caused by the fact that if an organizations wants to explore value co-creation, they just have to deal with a lot of factors. The guide contributes to improved understanding and usability of the value co-creation building blocks and network.



7 DISCUSSION

This chapter discusses how the results of this project answer the research question. Besides, the limitations of this research are explained. Subsequently, suggestions for further research are given. Lastly, recommendations for practice are discussed.

7.1 Conclusion



This graduation project aimed to investigate how opportunities for co-creating value for multiple stakeholders with new services could be explored in the service design process. The empirical research aimed to first understand why the current services design process at Ford does not sufficiently support the exploration of opportunities for co-creating value for multiple stakeholders with new services and what tools currently are used for this. It was found that the current service design process at Ford R&A is fuzzy without a clear structure. Team members struggle to translate possibilities for multi-stakeholder services into concrete opportunities that make explicit how they are valuable for Ford. They mainly focus on exploring the value proposition, how the value proposition is (co-) created and how value can be captured is not explored. This leads to problems when the team members need to convince their managers and align with others, because the value of a project is not clear for them. Furthermore, currently no service design tool exists that stimulates exploring value co-creation for new services for and with multiple stakeholders. The tool development cycle aimed to translate these insights into a tool that answers the research question.

The research question *How can opportunities for co-creating value for multiple stakeholders with new services be explored in the service design process?* is answered by providing the value co-creation building blocks that lead to a value co-creation network. The value co-creation building blocks provide a practical tool to explore ideas for services in a multi-stakeholder context. Value co-creation is in the tool addressed by the interaction of two value propositions for each pair of stakeholders that interacts, which is at the basis of the value co-creation network. Besides, the building blocks give room to multiple types of value, fitting with

a multi-stakeholder context and the network balances value proposition, value co-creation and value capture from the exploratory phase onwards. Furthermore, the value co-creation network makes both the value proposition, value co-creation and value capture explicit. It also provides a shared language and can be used to discuss the value that the new service concept co-created and what Ford specifically could derive from that, to align with others.

As a foundation for using the value co-creation building blocks and network at Ford, an improved service design process is developed and expressed in a new process model. It builds on Ford's existing design thinking model, but provides more structure because of checkpoints, while still leaving room for iteration and flexibility.

Practical relevance

For the involved innovation team at Ford R&A, the improved process with checkpoints provides more structure in the service design process. This will help them in having more overview of the projects and with clearer communication of the results of each phase, because of the explicit checkpoints. It provides the foundation for a service design process in which also more complex projects can be addressed.

This can be done by using the value co-creation building blocks and value co-creation network. Using these as a tool to explore opportunities for new services that co-create value with and for multiple stakeholders, can help Ford to develop those new services that are relevant for multiple stakeholders. This aims to help Ford to deal with the increased competition in the mobility landscape and to stay relevant in this landscape. It also helps them to use their (new) technologies to enable new value propositions that go

beyond the traditional organization-customer relationship where Ford sells manufactured products. However, the tool ensures that there is also attention to what value Ford could derive themselves to also survive as organization.

The improved process is developed for and based on insights from the involved innovation team at Ford R&A. However, the Ford design thinking model that was used as a foundation, is relevant and can be used beyond this team. Because of room for flexibility within a structure that the process has, different teams can adapt it to their own goals. Moreover, from the interviews came forward that there are more teams that explore new ways for Ford to propose value. For those teams, the value co-creation building blocks and network might also be a useful tool. Furthermore, the R&A team has a 'good address book' and is in contact with several other teams. They could help spread awareness about opportunities for value co-creation with other stakeholders and use a value co-creation network as example.

Besides the insights about the process of the Ford team, the empirical research also concluded that there are in general currently no suitable tools for exploring in practice how value could be co-created with multiple stakeholders with new services. Although the process model is developed specific for Ford, the value co-creation building blocks and network are also developed based on insights of VanBerlo and from literature. Based on those insights it can be assumed that this tool can also be valuable for other organizations that want to stay relevant in their market by designing new services that co-create value with and for multiple stakeholders and that they can also derive value from for their own organization. Also designers of design agency VanBerlo for example expressed that it is sometimes hard to deal with differences between the results of a service design project and the results a deciding manager expects

to evaluate a project on the value that can be captured from it. The value co-creation network could provide at least a shared language to make those differences explicit, so that they can be discussed and solved. Furthermore, it is a tool that gives room to explore multiple types of value, not only monetary value, which came forward as an important drawback of the currently existing tools when they are used in multi-stakeholder situations. Addressing those multiple types of value and collaborating with multiple stakeholders, is important for solving the complex problems our society is dealing with today.

Academic relevance

This research contributes to existing literature by reviewing the role of value co-creation in service design. Literature about value, service-dominant logic and business model was reviewed, compared and integrated. Based on this it was concluded that three main dimensions of a business model according to Clauss (2016) could be adapted to the SDL mindset (Vargo et al., 2008), leading towards the three dimensions value proposition, value co-creation and value capture. Those provide a framework for exploring opportunities for new services for and with multiple stakeholders, because it is not only taken account what value is proposed, but also how this value would be co-created and what value could be captured from that.

The findings of this project contribute to understanding how the three main dimensions of a business model, value proposition, value co-creation and value capture (Clauss, 2016; Vargo et al., 2008) can be balanced in the service design process, to explore opportunities for new services with multiple stakeholders. The developed tool is in line with the SDL mindset in which stakeholders in a service co-create value is "by a reciprocal and mutually beneficial relationship" (Vargo et al., 2008, p. 146). For example customers "apply their knowledge and

skills in the use of it in the context of their own lives” (Vargo et al., 2008, p. 146). This research fills the identified gap of describing how this value co-creation can be explored in a service design process in practice.

If you take the perspective of one stakeholder in a value co-creation network, both the value it proposes and the value it plans to capture are included in the network, as can be seen in figure 34. Each connection between two stakeholders is a two-sided interaction with value propositions to both stakeholders. This translates the insight that a whole service system could be described as ‘an arrangement of resources (including people, technology, information, etc.) connected to other systems by value propositions’ (Spohrer, Maglio, Bailey, & Gurhl, 2007; Spohrer, Vargo, Caswell, & Maglio, 2008) into practice with this tool, which is important when organizations want to use this insight to collaboration with multiple stakeholders in a service system.

Furthermore, the development of a tool for balancing focus on value proposition, value co-creation and value capture through two-sided interactions also contributes to the development of business models that address intangible value as well, which was a gap that was identified by Den Ouden & Valkenburg (2011). The developed value co-creation building blocks and network address all three dimensions of a business model for a multi-stakeholder services and leaves room for multiple types of value. Furthermore, it addresses the insights that a stakeholder can co-create more or less value than it captures (Pitelis, 2009) by paying attention in the practical guide to thinking about the total value that the service co-creates and if that is more or less than it captures. Awareness about the consequences that capturing more value than you co-create could have on our planet is important to address in both practice and literature.

7.2 Limitations

In the following section, the limitations of this graduation project will be discussed. Furthermore, some considerations are addressed that this project did not take into account.

Limitations in the theoretical background

As defined in the project scope, this project is addressed from the perspective of a designer. It was chosen to focus on the role of value co-creation in the service design process, to see how opportunities for value co-creation could be explored. This perspective was complemented with insights mostly from management literature about value (co-)creation in business models, but this was all viewed with the design perspective in mind. However, there might be other fields that also address different perspectives on value co-creation with multiple stakeholders.

Limitations in the empirical research

The case study consisted only of a single case (the involved team of Ford R&A), although multiple projects were studied as embedded subcases. Furthermore, not so many of the projects that were studied followed a structured service design process. To have more insight into service design processes that deal with a multi-stakeholder context, semi-structured interviews at a design agency (VanBerlo) were done. However, those interviews were only done with 3 participants. Furthermore, there are differences between a service design process at an agency and at a big organization. A bigger sample of cases and their service design process in a multi-stakeholder context, would have led to a better understanding of how services are currently designed and executed for and with multiple stakeholders.

need to be convinced and that have currently a different language in talking about the value of a project) could have been interviewed. In that way, the tool would have been better able to provide a shared language. However, solving this struggle was not within the main focus of this graduation project.

Limitations of the tool

During the development of the tool, multiple sessions at Ford were held to validate insights and test prototypes of the tool. The test sessions and discussions at Ford had a time span of 1-2,5 hours. However, the value co-creation building blocks and network are meant to be applied in a longer services design process. The effectiveness of the value co-creation building blocks and network during a service design process over time, has not been studied. Besides, the last iteration that was developed based on the latest feedback of and dialogue with supervisors at the TU Delft and Ford, has not been tested with other team members of the Ford team.

Furthermore, the research question expressed that it was investigated how opportunities for value co-creation with new services with multiple stakeholders could be explored. One of the insights that led to this research question was the conclusion that in service design, there is often mainly focused on the value proposition. However, the third dimension of a business model, the value capture is often also not explored and also not mentioned in the research question. Although the value capture is less explicitly mentioned, it is also addressed by this project, because it always considers a two-sided connection between stakeholders that co-creates value. Both stakeholders offer each other a value proposition and could derive value from this value co-creation. However, despite the fact that the value capture is addressed, it is mostly about

Besides, it would have been beneficial for the outcome if also deciding managers (the ones that

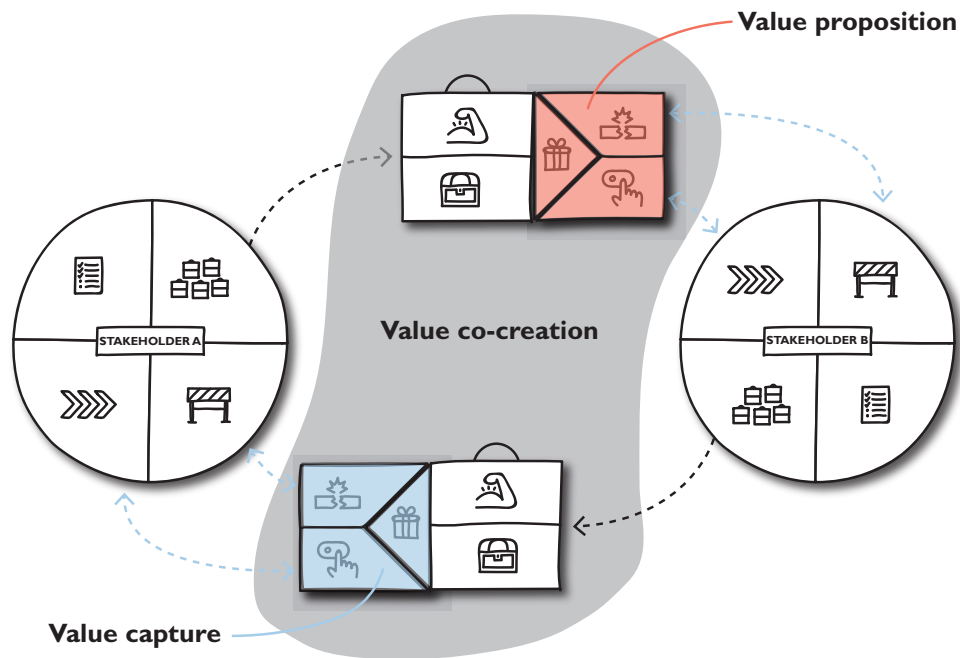


Figure 34: How the value proposition, value co-creation and value capture are addressed from the perspective of stakeholder A.

what value could be captured and not so much attention is paid to how value could be derived.

Another aspect that is not addressed with the tool is the fact that customers could also be unproductive and that there is a varying extent in which certain stakeholder contribute to the co-creation of value. Those stakeholders have a more passive role in the network where other stakeholders might have a more active role. However, the tool currently does not distinguish between the different roles of stakeholders in the network.

Lastly, it was concluded in the theoretical background that a service provides an experience over time. Value might also be co-created and captured over time. For example, value might be co-created, but the capturing of it could happen a lot later, or with the same service, different value might be co-created or captured in the long term than in the short term. Besides, it was also concluded that there are different types of value and one type of value (such as brand reputation as professional value) might lead to another type of value in the long term (such as monetary value that professional value could lead to. However, this time perspective on services and value co-

creation is not translated in the tool. The time perspective could be added by having different scenarios for different moments in time of how value is proposed, co-created and captured. So multiple versions of the value proposition squares and stakeholder luggage. However, it was chosen not to include this in this tool, because it would make the tool even more complex. Possibly, it could be addressed in a different way in the service design process.

General limitations

You can provide processes and tools, but in the end there are more variables that play a role in the success and sustainability of change and innovations. Especially in solving the struggle to convince and align with others, other factors play a role that can not solely be solved with a tool, such as how big the risks of a project are and what people are used to regarding evaluating projects. From the study of Sangiorgi et al. (2015) could also be concluded that power relationships could influence and create resistance towards accepting and adopting transformative design practices such as service design. Skepticism played a role as well as how decision making is organized within the organization.

7.3 Recommendations



Suggestions for future research

As mentioned in the limitations, not so much attention has been paid to exploring how exactly value could be captured, when it is defined what value is planned to be captured. Exploring how value could be captured when multiple types of value play a role in the service design process, proposes an interesting subject for additional research. More specifically, more research would be needed on how those multiple types of value could be quantified, to further solve the alignment and evaluation struggle when the service designers and decision makers talk a different language.

Furthermore, this project does not address how alignment and fit between the planned and explored value proposition, value co-creation and value capture and the business objectives and strategy of an organization can be established. This also provides an interesting topic for further research.

Recommendations for practice

Although the improved process model could provide more structure in the service design process of the Ford R&A team, the service design process can still be developed further to come to more successful services. For example, a struggle to scope and evaluate service design projects came forward during the empirical research, but was not specifically addressed in this graduation project. This is something that Ford could work on in the future, to further develop their service design process. For example, by collaborating with another master graduation student on this topic. This also applies to the struggles that were sometimes experienced towards the evaluation and transition moment, when a project would be handed over. The team would probably benefit from a more clearly defined transition. Lastly, it would be good to

sensitize and inform the team members more about the concepts value co-creation and value capture and the possibilities of how value can be co-created and captured, before they start using the value co-creation building blocks and network. This would enable them to better use the value co-creation building blocks and networks to find valuable opportunities for new services.

Furthermore, the value co-creation building blocks and network should be tested more to validate the assumptions about the planned and desired result and validate how it would help the team if the tool would be applied throughout the whole service design process. Based on these tests, the tools should be iterated further to be fully integrated in the Ford design thinking process, to make sure the team members can use it and benefit from it.

Lastly, if the value co-creation building blocks and network would be interesting for organizations beyond Ford or if VanBerlo would want to use them, the practical guide should be adapted to be applicable for other organizations than Ford. Although the introduction video could be used to explain the tool, the practical guide would provide them with more details to really use it in practice. To improve the quality of the tool, it would also be good to test it during several service design processes at different organizations. Furthermore, these test sessions could provide more examples of filled-in value co-creation networks, which would be very helpful in explaining the tool to others and which is now only included to a limited extent.

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