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A case study on servitization in manufacturing from a dual business model perspective

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Abstract: The research on servitization of manufacturers has recently gained new traction as firms increasingly offer combinations of products and services empowered by digital means. As these firms expand their offerings to sell integrated product-services alongside their traditional commerce, they are confronted with having to juggle dual business models. Through a qualitative in-depth case study, we explore the relations between a servitized business model and its traditional transactional counterpart by considering individual elements of the business model. Additionally, we apply concepts from the ambidexterity literature to explain organizational mechanisms in dealing with the challenges of business model duality. Our analysis highlights that the relation between the business models play a key role throughout servitization and that business model elements vary in relevance as servitization progresses. We find that a firm's operational motivation to servitize has an impact on their starting point in servitizing, and that firms can benefit from focusing on their value capturing when beginning to servitize. Furthermore, we suggest that servitizing firms can shift between different modes of ambidextrous organizing and we identify a unique mechanism which we frame as *segmented structural ambidexterity*. This mechanism captures how a firm can break out individual business model elements to accelerate the firm's progression in servitization.

Keywords: Servitization, Product-service system, Business model innovation, Ambidexterity

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Glossary

AIC	Appliances Industry Company
CIC	Construction Industry Company
TIC	Transportation Industry Company
B2B	Business-to-Business
B2B2C	Business-to-Business-to-Consumer
DTC	Direct-to-Consumer
IT	Information Technology
IoT	Internet of Things

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1. Introduction

Over the past decades, traditional manufacturing firms have accelerated their efforts in exploring new value creation by updating their offerings to incorporate services to a greater extent (Fliess & Lexutt, 2019; Khanra et al., 2021). On an industry level, this is illustrated by data showing that two out of three manufacturing firms in the west offer services with varying levels of complexity (Martinez et al., 2017). Due to macro trends such as rapidly advancing digitalization, businesses are increasingly enabled to shift from product-centricity towards service-centricity, which has renewed the attention to servitization in academic research (Allmendinger & Lombreglia, 2005; Raddats et al., 2019).

The phenomenon of shifting from product-centric to service-centric business, was introduced by Vandermerwe and Rada (1988), and is referred to as *servitization.* Manufacturers choose to pursue servitization for a range of reasons (Raddats et al., 2019). The most recognized motivations include competitive (Dachs et al., 2014), demand-based (Gebauer et al., 2011), and financial or economic reasons (Malleret, 2006; Oliva & Kallenberg, 2003). These often pertain to creating more value out of existing products. *Product-service offerings* which feature integrated combinations of products and services can bring higher value in use together than each on its own (Baines & Lightfoot, 2013). A wide range of business research streams explore the shift (Raddats et al., 2019) and the majority highlights that understanding the transition involves a degree of complexity. To understand this complexity, researchers have attempted to outline and investigate the organizational structures, service cultures, and service innovation processes in servitization (Kowalkowski et al., 2017).

Although successful servitization is also linked to practical and technological advantages for firms (Baines & Lightfoot, 2014) there is a range of risks associated with attempting to add services in traditional manufacturing businesses (Benedettini et al., 2017). The risks include the increased tension by pulling resources from the product-centric business to the servitized business (Kindström et al., 2012) and the high level of financial and organizational commitment needed for profitability in servitization (Visnjic & Van Looy, 2013). Internally, the expansion of a portfolio through services may create ambiguity and confusion (Benedettini et al., 2017). If firms cannot handle the ambiguity (Nordin et al., 2011) and ambivalence of their product-service portfolio they risk missing out on being able to capture advancing service opportunities (Lenka et al., 2018). Therefore, businesses are drawn between conflicting product and service orientations which they must manage simultaneously (Lenka et al., 2018). As companies take on an additional business model, researchers must start assessing the challenges and works around managing the two in parallel (Khanra et al., 2021). In this, the notion of ambidexterity offers a promising perspective as it can frame the challenge in terms of exploiting the traditional business model and exploring the new one (Markides, 2013).

Palo et al. (2019) reason that a dual business model view offers an integrating concept to analyze the phenomenon. In the creation and implementation of product-service systems, business models are central for the success of such initiatives (Kindström, 2010; Reim et al., 2015). While previous research highlights servitization challenges on a holistic level as a shift in business models (Khanra et al., 2021), a deeper understanding of the conflict of business model elements within a single company is still needed (Palo et al., 2019).

This thesis consequently explores servitization on a business model element level by drawing from a firm's practical challenges of developing a servitized business model in relation to their traditional product-centric counterpart. We undertake a case study approach, in which we draw insight from the ambidexterity literature to understand the organizational handling of duality in this process.

1.1. Empirical Support

To assess the logic behind this approach and perspective, we performed a series of expert interviews with employees from companies that had undergone a servitization shift. This is further explained in 3.2.1 and the summarized documentation from these interviews can be found in Appendix 1.

In this series of interviews, our respondents highlighted three areas that were crucial for them in developing their product-service offerings. Firstly, they argued for the strong difference between transactional and servitized customer processes. Secondly, they highlighted the need for new employee skills and resources. Finally, they elaborated on the fundamental change in the support and technical systems structure between the traditional and servitized business model.

As these challenges closely relate to individual business model elements, it leads us to believe that studying what the relations between novel and traditional business model elements mean for the organization will bring valuable insights for managers and researchers alike.

1.2. Research Gap

Both researchers and practitioners emphasize a need for insight on how a developing servitized business model relates to a manufacturer's traditional business model. Kowalkowski et al. (2017) call for more research on the processes regarding the emergence of servitization in firms while Forkmann et al. (2017) argue that understanding the change to components in a business model is crucial for practitioners to be able to strategically servitize. Palo et al. (2019) state that business model change in servitization has only been briefly explored, and Khanra et al. (2021) explicitly claim that the relation between one firm's traditional and servitized business models manifest how firms manage the multiplicity. Simultaneously, scholars in the nearby field of ambidexterity call for deeper insight of ambidextrous practices in business model duality (Markides & Charitou, 2004; Markides, 2013). This study addresses the theoretical gap with mentioned practical relevance through the following purpose and research questions.

1.3. Purpose and Research Questions

In light of the calls from servitization researchers, we aim to advance the theoretical understanding of how servitization develops in manufacturing companies through a dual business model perspective and what role organizational configuration plays in this relation. We also aim to offer practical guidance on how firms could manage the practical challenges of organizational configuration when servitizing. The purpose therefore leads us to examine the following question:

Research Question 1: How does a manufacturer's emergent servitization business model develop in parallel to its traditional business model?

In order to answer the first research question, we will review existing literature on servitization and business model development to develop an analytical framework which captures the process of servitization and the relation between the business models. When applying this framework in the analysis, we find it likely that we touch upon organizational aspects in the process. Therefore, and in line with our purpose, we proceed by asking:

Research Question 2: How can a servitizing product-centric manufacturer deal with the challenges of dual business models through organizational means?

As previous researchers in the ambidexterity field argue for its applicability in business model duality, we will integrate aspects of ambidexterity in the aforementioned framework. This addition to the analysis also aims to strengthen the second part of our purpose, that of giving practical insight to servitizing firms.

1.4. Contribution and Definition of Scope

Our main goal of this study is to add to servitization literature by covering the relation between a manufacturer's traditional and servitized business model on component-level over time. We also aim to contribute by practically applying ambidexterity literature to advance the understanding of how firms organize around servitization challenges. We do not claim to assess all components of a servitized business model, but rather target those business model elements which are in focus throughout the servitization journey in our attempt to assess intra-firm complexities. Finally, although the case in this study could be relevant to view from a *digitization* or *circularity* point of view, we deliberately omit these themes in our theoretical review to avoid the dilution of our contribution.

2. Literature Review

The theory presented in this chapter aims to frame the three research domains which are used to describe and explore the servitization journey. First, we give an overview on servitization literature and the concept of servitization as a transformational process (2.1). Then, we proceed with outlining how the business model can be used when analyzing servitization (2.2). We add the organizational aspects of ambidexterity as a focal lens for this study (2.3). Lastly, we finish with a synthesis of the literature connected to the research gap we aim to fill (2.4) followed by the analytical framework that guides our data collection and analysis (2.5).

2.1. Definitions of Servitization

The research on *servitization* started to emerge more than 30 years ago and was first presented by Vandermerwe and Rada (1988) in which they outlined servitization as the evolution from purely selling goods to selling customer focused bundles including e.g., goods, services, and support. Over the years, servitization has come to depict a manufacturer's shift in focus from viewing goods and services as separate towards focusing on value-adding integrated bundles (Kowalkowski et al., 2017). As the field of research broadens, scholars tend to describe the phenomenon as *transition to services* (Oliva & Kallenberg, 2003), whilst others discuss service *infusion*, in which the firm increases the relevancy of service offerings in relation to their traditional product business (Brax, 2005; Gebauer et al., 2008). From a broad perspective, service infusion and service transition harmoniously explain the same phenomenon as servitization (Eloranta & Turunen, 2015). However, Kowalkowski (2017), differentiates between the terms by stating that servitization covers the processes of a shift from a product-centric to a service-centric logic. Service infusion can then be understood as a part of the wider phenomenon of servitization. This is in line with the widely recognized definition of servitization by Baines and colleagues.: "[servitization is] the innovation of an organization's capabilities and processes to better create mutual value through a shift from selling products to selling Product Service Systems" (PSS) (Baines et al., 2009, p. 555). PSS are, accordingly, the integrated combination of products and services which fill user needs (Mont, 2002) or which deliver value in use for the customer (Baines et al., 2007).

2.1.1. Progression of Servitization

The level of progression of servitization in a firm can be assessed in many ways (Baines et al., 2020). It can be viewed as the advancement of firms' operational (Windahl & Lakemond, 2010) and dynamic capabilities (Teece, 2007) for services, the number of service offerings (Ulaga & Reinartz, 2011), or more broadly, the advancement of servitized offerings as indicators of the extent of servitization (Martinez et al., 2010; Tukker, 2004).

Various definitions and concepts exist to outline the level of complexity of a product-service offering demarcating how far advanced the service offering development has come in a company (Khanra et al., 2021; Raddats et al., 2019). For example, Baines and Lightfoot (2014) define service outcomes in three levels: *Base*, in which the service is product provision-tied, such as a warranty or spare part-provision. *Intermediate*, in which focus lies on maintaining the product through means of reparation, training, condition monitoring, and similar. *Advanced*, through which outcome-focused capabilities are delivered such as revenue-through-use or longitudinal service agreements. Tukker (2004) explains this on a PSS continuum, as can be seen in Figure 1. In this, he defines three types of PSS. First, the least complex *product oriented* PSS, which act as add-ons to the product. Second, *use oriented PSS*, in which the traditional sales model is discarded and e.g., rental, lease or pooling becomes the dominant option. Third, *result oriented*, in which the outcome of use is what is transacted. As a fundamental rule, Tukker & Tischner (2006) argue that firms need to start with the least complex services to make the transition successful. In contrast, Ulaga and Reinartz (2011) argue for a division between product-service offerings which promise to perform a deed, known as *input-based*, and product-service offerings which promise an outcome or performance, known as *output-based*. A more recent view argues that servitizing firms need to choose between different trajectories of servitization (Lenka et al., 2018). Kowalkowski et al. (2015) identify three alternative paths: becoming (1) an industrializer; (2) an availability provider; or (3) a performance provider. These reflect the categories of product, use, and result oriented PSS respectively but conclude that firms choose between the variants rather than simply transitioning between them. Although the variety of similarly framed definitions can unnecessarily complicate servitization (Raddats & Kowalkowski, 2014), the variety can also be a verification for the continuous need for empirics to clarify and re-evaluate the servitization progression (Raddats et al., 2019). Across the definitions, the fundamental challenge of servitizing firms is that of finding a way from pure product-centricity towards service-centricity (Kamal et al., 2020).

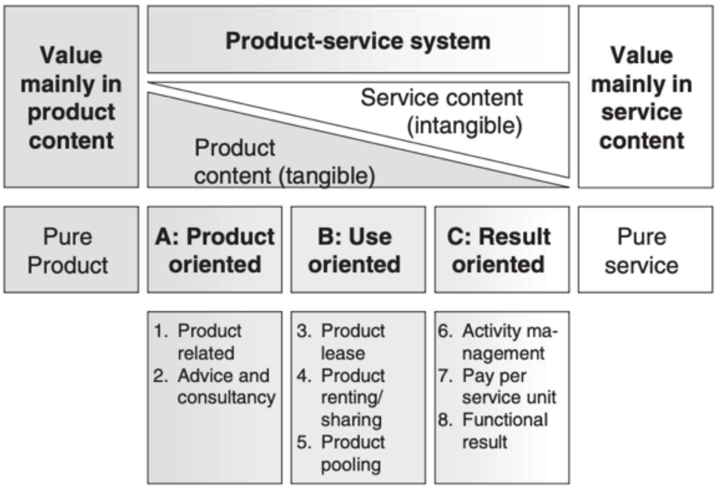

Figure 1: Tukker's (2004) categories and subcategories of PSS

2.1.2. Challenges of Servitization

Servitizing firms often start as predominantly focused on manufacturing goods and are at that stage only active in certain parts of the value chain. They can, through adding services, move up and down the value chain to increase the value of their offerings (Wise & Baumgartner, 1999). When shifting towards service contracts, revenue mechanisms are increasingly more advanced as the business understanding for customer needs and customer service maturity develops (Kindström, 2010). A decision to servitize thus needs to be made from an understanding of the firm’s unique starting point and with a vision for future state (Kindström & Kowalkowski, 2014). In addition, there are many aspects which need to be addressed on a firm specific level. Kamal et al. (2020) outline that servitizing firms in general experience challenges in a multitude of ways, some of which query how to organize, how to innovate, and how to structure the company’s finances. Multiple of these types of challenges connect to the highlighted need for new capabilities in managing service delivery networks, integrated development, partner networks, and business model design (Parida et al., 2014). On a higher level, a view of services as secondary to a firm’s dominant product-centric business model risks impeding the success of implementing services in traditional manufacturing companies’ business (Brax, 2005). This service paradox has led to multiple cases in which companies have had to withdraw from certain service initiatives (Kowalkowski et al., 2017; Valtakoski, 2017), and even though the dominant move in the servitization literature is directional towards adding services, *deservitization* and *service dilution*, which are reverse concepts of servitization and service infusion, show that companies, and their offerings, cannot always move from pure product-orientation to service-orientation (Kowalkowski et al., 2017). In theory, deservitization and service dilution highlight that a shift is not irremediable. However, the phenomenon is outside the scope for this study, as the thesis aims to depict the journey when attempting to servitize.

2.1.3. Servitization as Business Transformation

Rather than seeing servitization as the transitional shift of an entire organization, it can be viewed as a transformative process in which the firm extends its business (Baines et al., 2020; Lenka et al., 2018). The transformation can therefore be depicted as a stagewise journey (Baines et al., 2020; Lütjen et al., 2020) in which progression is made with influences from several contextual factors. According to the multiple case studies by Baines et al. (2020) these include customers, technology, organizational readiness, and value network positioning as shown in Figure 2**.** This highlights that there are internal aspects, such as consent and commitment that drive servitization in the firm.

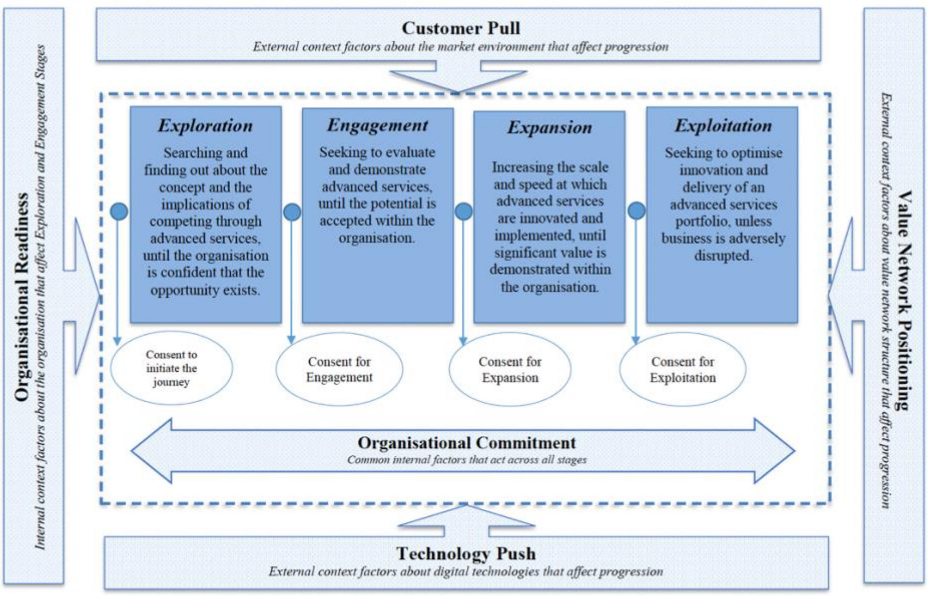

Figure 2: The servitization progression model (Baines et al., 2020)

Within a transformation process, more elements as, for example, the product-service offering, the organization and the value network will need to be addressed from an inside perspective (Martinez et al., 2017). Such elements are captured in the business model (Kindström, 2010). Management literature has only a limited amount of discussion of servitization practices from a business model point-of-view (Palo et al., 2019; Reim et al., 2015; Storbacka et al., 2013). Thus, it becomes relevant to assess how the firm works with its business model throughout the process. Servitization generally assumes the focal firm comes from a non-service-based business model (Baines et al., 2020; Kowalkowski et al., 2017; Lütjen et al., 2017; Vandermerwe & Rada, 1988), therefore, the understanding of creating a servitized model in parallel with an existing dominant one needs to be explored (Khanra et al., 2021; Palo et al., 2019).

2.2. Business Models

The business model (BM) perspective on servitization offers a way to *"visualize how and when changes might occur, which should increase internal transparency, understanding, and awareness of service opportunities and necessary changes"* (Kindström & Kowalkowski, 2014, p. 106). The business model is traditionally expressed in a 1-1 relation with the firm, i.e., a firm has one business model, and is broadly used as a tool to describe business logic in objects, concepts, and relationships (Osterwalder et al., 2005). However, the business model concept has never landed in a unitary definition (Nielsen et al., 2019), and can be defined on a spectrum from as narrowly as the revenue model and sustention of profits (Stewart & Zhao, 2000), to as broad as the firm's position in a value chain and the enterprise system around it (Zott & Amit, 2008). This thesis leans towards the broader definitions to be able to consider aspects of *what* value proposition(s) a firm offers, *how* value chains are organized, *why* the selected profit mechanism(s) is relevant, and *who* to target with the proposition (Gassmann, 2020) The business model is vital to conceptualize and commercialize new types of offers (Chesbrough & Rosenbloom, 2002). As it becomes relevant to assess firm level changes and opportunities for servitization (Kindström & Kowalkowski, 2014), the examination of specific business model elements helps indicate how these distinct parts of the business model interplay and interconnect (Ferreira et al., 2013). The process view of servitization also warrants that business elements change through servitization rather than being static alternatives to the traditional business model (Palo et al., 2019).

2.2.1. Business Model Innovation

From the business model literature, *business model innovation* reflects the process of developing and advancing into new business models so that a firm can achieve competitive advantages(Gassmann, 2020; Nielsen et al., 2019; Taran et al., 2016). Implicit to the firm's innovation of business models is that changes can be viewed as the changes in practices (Mason & Spring, 2011). Although there exist several well-described frameworks for business modelling (Baden-Fuller & Morgan, 2010; Gassmann, 2020; Osterwalder & Pigneur, 2010), a rewarding application of business model elements in analysis requires equal level of BM abstraction (Tucci & Massa, 2014). One particularly interesting perspective for this thesis is that of *value elements* which capture firms' choices and operations by reflecting on their relation to business outcome (Salum et al., 2019). This view was synthesized by Taran et al. (2016) who suggest a framework of five value elements that are elaborated in Table 1: Value Proposition, Value Segment, Value Configuration, Value Network, and Value Capture. Changes in each element and the relation between them, can accordingly be considered innovation in the business model (Taran et al., 2015). This thesis adopts the elements as the ontology for viewing business models on a fundamental level.

Element	Description	Definitions
Value Proposition	What does the company offer?	The values which are brought to customers, and the features of this offering that can satisfy its customers' needs.
Value Segment	To whom does the company offer?	The customer segments a company aims to serve, and the relations with them.
Value Configuration	How does the company develop and distribute this offering cost-effectively?	The efficient mix of key resources (e.g., tangible, financial, human, intellectual), key activities (e.g., production, service delivery, logistics) and distribution channels
Value Network	Who collaborates with the company in order to develop, distribute, and/or sell this offering?	The network of partners who engage in different kinds of cooperation with a company.
Value Capture	How much, and in what way, does the company generate revenues?	How, and how much, the customers pay for the delivered offers.

Table 1: 5V Elements of Business Models with descriptions and definitions (derived from Taran et al., 2016)

2.2.2. The Emergent View of Business Models

Although the view of business models as a blueprint for business is common, the process of developing a business model is often viewed as emergent (Nielsen et al., 2019). Mason and Spring (2011, p. 1033) argue for this dynamic approach by stating that "*business models are not first designed and then implemented but are more usefully thought of as strategy-as-practice; incrementally emergent and ever-changing"*. In this view, an organization with parallel practices, such as those found within dual orientations of product and service focus (Lenka et al., 2018), can be argued to have an emergent business model alongside its traditional one (Palo et al., 2019). This view of *emergence* requires firms to change multiple elements simultaneously in the process of developing servitized solutions (Storbacka et al., 2013).

Some research has touched upon the plurality of business models in servitization cases (Kowalkowski et al., 2015; Lenka et al., 2018; Palo et al., 2019). Yet, a servitization business model as an addition to the traditional manufacturer's dominant business model, still lacks theoretical and practical understanding (Khanra et al., 2021). This is particularly significant in situations where technical capabilities are explored, such as analytics and new predictive data, as they can change the way a firm generates value, leading to conceivable conflicts between the business models (Parida et al., 2019). The plurality creates questions of the contestations between an explorative emergent business model and an incumbent business model, but also questions about potential synergies between the two models (Markides & Charitou, 2004; Markides, 2013).

2.3. Ambidexterity

When dealing with business duality there is a need to define the necessary balance in terms of culture, structure, processes, and innovation. Due to this Tushman & O'Reilly (1996) originated the term *ambidextrous organization*, which conceptualizes how organizations can *exploit* its incumbent capabilities while also *exploring* market opportunities. It is rooted in the idea that firms are challenged with the risk of becoming obsolete, by focusing too much on exploiting their current business practices and missing out on new opportunities, or by focusing too much on only exploring new opportunities and missing out on yields from accumulated experience (Levinthal & March, 1993; Sinha, 2015). Consequently, ambidexterity is positively associated with firm survival, sales growth, and innovation as it enables organizations to compete in mature markets through efficiency and expertise as well as in emerging markets with experimentation and agility (O'Reilly & Tushman, 2008; O'Reilly & Tushman, 2013).

2.3.1. Mechanisms of Ambidexterity

The ambidexterity concept covers three main mechanisms: temporal, structural, and contextual ambidexterity summarized in Table 2 (O'Reilly & Tushman, 2013; Simsek et al., 2009; Sinha, 2015). Temporal ambidexterity in research is broadly defined as a cyclic view in which an organization balances exploitation and exploration by engaging in each respective interest in different points in time (Markides, 2013; O'Reilly & Tushman, 2013; Raisch et al., 2009). However, with this definition, the standpoint to a certain degree lacks practicability as organizations are oftentimes required to exploit and explore simultaneously due to external forces and rapid changes in the market (Ossenbrink et al., 2019). For this reason, Wang et al. (2019) proposed an alternative definition that builds on the aim to simultaneously align short- and long-term oriented strategies. The more commonly suggested mechanisms are structural ambidexterity, in short organizational separation, or contextual ambidexterity, which aims to create a balance between exploitation and exploration on an individual level (Markides, 2013; O'Reilly & Tushman, 2013; Raisch et al., 2009; Sinha, 2015). In practice, the difference between these ways of organizing around tensions is not as clear-cut as in theory. Thus, Ossenbrink et al. (2019) present structural and contextual ambidexterity as two extremes of a continuum. The adoption of ambidexterity can be mandated from the top or be emergent from the bottom. A large part of current ambidexterity literature assumes that the decision to exploit and explore simultaneously is induced by top management (Jansen et al., 2008; Lubatkin et al., 2006). In practice, middle managers oftentimes are better aware of new business opportunities through changes in technologies and markets and thus instigate and drive new initiatives (Zimmermann et al., 2015).

Types of ambidexterity	Definition	Examples of relevant references
Sequential Ambidexterity or Temporal Ambidexterity	*Undertaking two seemingly incompatible activities (such as exploitation and exploration) but at different times (p. 315)*	Puranam, Singh & Zollo, 2006 Raisch et al., 2009 Markides, 2013 O'Reilly & Tushman, 2013 Wang et al., 2019
Structural Ambidexterity or Spatial Separation	*Managing tensions by keeping the two business models (and their underlying value chains) separate in two distinct organizations (p.314)*	Porter, 1996 Tushman & O'Reilly, 1996 Gulati & Garino, 2000 Birkinshaw & Gibson, 2004 Ossenbrink et al., 2019
Contextual Ambidexterity	*Designing the appropriate context that encourages and supports each employee to achieve an appropriate level of balance among conflicting demands (p. 316)*	Gulati & Garino, 2000 Raisch et al., 2009 O'Reilly & Tushman, 2011 Markides, 2013 Ossenbrink et al., 2019

Table 2: Sequential, Structural and Contextual Ambidexterity based on Markides (2013)

2.3.2. Ambidexterity in Business Model Innovation

The enablement of ambidexterity in businesses has been explored through perspectives of managerial cognition (Smith & Tushman, 2005), structural or contextual success factors (Chebbi et al., 2015), and dynamic capabilities amongst others (O'Reilly & Tushman, 2011). Through this build-up, ambidexterity can be used in more contexts, so Markides (2013) argues that it is a natural theoretical anchor to also research business model innovation. O'Reilly and Tushman (2013) elaborated that ambidexterity should be applied to phenomena that deal with tensions in ensuring company survival and growth. In this review, we have identified a set of central tensions:

> (1) organizational vs. individual ambidexterity; (2) differentiation vs. integration; (3) internal vs. external knowledge (Raisch et al., 2009); (4) comfort of the past vs. uncertainty of the future (Lewis, 2000); and (5) conformity for legitimization vs. creativity for competitive advantage (McDonald & Eisenhardt, 2020).

As these ambidextrous tensions are explored in research, questions of how to manage and enable the development of ambidextrous organizations through actionable practices must be asked (Stelzl et al., 2020). Managing tensions requires *"a creative way that captures both* *extremes"* rather than a simple either/or trade-off (Eisenhardt, 2000, p. 703). Therefore, the dynamics required to compete with dual business models and to manage ambidextrous tensions are relevant in this paper (Lewis, 2000; Markides, 2013; Raisch et al., 2009; Zimmermann et al., 2015).

2.4. Synthesis of Literature

The thesis has, thus far, presented and linked three theoretical areas: servitization, business models, and ambidexterity. As this paper responds to calls for research on the relations (Khanra et al., 2021; Palo et al., 2019), challenges (Forkmann et al., 2017) and organizational aspects (Markides, 2013) of an emerging servitized business model and its traditional counterpart we target the centerpiece between these areas, as illustrated in Figure 3.

Baines et al. (2020) and Martinez et al. (2017) present temporal progression models of servitization and highlight the need for deeper exploration of each stage. We determined that a value framework that captures a firm's choices and operations (Salum et al., 2019) is suitable to examine the underexplored relation of parallel business models over time (Aagaard & Nielsen, 2021; Khanra et al., 2021). Since business model literature often assumes that companies only have one business model (Osterwalder et al., 2005), the ambidextrous ways of organizing can offer valuable insight on how firms handle the challenges of dual business models (Markides & Charitou, 2004; Markides, 2013). Moreover, the lack of contextual research focusing on strategy and detailed internal factors in ambidexterity (O'Reilly & Tushman, 2011) presents an opportunity to advance ambidexterity literature by analyzing the choices and operational factors that business model servitization research offers (Salum et al., 2019).

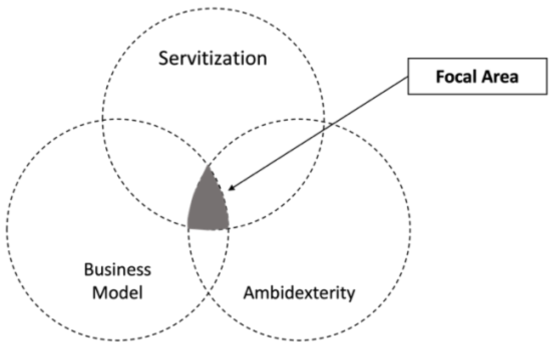

Figure 3: The explorative focal area across three research domains

2.5. Analytical framework

The above synthesis functions as the base for the analytical framework presented as Figure 4. We evaluated the identified theoretical concepts to construct a model which would guide us in analyzing the incumbent's servitization journey. Firstly, the framework aimed to set the relation between the traditional and the servitized business models in a temporal setting to assess the development of the latter. Thereafter, we applied the terminology and logic from the ambidexterity literature to view the organizational aspects throughout the development. This two-stage approach responds to our research questions regarding the development of the servitized business model alongside a traditional business model, and how firms deal with the challenges through organizational means in the servitization process respectively.

2.5.1. Stages of Servitization

Baines et al. (2020) show how servitizing manufacturers go through stages of *exploration, engagement, expansion,* and *exploitation.* As the first three are strongest tied to the experimentation with and implementation of servitized business models, we focused on studying the progress throughout these three stages. This is consistent with the work of Lütjen et al. (2017), who argue that their corresponding three stages constitute the stages focused on when the servitization develops. Exploitation is not included as this stage focuses on servitization practices becoming stabilized within the firm (Palo et al., 2019) and thereby is rather related to how firms balance two parallel exploitations. The transition from stage to stage can, according to Baines et al. (2020), be identified through *tipping points* which are recognized by actions of organizational or individual commitment to advance between each stage.

2.5.2. Value Creation Through Business Model Innovation

Our first research question targets practical challenges in servitizing and how this relates to business models. The 5V-framework from Taran et al. (2016) is used to discuss how the firm practically focuses on certain elements throughout the stages of servitization. In each stage, we elaborate how the elements in focus are different from their traditional counterparts. Although the more common term for these differences may be *differentiation,* which would capture how firms actively differentiate the two (as defined in Baines et al., 2020), we place emphasis on the difference in fundamental needs between the two equivalent business model elements. Instead, as we are informed by empirically expressed needs and practices, we use the term *divergence* to both highlight that there is a difference and that the extent and awareness of the differences can vary.

2.5.3. Ambidexterity

Our second research question deals with the organizational handling of an emerging parallel business model. The rationale follows that the challenges and business model divergence are reflected through the ambidextrous tensions which lead to various considerations for organizational setups. The analysis will relate the challenges and tensions to review their relation to temporal, structural, or contextual organizational outcomes.

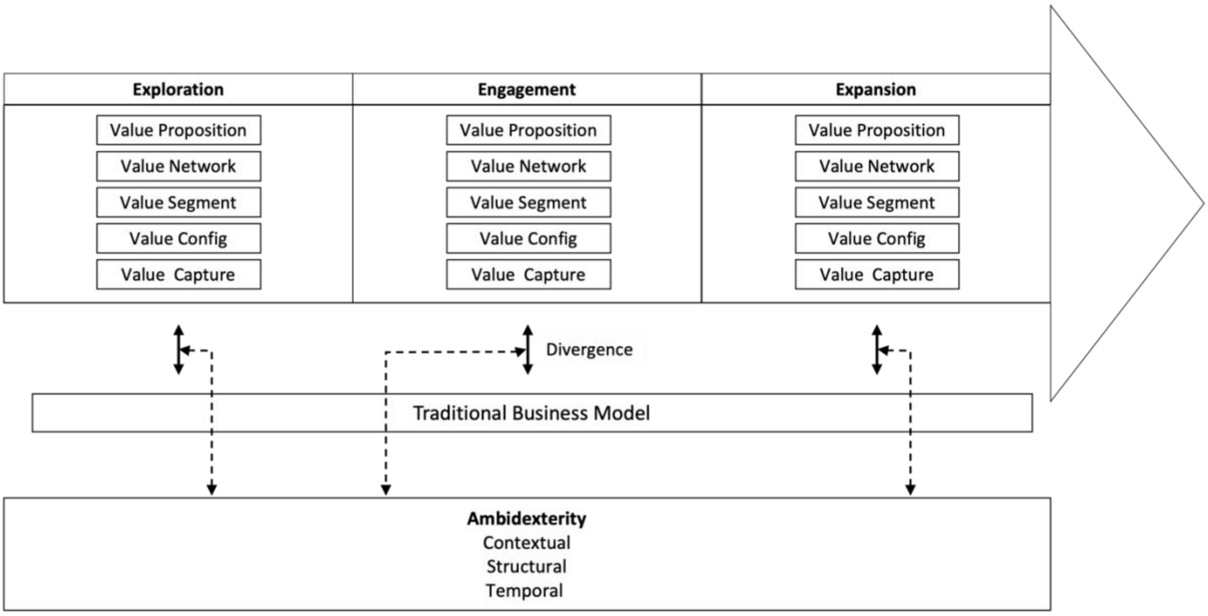

Figure 4: Analytical Framework based on the stages of Baines et al. (2020)

3. Methodology

This section describes the research approach that we chose for this paper. First, we describe the reasoning behind the selection of our research method and how it fits the research purpose and questions (3.1). Next, the abductive research approach in combination with a single case study design is presented (3.2). Third, we elaborate on our data collection in terms of case selection, semi-structured interviews, and ethical considerations (3.3) followed by a description of how the collected data was analyzed (3.4). Overall, we critically reflect upon our method with the intention to improve the quality of the study (3.5).

3.1. Methodological Fit

The questions posed in this thesis relate to a complex empirical phenomenon which calls for a deeper understanding. Therefore, our qualitative approach enables the development of new theoretical propositions based on real-world observations (Bell et al., 2019; Korstjens & Moser, 2017). Despite a constantly growing number of publications referring to servitization (Kohtamäki et al., 2019), there is a lack of practical knowledge on managing the tensions of parallel business models (Palo et al., 2019). Accordingly, we have gathered empirical data to understand how a manufacturer's emergent servitization business model develops in parallel to the traditional one throughout the servitization journey (RQ 1) while also investigating how a servitizing manufacturer deals with challenges of dual business models through organizational means (RQ 2). Case study research is appropriate for answering "how" or "why" questions where little knowledge of a complex phenomenon is available (Eisenhardt & Graebner, 2007; Yin, 2009). A quantitative study would rather measure the frequency or amount ("how often" and "how many") and the relative importance of a phenomenon (Korstjens & Moser, 2018; Pratt, 2009). In light of this, we conducted a single case study that is well suited to generate an in-depth understanding of an underexplored phenomenon (Bell et al., 2019; Eisenhardt, 1989).

3.2. Research Design

In the research design we present the recipe that provided a logical structure for this paper, guided our data collection process, and thus enabled us to develop new knowledge (Bell et al., 2019; Jaakkola, 2020).

3.2.1. Empirical evaluation of Research Question and Case Selection

Having trawled through servitization, business model, and ambidexterity literature in the beginning, we were committed to conducting a case study that offers new and interesting insights. Thus, we started by creating an overview of European manufacturing incumbents that were exploring service-oriented business while exploiting their traditional manufacturing business and consequently were confronted with different challenges throughout the process.

We employed purposive sampling to select cases with the potential to yield rich information relevant for the research question (Bell et al., 2019; Moser & Korstjens, 2018; Pratt, 2009). After reaching out to the potential case companies and establishing our first contacts, we also relied on snowball sampling. Thus, our initial interviewees referred us to further interview partners within the same company but from different departments and global sites to include a variety of perspectives for holistic understanding and reduced bias (Bell et al., 2019; Eisenhardt & Graebner, 2007; Moser & Korstjens, 2018). Altogether, we conducted 7 interviews totaling 411 minutes with professionals that have practical experience in servitization and business model innovation, shown in Appendix 2. The experts were from three potential case companies that traditionally manufactured tangible products, pursued servitization in different industries (transport, construction tools, and household appliances) and offered services on different levels (product, use, result). Our questions were open to grasp an initial understanding of the servitization process and challenges in the real world.

We aimed to explore whether the business model offered a relevant framework and to define the number of cases needed for adequate breadth and depth in findings. Although all three companies were deemed suitable, we developed the stance that conducting a multiple case-study would prevent us from going into enough detail, which is, however, necessary to develop an appropriate understanding of a complex phenomenon such as servitization. Therefore, we assessed the single case study method to be the most suitable approach for our study.

3.2.2. Case Study

We selected the household appliances case, as it pursued different servitization initiatives due to an overall shift of the organization towards service and customer-centricity. The initial interviews already indicated the potential for surprising and remarkable findings due to a bottom-up initiative that was focused on product/software-as-a-service as well as a start-up within the organization offering subscription and payment solutions that both aim to spur the before-mentioned transformation. Additionally, the technical aspects of the product/software-as-a-service and subscription engine increase the relevance of this case for today's digitalized business world.

Data and investigator triangulation were utilized to enhance the process of the qualitative research of this paper. Therefore, we included the case company's annual reports from 2015 until 2020 and the AIC's as well as the initiatives' websites in the data collection and analysis. The organizational data sources can be considered authentic and meaningful, yet we have been aware of the potential distortion, as the presented information likely aims to send a positive message to stakeholders. To get a more holistic view on the challenge-side as well, we held interviews with employees from various levels, departments, and geographical backgrounds. Additionally, both investigators coded and analyzed the data independently at first to then discuss and synthesize the most meaningful interpretations of the collected information together (Bell et al., 2019; Korstjens & Moser, 2018).

3.2.3. Abductive Research Approach

Theory building from a phenomenon, induction (Eisenhardt, 1989), and theory testing through a phenomenon, deduction, are compatible approaches that are integrated in abductive research (Bell et al., 2019; Dubois & Gadde, 2002). Just like Dubois & Gadde (2002) illustrate with their systematic combining model, our paper has been an ongoing process of moving "forth and back" between the analytical framework, the empirical world, academic theory, and our case due to their strong interrelatedness. An abductive approach guides the research with preliminary analytical frameworks and theories from existing literature, while also allowing for concepts and frameworks to emerge and evolve throughout the entire process (Bell et al., 2019; Dubois & Gadde, 2002; Eisenhardt & Graebner, 2007).

3.3. Data Collection

The data collection describes the process of how data was gathered to answer the research questions of this paper. Therefore, we explain how semi-structured interviews helped us in gathering primary data to explore the focal phenomenon and which ethical considerations we have taken to ensure the quality of this thesis.

3.3.1. Semi-structured Interviews

The primary case data stemmed from 16 semi-structured interviews that we held with 12 informants from management, business development, controlling, legal and engineering that had knowledge on the servitization transformation, as can be seen in Table 3. Altogether, the case interviews lasted for 892 minutes. Semi-structured interviews were deemed suitable since this method enables the researchers to better grasp different perspectives and understandings of how the phenomenon proceeds when manufacturers servitize alongside their traditional business model. Furthermore, in this type of interviews informants tend to explain processes, events, and behaviors while also expressing personal opinions around the key phenomenon, which generates an in-depth understanding (Bell et al., 2019; Moser & Korstjens, 2018). Further primary and secondary data were collected from company documents and websites.

Interviewee	Company	Role	Date 1st Interview	Length 1st interview (h:mm)	Date 2nd Interview	Length 2nd interview (h:mm)
2	AIC	VP Software Product	27.09.21	1:03	05.11.21	0:40
5	AIC	Category Manager	08.10.21	1:02	23.11.21	0:32
6	AIC	Products-as-a-Service Director	12.10.21	1:03	16.11.21	0:35
8	AIC	Senior Business Analyst	14.10.21	0:59		
10	AIC	Senior Category Manager Product-as-a-Service	15.10.21	1:07	12.11.21	0:59
12	AIC	Head of Product & User Experience	22.10.21	1:03		
14	AIC	Senior Software Engineer	05.11.21	0:35		
15	AIC	Product Owner SaaS & Services	05.11.21	1:04		
16	AIC	CEO (Subsidiary)	12.11.21	1:04		
17	AIC	VP & General Counsel	12.11.21	1:00		
18	AIC	Senior Category Manager Extended Warranty	16.11.21	1:04		
19	AIC	Services & Spares Business Controller	17.11.21	1:02		

Table 3: Overview of interview participants from the AIC

In order to ensure that the key aspects relevant to answering our research questions were touched upon, we utilized an interview guide that can be found in Appendix 3. The initial guide was based on our literature findings, preliminary theories, and research questions, but was adapted throughout the entire collection process according to the emergent findings and interviewee's experiences. Before starting with the actual questions, we asked the interviewees for their consent to record the sessions to which everyone agreed. Then, we began the interviews with an introduction of the investigators and the research topic. Since we wanted to encourage the interviewees to speak freely and give honest answers, we asked introductory and general questions as icebreakers. Subsequently, we posed open questions about, for example, motivations to servitize, the development of initiatives, business model changes, and challenges throughout the process. We used the sequence of questions flexibly, which enabled us to have a dialogue and ask detailed or probing questions for further clarification when needed (Bell et al., 2019; Moser & Korstjens, 2018).

Overall, the interviews ranged from 30 to 70 minutes in length. Due to the ongoing Covid pandemic, all interviews were conducted via the videoconferencing platform Microsoft Teams to ensure maximum safety for both the investigators and the respondents. Nevertheless, online face-to-face interviews comprise the risk of missing important clues through body language and thus not being able to build rapport as well as losing the attention of the interviewee due to incoming notifications and messages (Bell et al., 2019). Therefore, we have held all but one interview with our cameras turned on. This allowed us to build trustful relationships with our interviewees, get a hold of their facial expressions and body language while drawing their attention to our questions and discussions.

The interviews were held in English, recorded, and transcribed via a built-in function of the Teams platform. However, all transcripts were reviewed and adapted by the authors afterwards to ensure correctness and to prepare the data analysis. Both interviewers took turns in leading the interview and taking notes of the discussion while also asking probing follow-up questions. Multiple investigators have the advantage of fostering divergent perspectives and thus adding to the richness of the data besides strengthening the confidence in the empirical findings (Eisenhardt, 1989).

3.3.2. Ethical Considerations

We integrated the ethical considerations of informed consent and privacy into our data collection and analysis to ensure the integrity of this paper. Accordingly, we informed the respondents about the aim of our study and asked for their consent to participate in the research and to record the meetings. Anonymity and confidentiality were ensured to be able to have open and truthful discussions about sensitive topics such as business model changes, initiative failures, and organizational tensions (Bell et al., 2019).

3.4. Data analysis

We started the data analysis phase as soon as we had conducted the first interviews. The transcriptions were reviewed by both investigators separately for initial open coding to reduce bias as per investigator triangulation (Bell et al., 2019). This process was further based on notes from the meetings, annual reports, and company-specific websites. Then, the research team compared and discussed first-order codes to reduce the amount, merge similar categories, and group them into relevant areas. As a next step, we agreed upon a set of second-order themes, which were organized into the most important aggregate dimensions (Corbin & Strauss, 2008), as exemplified in Figure 5 with the full data structure to be found in Appendix 4. We refer to the aggregate dimensions as *challenge spaces*, as these broadly describe the challenges faced by the servitizing company. In the Empirical Findings (4.1 - 4.7), we also use these dimensions to present the data in a transparent way. Overall, the within-case analysis encompassed a detailed representation of all the respondents' interviews with their individual experiences.

Analyzing in parallel to collecting data was essential to manage the vast volume of text and information, to adapt the interview guide according to emerging findings while also developing a sense for data saturation (Eisenhardt, 1989). To answer the research questions, we integrated the found challenge spaces in a business model categorization to analyze how these related to the traditional business model. The suggested relation between business model discrepancies and ambidextrous tensions are then assessed separately for deeper conclusions.

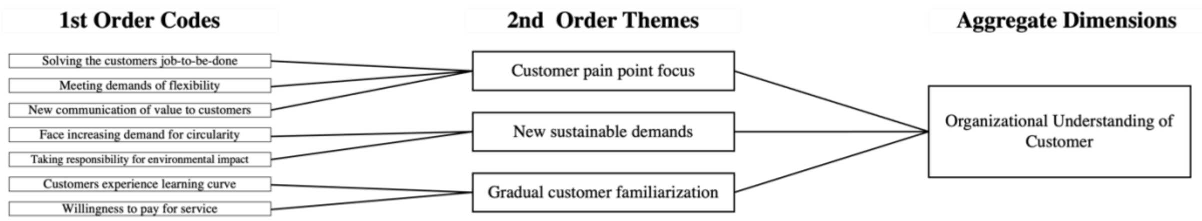

Figure 5: Excerpt from the data structure

3.5. Quality of Study

Our paper aims to present high-quality research in terms of newness, trueness, and relevance. However, quality criteria known from quantitative research such as internal validity, generalizability, reliability, and objectivity cannot properly assess the quality of qualitative research (Bell et al., 2019; Korstjens & Moser, 2018). Thus, to ensure the trustworthiness of our findings, we followed Lincoln & Guba's (1985) well-established quality criteria encompassing credibility, transferability, dependability, and confirmability.

3.5.1. Credibility

Credibility in qualitative research equals internal validity in quantitative research (Bell et al., 2019) and thus indicates whether our findings represent plausible information and interpretation based on the original data and interviewee's worldview (Korstjens & Moser, 2018; Lincoln & Guba, 1985). To account for credibility, we have conducted data and investigator triangulation as described earlier. We tried to capture a holistic view on the transformation by interviewing a diverse range of employees to avoid recall bias, since the process started back in 2017. Furthermore, we sent our research findings to our respondents, so they could cross-check and reassure if we have understood their social world correctly, a technique known as member validation (Bell et al., 2019; Korstjens & Moser, 2018; Lincoln & Guba, 1985; Tracy, 2010).

3.5.2. Transferability

Transferability is the same criterion as external validity (Bell et al., 2019) and defines the degree to which our research outcome can be transferred to other settings or cases (Korstjens & Moser, 2018; Lincoln & Guba, 1985). A qualitative approach and case study design are preoccupied rather with depth than with breadth and therefore tend to be contextually unique (Bell et al., 2019). However, according to Guba and Lincoln (1985, p. 316) whether or not *"findings can hold in some other context [...] is an empirical issue"*. So, to facilitate the evaluation of the meaningfulness of our study for a different milieu, we describe the interviewees' experiences and behaviors as well as the context in which we have conducted our research in very detail. Such thick description aims to enable others to judge the transferability of our findings to their circumstances (Bell et al., 2019; Korstjens & Moser, 2018; Lincoln & Guba, 1985; Tracy, 2010).

3.5.3. Dependability

Dependability parallels the reliability criterion (Bell et al., 2019) and stands for the steadiness of research results over time (Korstjens & Moser, 2018; Lincoln & Guba, 1985). Prolonged engagement is preferred to understand the variations of a phenomenon in the course of time (Tracy, 2010). By considering the time and resource constraints of our thesis we added a longitudinal element to our research by analyzing archival data sources and retrospective interviewing (Bell et al., 2019). Thus, the respondents could describe their experience in terms of the development of servitization and business models within the company from the beginning. Overall, this approach increases the probability that this research produces the same conclusions as if conducted in another time (Korstjens & Moser, 2018; Lincoln & Guba, 1985).

3.5.4. Confirmability

Confirmability in qualitative research represents objectivity in quantitative research (Bell et al., 2019) and determines the degree to which the findings are independent from the investigator and the investigator's own Lebenswelt (Korstjens & Moser, 2018; Lincoln & Guba, 1985). Hence, to keep our research as transparent as possible we have not only described our findings in detail but also the research process from start to finish. Accordingly, we adopted an audit approach and kept the complete records of all phases of our research such as the problem formulation, selection of cases and interviewees, interview transcripts, and data analysis documents. In addition, we only utilized open questions in our interview guide, conducted investigator triangulation, and transcribed the interviews with the help of the videoconferencing platform to reduce bias and not allow personal values in order to ensure confirmability (Bell et al., 2019; Korstjens & Moser, 2018; Lincoln & Guba, 1985; Tracy, 2010).

4. Empirical Findings

In the Empirical Findings section, we start by presenting the background and context of our case (4.1). Then, we describe the identified challenge spaces of the case company during the process of servitization in relation to the traditional business (4.2 - 4.6). Lastly, we summarize the challenge spaces and lead over to the analysis by connecting our findings with the analytical model (4.7).

4.1. Background and Context

The appliance industry company (AIC) has trialed and implemented a range of services after a change in management and strategy moving from a traditional capital goods manufacturer towards a customer-focused company in 2016. The intention was to deliver solutions with best-in-class consumer experiences. During the interviews, the focus was specifically on the following two initiatives that are illustrative for the incumbent's servitization journey as a whole.

In 2017, the manufacturer introduced software enabled hardware-as-a-service to the Swedish market and has since aimed to offer an all-round-carefree-subscription package. The idea was initiated by a team of six employees who believed in the concept and worked on the project besides their regular working hours. One of the founding members indicated that the consumer service business encompasses many different and novel components in comparison to the traditional retail business:

> *"It's changing everything we do from approaching the customer, how we sell, how we book money, how we take in account, how we handle customers, how we support them through the lifetime of the product. All of that." (Interviewee 5, 08.10.2021)*

One year later, a start-up was created as a subsidiary through a consultancy project with the mission to enable extended warranty sales after not having succeeded as an integral department. Subsequently, the venture underwent several changes in management to align the direction and service offering, which now more narrowly encompasses designing and developing payment solutions, subscription engines and analytics services.

"We went through some changes in in our company. We had different CEOs and we pivoted quite heavily after the first year." (Interviewee 12, 22.10.2021)

Further servitization projects and their development were explained by the interviewees, which created a more holistic picture of the organization's servitization journey. In order to increase coherence, the empirical findings from the initiatives will be presented altogether.

4.2. Organizational Understanding of Customer

One major challenge space in the AIC's servitization journey interviewees highlighted is the necessity to understand the novel target group. Since in service business, the customer is central to the offering, the case company needs to understand the traits and needs of their new customer base to be able to design a solution that solves their personal pain points.

4.2.1. Customer pain point focus

According to the interviews, the foundation of understanding the customer is to grasp what the person wants to accomplish with the utilization of a specific product. In this context, a recent shift in customer preferences stirring from ownership towards task fulfilment was described by the participants.

"What is it really that they're [the consumers] paying for?" (Interviewee 10, 15.10.2021)

"We already proved with thousands of machines that have been refurbished that customers are willing to take a machine with some scratches on it because they don't care about the hardware, they care about the cleaning." (Interviewee 5, 08.10.2021)

Customers nowadays also demand more flexibility in terms of commitment and product usage, as one interviewee elaborated:

"And then we saw those issues that we need to let people try. We need happy customers that join us, so we need to let them drop off if they don't like it and we need to be flexible with that." (Interviewee 5, 08.10.2021)

Thus, the respondents emphasized that the value creation and service experience customers can expect should be clearly communicated to the new type of end users to create awareness about the service offerings and its advantages. However, an initial lack of understanding misled the team to market the service based on wrong incentives and thus did not fetch the intended target group, as the following statement shows:

> *"We needed to change how we talk to people. We cannot talk about your time and that we free up time. [...] We need to talk tech, real benefits, and price. And we need to talk about what we're doing." (Interviewee 5, 08.10.2021)*

4.2.2. New sustainable demands

Yet, the recent change in customer preferences has been a result of the overarching sustainability movement, which is perceived as an industry driving trend for the AIC, according to the CEO:

> *"Sustainability is increasingly important to consumers, and therefore a key driver of demand." (CEO, Annual Report 2018)*

Accordingly, the employees have highlighted the importance of taking responsibility for the organization's impact on the environment. There is an ongoing internal discussion to shift away from manufacturing as much volume as possible and to expand overhauling used products instead. This way, the AIC aims to prolong the product lifecycle, cut waste, and reduce its CO_2 footprint, as the following statement shows:

> *"There's another interesting word: borrow the functionality to wash your clothes for X crowns a month, right? And then you unsubscribe, so [the AIC] will go pick up your washing machine, charge you some kind of circle fee and then refurbish this one and rent it out again. So, then we have gone from the linear business approach that we are working with in this company and in many other industries to a more circular approach." (Interviewee 10, 15.10.2021)*

4.2.3. Gradual customer familiarization

In general, the company's transformation has resembled a stepwise adaptation cycle full of learnings about topics such as customer preferences, value creation, and sustainable development, as the subsequent interviewee suggested:

"And as a big company you want to run initiatives in parallel and learn and then leverage on what actually can create the best value or the best learning." (Interviewee 16, 12.11.2021)

It was mentioned how underestimated the customer journey is even though it also entails major learning aspects due to the relative newness of not owning household appliances. Interviewee 10 who is involved in B2B2C and DTC servitization initiatives has observed the following:

"It's definitely equally, if not more, a learning curve for our customers." (Interviewee 10, 15.10.2021)

The manufacturer and customer learnings are intertwined. Based on the usage of IoT enabled products, the AIC receives continuous data to be examined for business development and service improvement. Thereupon, marketing and sales create illustrative campaigns that target existing and potential clients to explain the subscription's functionality for them to develop a willingness to pay over time.

4.3. Product-service Marketing

Due to the novelty of advanced services within the AIC, employees recognized the uncertainty about marketing the new offerings as another relevant challenge space.

4.3.1. Deepened consumer relationship

Originally, the main business of the case company consisted of manufacturing home products and then distributing them through its network of large retailers, a traditional business-to-business approach. With the implementation of service offerings that directly target end consumers in most instances, the respondents touched upon the matter of balancing the relations with both the retailers and the consumers, as described below:

"In those streams [B2B], there are millions rolling around. We cannot come here and interrupt those streams because that's the bread and butter of the company." (Interviewee 5, 08.10.2021)

"And the linear business and the relationships we have built up over 100 years with retailers, we need to be conscious of that." (Interviewee 6, 12.10.2021)

Since the AIC's traditional focus had been mostly on retailers some interviewees stated that the product development became centered around what the merchants believed they could sell, as the following statement exemplifies:

> *"So, you can argue that half of our [traditional] product development we do not do it for users. We do it for retailers." (Interviewee 2, 05.11.2021)*

Yet, it was emphasized in the interviews that it is key getting close with consumers to not only be able to design products and services according to their needs and preferences but equally to create meaningful interactions with them. The manufacturing incumbent sees the new service and subscription offerings as means to establish and develop individual touchpoints and thus as an opportunity to actively shape the consumer journey itself.

> *"We want to build up these long-term sustainable relationships with the consumers where actually they see us as the solution to their problem rather than necessarily traditionally a retailer." (Interviewee 6, 12.10.2021)*
>
> *"So, [the AIC] wanted to gain back these touchpoints with the consumer." (Interviewee 16, 12.11.2021)*

4.3.2. Market sensing through consumer input

The participants believe in the future and success of subscriptions for their own business and reflected upon different possibilities to get a better understanding of the overall market, as Interviewee 6 exemplified:

> *"I did a presentation about why subscriptions are going to matter and as part of that worked out that in this household, we have 36 subscriptions live at this moment in time. For everything from washing capsules to coffee to the normal kind of TV and all those other bits and pieces. But actually, there's a lot you can learn as a consumer by really thinking about your experience with these organizations as well." (Interviewee 6, 16.11.2021)*

Additionally, it is essential to gather consumer feedback and investigate what other companies within the same and unrelated industries are working on.

“But you cannot learn all your answers by only looking internally. You have to go out. You have to ask customers. You have to understand what people in other industries as well as your own industry are doing, and you have to come prepared to share boldly and steal with pride.” (Interviewee 6, 12.10.2021)

4.4. Managerial and Employee Understanding

The managerial and employee understanding is an important challenge space, as participants indicated a range of difficulties for service initiatives that arise in case of lacking comprehension.

4.4.1. Exponential reduction of internal resistance

Several respondents have indicated that within the AIC there exists certain disapproval of ideas that have not been developed according to the organization’s innovation process and do not comply with the traditional way of doing business. A possibility to overcome such opposition is to present convincing facts and figures, as Interviewee 2 stated:

“And you face that resistance and then you need to basically be extremely data driven and defend your value creation with numbers.” (Interviewee 2, 27.09.2021)

Even entire incumbent departments might feel challenged by new ventures that work differently in terms of speed and flexibility. Thus, working together instead of trying to outcompete each other will lead to more success for all stakeholders involved, according to the interviewees:

“My opinion having always worked in smaller companies and start-ups is that big corporations have their big IT department which work still in slow and old models and they're quite resistant to change. [...] We support each other in many topics now but like I said, it's been three years to come to this point where we have a good collaboration where both parties don't see each other as threats but as a support." (Interviewee 12, 22.10.2021)

Accordingly, an interviewee summarized the importance of developing an understanding for innovation and service transformation to move forward and tap the full business potential as follows:

> *"We must start to embrace these models and the built-in resistance in all organizations we have to work with that." (Interviewee 10, 15.10.2021)*

4.4.2. Parallel organizational cultures

The participants have noticed that with the multiplicity of business domains also a diverse set of cultures has developed. The traditional incumbent's culture was described in two ways. On the one hand, internal politics tend to be conservative and pose a significant challenge for innovation and transformation. Employees in this environment rather avoid projects that could jeopardize the existing business, as the following statement exemplifies:

> *"It's an extremely risk avert culture, and when you're venturing down unknown territory, you need to have some kind of that risk appetite, right?" (Interviewee 2, 27.09.2021)*

On the other hand, the company also supports its people that have intrinsic motivation, innovative ideas and want to experiment around it.

> *"A real positive is this ability that if you want to give something a go up to a certain level, you can give it a go and then we'll learn what's the best way to do it. There is a culture of being allowed to do this low-level experimentation." (Interviewee 6, 16.11.2021)*

Thereupon, concepts that prove initially successful are permitted to evolve into integral initiatives, which oftentimes establish an experimental culture to encourage creative thinking and flexible working, as explained below:

> *"We are seen as this agile part of the company that does quick MVPs and can bridge things." (Interviewee 12, 22.10.2021)*

> *"The go-to-market strategy started out as we really need something agile, and we need to scale, and we need to be able to change it quickly. We know that we will get it wrong the first time. We know that the messaging will not be perfect. [...] We knew that we are going to talk in a way that people don't like. So, we iterated quickly." (Interviewee 5, 08.10.2021)*

"With the startup mentality, every time the guys got to a barrier, they created a way around it." (Interviewee 6, 12.10.2021)

4.5. Company Resource Configuration

The interviewees illustrated that the demand for human capital, diverse capabilities and information technology in new service ventures is vastly different to the existing resource set-up within the parent company presenting an essential challenge space.

4.5.1. Talent management

A key aspect of the AIC transformation is to create a new talent base with a diverse set of skills from within and outside the company.

"You also have to be aware of 1) the existing capabilities and 2) the speed of ability to change those existing capabilities." (Interviewee 6, 12.10.2021)

"We have of course over time recruited people more and more with that focus of building competence within the teams." (Interviewee 17, 12.11.2021)

The initiatives' sales teams are responsible for distributing the newly established services and sell directly to consumers instead of facing retailers, a change that needs to be carefully considered and incentivized, as the following interviewees state:

"The sales activity in the contact center requests special knowledge and skills from the people and we have to investigate a lot to select the best." (Interviewee 18, 16.11.2021)

"What are the incentives for different parts of the organization to change?" (Interviewee 10, 12.11.2021)

4.5.2. Organizational and team structures

Initially, teams around recently founded initiatives are rather small and on average tend to include between two and ten members. To enable fast scaling, several interviewees indicated that they need to access financial and human resources from the traditional business, which differentiates them from fully independent projects or start-ups.

> *"I have a lot of time and energy and effort from people in controlling and marketing [from the AIC]. So yeah, direct team, very small [three members]. But we make use of the resources that are available in the organization to support us." (Interviewee 6, 12.10.2021)*

Being part of a global organization, however, came with the responsibility of balancing local market needs while also adhering to central management expectations, as Interviewee 12 reported:

> *"We need to build a product [software for consumers] that we know is going to be used and this requires alignment with the local teams. An added factor on top of this system is the central team because very often they want to have a say about these solutions and then we have to align with them." (Interviewee 12, 22.10.2021)*

4.5.3. IT and supportive systems

IT systems represent another essential prerequisite for IoT-enabled business to keep track of customers, evaluate usage patterns and hence offer an immaculate experience according to the interviewees. Yet, the local markets are independent to some degree and therefore have individual systems that are not always compatible with changes initiated by the central team, as the following statement illustrates:

> *"So, today every local cluster almost has its own system, for instance, for managing claims or for managing sales. [...] And it's really a hassle to keep track and to integrate with all of them because some are so old as well that it's impossible to do any adjustments and when we were planning to go live with subscriptions, it was like: Oh yeah, but our system cannot support XYZ. But this is like a basic requirement, so we can't really then go live because their system doesn't support it." (Interviewee 15, 05.11.2021)*

The manufacturer's traditional main system in the retail division does neither fulfil the requirement of being able to handle the large number of customers in DTC initiatives.

> *"Our reason of existence right now I would say it's the subscription system. [The AIC's traditional system] cannot handle so many individual consumers, so that's something our system alleviates, and this is where we see that people always reach out to us." (Interviewee 12, 22.10.2021)*

Consequently, the incompatibility of the central and local systems to support subscription-based business has led the employees to work manually in spreadsheets. This in turn has slowed the scaling pace, as one of the controllers from the beginning in the hardware-as-a-service initiative experienced:

> *"I mean we didn't have at that time the set up to do for example credit checks on our own. And all the flows in the system were not ready for this. We are actually still doing part of the flows manually. [...] When the financials can be more automatic, I would say we will be able to push more on the business growth." (Interviewee 8, 14.10.2021)*

Interviewees highlighted the necessity to better align projects together with the business and IT teams. This way engineers could early on contribute expert technology insights during business ideation and development, which might prevent manual accounting later on, as stated below:

> *"Businesspeople will spend months deciding on how they want the value proposition to be, how they want the sales strategy to be. And then they're done like oh, we want this next month, not understanding that software development also takes time and design. And the software development team needs to understand what they [the business team] have decided." (Interviewee 12, 22.10.2021)*

4.6. Financial Structure

The final challenge space is that of financial structuring and how services, especially subscriptions, lead to critical financial and legal changes according to employees.

4.6.1. Balance and P&L effects

So far, the AIC had been used to transactions of the full purchasing price by retailers. The recurring subscription payments, however, distribute revenue over a period of several years. In comparison to selling, the AIC keeps ownership of the products when renting out, which increases the overall business risk due to the possibility of payment and product failure, as Interviewee 6 summarized:

> *"There's a fairly big cash flow impact potentially if you are doing this within your own balance sheet and they remain your products. Actually, there's a significant difference in when you realize the profit." (Interviewee 6, 12.10.2021)*

In order to avoid individual shortfalls in payment, partnerships with financial institutions that are experienced with consumer credit checks, such as payment providers, have been set up.

> *"Due to this new approach we have to work with the finance sector as well in some way. You know in the B2B we have very good credit checks etc. but when it comes to DTC it's a new world. We have to adapt there." (Interviewee 10, 12.11.2021)*

4.6.2. Financial and legal comprehension

As a result of the novelty of services and subscriptions within the manufacturing incumbent, there was a lack of understanding how to work with the new financial and legal context, as the following respondents elaborated:

> *"I think it's more that adaptation and then proving the case for different stakeholders. Are you able to follow up the financial situation in a robust way?" (Interviewee 10, 15.10.2021)*

Thus, a major step is to create awareness among employees and leaders to understand how the initiatives work financially and legally as well as why they add value to the core business.

> *"There is a massive need to engage and inform, listen and discuss. [...] It's not just in terms of controllers it's about leadership and management teams understanding that the flows financially, and particularly in terms of your profit line, look significantly different." (Interviewee 6, 12.10.2021)*

> *"From a legal standpoint it follows a lot of consumer law that needs to be taken into account." (Interviewee 17, 12.11.2021)*

In summary, the five main challenge spaces deduced from the interviews are organizational understanding of customer, product-service marketing, managerial and employee understanding, company resource configuration, and financial structure.

4.7. Transforming Empirics to Analysis

Throughout the interviews, it became apparent that the temporal aspect played a major role in the servitization process. Although the respondents utilized different terms such as ideation, navigation, scaling, and growth, they described a stagewise development over time. Therefore, we allocated the challenge spaces that into three sequential phases, as can be seen in Figure 6. Since these phases corresponded well with Baines et al.'s (2020) suggestion for progression in stages (exploration, engagement, and expansion), we applied the same terminology.

Due to the vast difference between the manufacturer's traditional and servitizing business, the exploration stage encompasses the managerial and employee understanding and the financial structure as main challenge spaces. To progress further along the servitization journey, this data shows that it is essential to create awareness for the motivation to pursue servitization and the impact it has on the financial outlook. In the engagement phase, there is a higher density in challenges as it could be seen as the most critical stage to define an initiative's future success or failure. During that time understanding the new type of customer and targeting them in the right way through appealing marketing are difficult tasks the teams face. The general understanding continues to be a challenge to convince colleagues and executives why it makes sense to invest resources into the venturous initiatives. Finally, most challenge spaces such as understanding the new customer, marketing the novel product-service, and a general understanding of servitization stabilize in scope in the last stage. Yet, the resource commitment stays relevant due to the increasing demand for human and technological exploration, while the financial structure is increasing in significance as the impact on the balance sheet is starting to become noticeable.

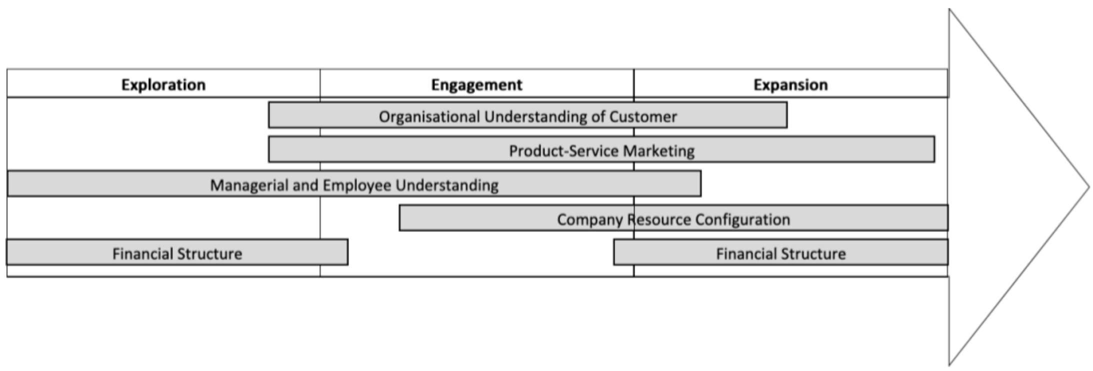

Figure 6: Allocation of challenge spaces to servitization stages

5. Analysis

In this section the analytical framework is applied to understand how the emergent servitized business model develops in parallel to the manufacturer's traditional business model as well as how the manufacturer deals with the identified challenges through organizational means. First, we describe how the empirical data is used to derive which business model elements have been in particular focus in each stage (5.1). Then, we analyze each element in focus, per stage, to detail its divergence and explain how it came into focus (5.2). Following this, we describe how the firm has organized around the challenges throughout the stages from an ambidextrous perspective (5.3).

5.1. Challenge Spaces and Business Model Divergence

In order to find answers to our research questions, we map the challenge spaces into the stages they appeared in (4.7). Thereupon, we critically establish logical connections between the challenge spaces and the business model elements. Through this two-stage allocation, the outcome is a temporal progression of how business model elements come into focus based on the empirical data. In each stage we assess how the challenges relate to the divergence between the traditional and the emergent business model elements, visualized in Figure 7.

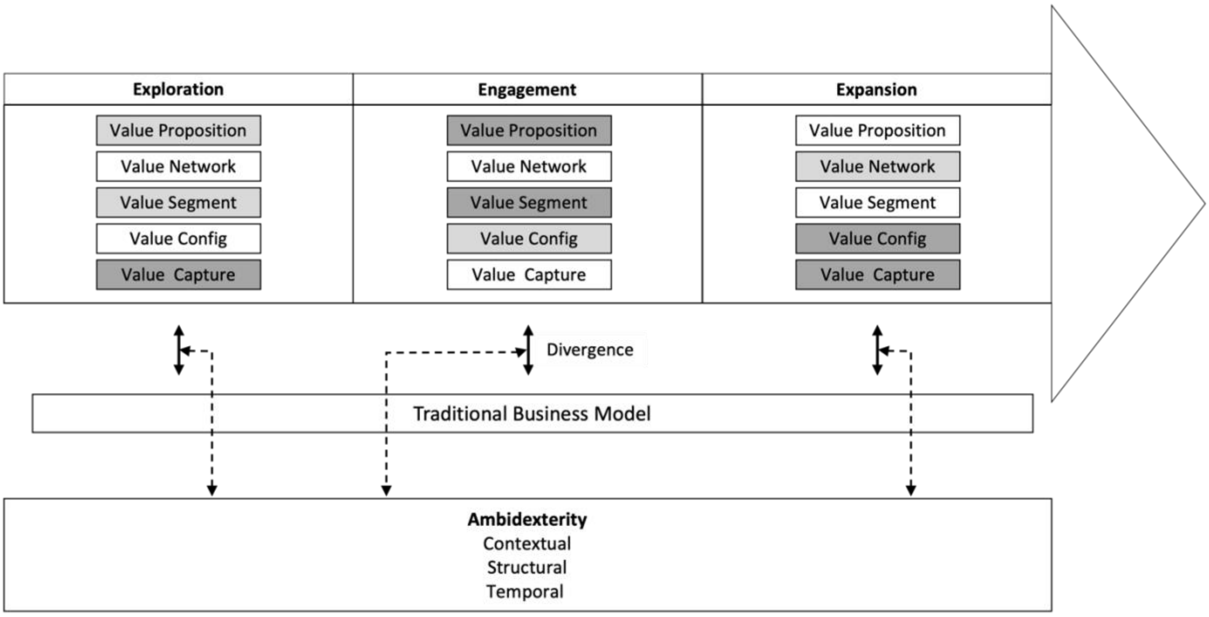

Figure 7: Business model divergence identified from allocation of challenge spaces

5.2. Business Model Divergence in the Servitization Process

> *"The challenge with attempting to manage two different business models in the same market is that the two models (and their underlying value chains) could conflict with one another." (Markides & Charitou, 2004, p. 23)*

Beginning with the explorative stage of servitization within the focal firm, followed by the engagement and expansion of servitization, this subchapter analytically reviews how the identified challenges relate to business model elements and their divergence from the traditional business. This aims to outline how a servitized business model emerges in relation to a traditional, product-centric, business model.

5.2.1. Exploration of Servitization

The exploration stage targets the initial search and trials required to make the organization confident that the servitization opportunity is valuable to pursue (Baines et al., 2020).

Throughout this analysis, the first identified key challenge space included being able to explain the novel financial revenue and profit model within the organization. This was followed by the need to exponentially reduce resistance for the specific financial model. From the business model perspective, the specific challenges show how attention was placed mainly on three aspects: Firstly, the value capture as it was fundamental to the new financial model. Secondly, the new value proposition based on the value capture. Thirdly, the value segment which was implicit in the new focus of capturing value.

> *"It [the financial setup] is all kind of rigged towards the relatively small set of customers that has a huge part of revenues while in a customer business world you have, you know, millions of customers." (Interviewee 2, 27.10.2021)*

Value Capture

The interviewees most actively involved in the early stages of the servitization journey highlighted that their initiative meant to change everything they do, including marketing and approaching customers. However, the main initial hurdle internally related to the managerial understanding and acceptance of the way the initiative aimed to capture value.

> *"In the beginning, I was alone in a room against 20 controllers and finance people, and it's like 'what are you doing and why is this going on?" (Interviewee 5, 08.10.2021)*

To create an understanding for the financial model, it needed to be clearly defined by the initiative founders. Although not specified in technical terms, members of the founding team discussed the business change in terms of new ways of capturing value from already existing products that simply did not reach the market potential they reckoned it had. This, in turn, led them to proceed into servitization exploration with the intent to extend the offering of their traditional products through a subscription or lease model.

> *"That leads to the fact that you know if you will do a service, you shift the financial reporting logic towards a subscription metrics, right? You are using churn. You are using average revenue per user. You know the logic to calculate and understand your growth and your value creation." (Interviewee 2, 27.09.2021)*

Value Proposition

The participants described their initial value proposition in broad terms rather than as a unitary defined proposition. The implementation of services was partly driven by the idea to find a new method capturing the value of their product. Thus, the initiative founders developed a value proposition based on access to the product as differentiator in comparison to the traditional product benefits. The hurdle they addressed was that the traditional price point was too high for many customers who mistrusted the concept due to their perception of lower-tier products.

> *"We knew that customers thought: This is never going to work in my home. So, I'm not going to buy something for 6000 (SEK) and try it, So I'll try something for 2500 (SEK). And then I'm going to know." (Interviewee 5, 22.11.2021)*

This explained one driver for introducing the new financial model. It also ties the value proposition of the service offering to the traditional business model in terms of product but to the value capture in terms of services.

Value Segment

Although the value segment in the explorative stage diverged in the sense that the consumer focus was novel, the shift of value segment was implicit in the goal to capture value from more customers. The firm tried to grow the market for its products through services targeting consumers directly. The interviewees explained that the redefinition of the financial system was fundamental in getting access to customers they previously defined as non-users. However, there were no activities in the stage that indicated a focus on further detailing the value segment. Accordingly, the seemingly large divergence from the traditional business' customers was less of a business model element of focus in this stage. Instead, it was implicitly divergent due to the new value capturing mechanisms.

Focused Business Model Elements in the Explorative Stage

As the analysis above points to, the three business model elements can affect each other. However, the focus for the company was generally centered on the capture of value. In terms of divergence from the traditional business model, the value capture was the clearest divergence for the people involved as it stemmed from their motivation to servitize. Similar motivations have been described as one of the most common types for choosing to servitize (Malleret, 2006; Raddats et al., 2019). More specifically, this is found in cases where a decline in sales instigates servitization to capture value from existing products in new ways (Sawhney et al., 2004). Seemingly, the business model element that has the clearest divergence, and thus comes into focus, becomes dependent on the motivation for servitizing. The analysis also suggests that the same element can be the driver to gain initial managerial support. However, independently of motivation, the exploration likely benefits from the focus on value capture as it creates understanding amongst key stakeholders for seemingly complex service offerings. This support is outlined in servitization research as one of the key necessities to embark on a servitization journey (Martinez et al., 2017). Surprisingly, while managerial recommendations from leading scholars highlight that the clear value proposition is the key point for starting to servitize (Martinez et al., 2016) we see that the value proposition can be less specific in the beginning.

5.2.2. Engagement in Servitization

The engagement stage targets the broader evaluation and demonstration of the product-services in the company (Baines et al., 2020) and the transition from exploration to engagement in the servitization progression can be identified through indicating tipping points.

In the focal case, we found this tipping point through two distinct moves within the company. The first distinguishable tipping point was the separate subsidiary targeting to insource and accelerate the company's possibility to offer warranty services. This highlighted the managerial support for the firm to proceed into servitization and to advance service-offerings surrounding the firm's products. Secondly, the organization in this stage acknowledged servitization further through the creation of a specialized company unit aimed at amplifying the servitization efforts.

> *"We set up a new team called products-as-a-service. And we are there to test, build and scale a new set of business models for the company. [...] Effectively these are additional channels alongside the existing traditional linear business model that the company has." (Interviewee 6, 12.10.2021)*

The challenge spaces in this stage were predominantly threefold: the understanding of the new customer, the marketing of the product-services, and the configuration of the company's resources in terms of people and systems. As these inform where the strongest attention to certain business model elements is in this stage, we conclude that three business model elements were in focus. Firstly, the value segment as the aim was to comprehend the new customers. Secondly, the value proposition as it enabled the accuracy in marketing. Thirdly, the value configuration as the increase in servitization also created further complexities in required system support and workforce composition.

Value Segment

The notion of deepening the relation with the end user became apparent as a key aspect of the specialized unit. One of the early team members argued for it as a fundamental goal.

> *"[We had the goal of] getting a direct relation with the end consumer in a monthly billing way, but also the whole set up of dealing with customers"* (Interviewee 10, 15.10.2021)

After the initial realization in the former stage that there was some interest in the product-service, the new customer relations were increasingly revealed as relevant both as means to market the offer and to sell further services in the future. Also, within this stage, as more initiatives started to emerge, additional groups of customers such as landlords were deemed as targets for the servitized offerings adding to the centrality of a value segmentation development in the engagement stage.

Value Proposition

As the initiatives progressed, partially due to the increase in knowledge of the customer, redefining the notion of what the firm was offering became more central.

> *"[It is] not the sales channels per se [that changes], but the actual product you need to start to kind of redefine."* (Interviewee 2, 27.09.2021)

The same shift in the organization can be seen through the establishment of an aftersales unit which frames its value proposition for spare parts and warranties by addressing customer needs. The new attention to what the servitized offerings means for customers was described by an employee:

> *"We believe that the consumers start to accept that this subscription model has a huge benefit [for them]."* (Interviewee 18, 16.11.2021)

However, this shift also proved necessary to further gain attention and approval from a wider part of the business. As a result of this, interviewees argued that the extension of product-service offerings to additional groups, such as landlords, created more complex value propositions as they target the requirements of both the intermediary and the end-user.

Value Configuration

The value configuration covers the aspects of human and system resources needed for the servitized offering's success (Taran et al., 2016). In this study, the increasing engagement in customer relations, led to more focus on the diverging needs in resource set-up between the traditional and servitized business. Regarding the resource configuration challenge space, the interviewees argued that new skillsets are needed to develop the services further.

The engagement stage required the manufacturer to also reassess the systems to support the servitized offerings. In this case, new engineers were hired to structure the back end of the servitized operations. This order of progression from customer complexity to configurational needs was illustrated by several employees. For example, a many of the back-end operations were done manually in the explorative stage before increasingly turning into a focal element in the engagement stage.

> *"We don't have the proper setup to have it completely in the [back-end] system. It's going to happen soon, but we're doing it manually in spreadsheets." (Interviewee 8, 14.10.2021)*

Focused Business Model Elements in the Engagement Stage

In conclusion, the focal case shows that the engagement stage came with an increase in complexity regarding which value segments could be targeted, how the value proposition was iterated and gained traction, but also how the firm needed to build back-end capabilities to address issues in value configuration. This focus is consistent with the ideas of Baines et al. (2020) who state that the value proposition comes into focus in this engagement stage. However, as their study pointed to the focus being caused by the need to prove the service concept further internally, we find that the focus may come from the advancing relations which are enabled by the already created interest. Additionally, the stage is not only a matter of engaging but also navigating and setting direction for where and how to proceed with the servitization of offerings. This is closer related to the stage as described by Lütjen et al. (2017) in which the stage represents navigating by anchoring support in the organization for the wider direction of product-services. We highlight that the firm, in the engagement stage, developed a better understanding of their customers while simultaneously broadening the servitization concept to additional segments.

Explained in the sense of divergence, this analysis suggests that an increasing understanding of how the needs of new value segments diverge, and thereby potential value propositions diverge, increases the complexity of the value configuration. As a result, the added complexity may force the organization to identify the diverging needs for new talents and technical systems which is represented by the value configuration. The findings equally relate to the prescriptive work of Davies et al. (2006) who highlight that upon the creation of a fundamental customer facing operation, supportive operations come into focus. In the context of the business model development, this means upon gaining support for a first few customer-facing offers, the firm subsequently needs to assess the human and technical resources essential to support the service delivery.

5.2.3. Expansion of Servitization

Expansion of servitization in previous studies relates to questions such as how to expand initiatives to an organizational level and how to overcome production-centric legacies (Baines et al., 2020). In the focal case, not all parts of the product-service business have reached this stage of maturity. Still, some initiatives are in the process of scaling or currently entering the expansion stage, therefore those will be in focus. We identified the tipping point into expansion in the interviewees' description of scale and expansive growth. For example, we found it through the clearly expressed notion that several geographically dispersed markets actively started working with recurring payment offerings.

The challenge spaces identified in the expansion stage of the firm's servitization journey led us to identify three business model elements as main drivers: Firstly, the value configuration as it addressed the need to coordinate more complex and extensive operations. Secondly, the value network to arrange logistical operations which couldn't be handled by the firm itself. Thirdly, the value capture element as the service business started to financially impact the company's main operations and as it enables the expansion to more markets.

Value Configuration

Although coming into focus in the engagement stage already, the resource and activity aspects in the value configuration became increasingly important as the firm tried to enable servitization in more markets and for more products. For example, managers in charge of the subsidiary shifted the focus from working with extended warranties to purely focusing on the value capture mechanisms to enable subscriptions. Thus, the subsidiary started to introduce a unitary support system for any subscription across markets. One example of this progression comes from an employee of the subsidiary:

> *"I think the biggest issue was because we had same products or offers being sold in different countries, but we had different systems, but we're dealing with it." (Interviewee 15, 05.11.2021)*

The internal aftersales department took over more responsibilities regarding the warranties whilst the subsidiary specialized to enable standardized support systems. Several interviewees also mentioned that this focus is rooted in the traditional ERP system which was not suitable for the new customer segments.

Value Network

Although logistics and service delivery are considered mainly within the value configuration element (Taran et al., 2016), we find that in the expansion stage it becomes increasingly intertwined with the value network. In the focal case, employees working specifically with the testing, setup and scaling of servitized offers emphasized two crucial differences in terms of partners. Firstly, connecting with customers was previously managed through retailers, thus, the new relations came with elements of risk for the traditional relations.

> *"If you do things which your retail partner sees as challenging or against their business, you run the risk of them choosing to put their focus with one of the other appliance manufacturers." (Interviewee 6, 12.10.2021)*

Interviewees also highlighted the need to create new partnerships that help solve the logistical challenges and advance technical as well as financial solutions for the firm to be able to offer the value proposition they promise. Also, this was underscored as different from the traditional business.

Value Capture

Within the value capture element lies the concept of monetization, that is how and when payments are collected for the product or service (Baden-Fuller & Mangematin, 2013). For the focal company, both the how and the why became increasingly relevant to handle upon scaling servitization within the business. The company faced two challenges in this regard. Firstly, the AIC had to deal with the aforementioned system separation. Therefore, in the value configuration, the subsidiary of the focal firm shifted its attention to purely enable payment mechanisms of scale.

Secondly, the consequences the new value capture setup would have on financial reporting and balance came back into focus as scale became more impactful on the financial reports. This also highlighted that the financial setup should not be thoughtlessly combined with the traditional business as it would affect the balance sheet thoroughly. A controller explained it in relation to scale:

> *"We also need to find partners to finance the business model, however, it will probably hit also [the] P&L and balance sheet across the company." (Interviewee 19, 17.11.2021)*

Focused Business Model Elements in the Expansion Stage

Based on the reasoning from Kindström & Kowalkowski (2009), it seems sensible that the firm, in an expansive stage, experiences growing complexities and must start industrializing much of its fundamental configurational work. We see that some level of unitary supportive systems is needed to further the expansion as the analysis points to the even more advanced divergence in needs of supportive systems. Also, the stage in this case denotes a convincing relation, especially in the digitally infused types of servitization, between the elements of value capture, configuration, and network. The idea of scale, which is found herein, required the manufacturer to re-assess which capabilities it could provide on multiple markets and/or for multiple product-service offerings. Thus, that the firm targeted the fundamental servitization element from the explorative stage, i.e., the aspects of value capturing, becomes rational in making it a starting point for further servitization.

In the theoretical perspective of servitization, this draws towards the reasoning that the value configuration in scale will pertain to the need of new capabilities and support (Parida et al., 2014). Equally, researchers have argued that the complexity of configuration creates increased needs for better network management (Baines & Lightfoot, 2013). In servitization alongside a traditional business, this however means that the firm does not only need to assess new partners for identified needs, but also balance the relation with the traditional partners of the firm. This becomes particularly important in maintenance systems, spare parts, and logistics (Cohen et al., 2006; Davies et al., 2007), which is made clear in this stage. In summary, we conclude that adjusting the divergent needs in value network and value capture are driving the value configuration complexity in this stage.

5.2.4. Servitization Stages and Business Model Divergence

Through this first section of our analysis, we highlight the most important findings regarding the parallel development of a servitized business model. Firstly, the focal elements in innovating the new business model seem to logically relate to what the motivation for servitizing is (Raddats et al., 2019) and how this diverges from the traditional business model. As an extension of the work by Lütjen et al. (2017) this study formulates that the barriers found in exploration are overcome through exploring and proving fundamental mechanisms in the focal business model elements. However, a larger strategic formulation of servitization strategy may emerge first in the engagement stage of servitization. This is derived from the configurational aspects of servitization, such as creating strategic teams and by deepening the understanding for the target value segment(s). While previous research argues that a multiplicity of servitized initiatives in a firm creates a need for more strategic alignment (Lightfoot et al., 2013), this study can portray when this becomes relevant. As servitization in this stage increases in value segment and value proposition complexity, the alignment of underlying value configurational items such as systems and skills, starts to become relevant. Finally, when progressing into expanding servitization, the organizational aspects of enabling the multitude of complexity requires firms to target mainly the configurational aspects of their business model. Equally, network management requires focus mainly in the expansive stage due to the divergences in network relations from the traditional business model, and the configurational demands for new relations.

5.3. Ambidextrous Organization in Servitizing

The second part of this analysis explores how the focal firm has organized ambidextrously when dealing with their challenges. In each stage, we relate these to the relevant tension concepts found in the ambidexterity literature. The case involves both contextual and structural ambidexterity to varying degrees in the three stages, however, temporal ambidexterity in its traditional definition (as described in 2.3.1) is not particularly identified.

5.3.1. Exploration through growing into Contextual Ambidexterity

The strategic direction set in the beginning of the firm’s servitization journey, aiming to offer best-in-class consumer experiences, highlights the apparent tension of moving away from the comfort in the past which consisted of selling a product towards integrating a degree of uncertainty by exploring new ways of creating value based on an existing product. This is a common concern (Lewis, 2000) which on a larger scale leads to organizational ambidexterity (O'Reilly & Tushman, 2011; O'Reilly & Tushman, 2013). This was described by interviewees as a tension underbuilt by the traditional aversion to risk. Simultaneously, the study highlights that in situations where servitization emerges from managers closer to operations who realize a need for change, structural separation may be unwarranted.

For example, the pioneering initiative required a certain level of managerial support for the servitization to progress into a stage where they could build up internal engagement. In this, the individuals that realized a necessity for change responded to the tensions and the comprehension challenge by creating a small task force that focused on gaining support for the initiative. Regarding this, the interviewees highlighted the benefit of their product knowledge and the executive backing they could receive due to the level of integration they had with the organization. However, this form of organizing came with a certain slowness that required the team to work in a “hybrid” relation to the traditional business. This meant sidestepping the regular procedures when needed which created additional uncertainty and thus political tension.

Based on this we derive that dealing with tensions through contextually exploring new ideas come with the integrational benefits of knowledge and support. Yet, it also proves that leading individuals who act in this environment must have a certain degree of internal navigational knowledge to deal with the political tensions that arise. This form of organizing fits into the definition of contextual ambidexterity by O’Reilly and Tushman (2013).

5.3.2. Engagement in dual modes of Structural Ambidexterity

Once the initiatives surpassed a certain size, the challenges of understanding the new customer and building meaningful relations with them as well as marketing the new product-based services in a senseful way gave rise to additional ambidextrous considerations. As soon as servitization initiatives gain traction, the main tension becomes the ability to handle the growing number of explorative ventures in a structured or more organic way on an individual and organizational level (Raisch et al., 2009). The introduction of the product-as-a-service business unit highlights the organizational need for structurally handling the complexity of service offerings. Additionally, establishing a subsidiary illustrates the ambidextrous outcome based on considerations of integrating external and internal knowledge (Raisch et al., 2009) as well as demonstrating a degree of distinctiveness (McDonald & Eisenhardt, 2020) in relation to the traditional business. Nevertheless, this choice of organizing brought the challenge of disjointedness (Raisch et al., 2009) in culture while balancing central managerial expectations with the subsidiary's own focal issue of advancing warranties.

We conclude this with two key findings. Firstly, traditional ambidexterity literature draws hard lines between structural and contextual ambidexterity (Markides, 2013; O'Reilly & Tushman, 2013). However, in applying the concepts on the servitization of a firm, structural separation can be both fully fledged, as in the case with the subsidiary, or more integrated, as in the case with the product-as-a-service unit. The latter could also be understood as ambidexterity which encompasses both a certain level of contextuality and structural separation. Thus, firms in this stage of servitization seemingly organize balancing the mechanisms of structural and contextual separation, which is more in line with the continuum view of ambidexterity (Ossenbrink et al., 2019). This strikes in contrast to traditional ambidexterity literature stating the clear spatial and value chain separation for structural ambidexterity (Markides, 2013). Secondly, when a traditionally outsourced service is reintegrated, a fully separated subsidiary offers beneficial structures for knowledge management and distinctiveness considerations. However, this does not come without the risk of cultural and processual disjoints, shown in the case by the subsidiaries lack of direction in the first periods of its existence.

5.3.3. Expansion by releasing Contextuality

Since only parts of the servitized firm advanced into the stage of expansion, we focus on two distinct findings. The first identified tension in the expansive stage is that of integration and differentiation (Raisch et al., 2009). As the subsidiary realized the increasing challenge of setting up and maintaining supportive systems for subscriptions and services, its emphasis shifted to developing the required IT systems more independently while in parallel working closely with the parent company on advancing the warranties offering. The second identified tension, that of organizational and individual considerations (Raisch et al., 2009), also returns to the focal initiative. Interviewees highlighted the issues of working individually with both the servitized and traditional business simultaneously as it started to grow. Consequently, they argued for the transfer of ownership to the designated aftermarket teams to be able to focus on their work in the traditional business.

In summary, the expansion stage connotes to two findings. Firstly, the view on structural separation in ambidexterity literature generally suggests exploration of all parts of the new business model in a separate unit (Markides, 2013; O'Reilly & Tushman, 2013). In contrast, we find that the focal firm broke out only certain parts of their business model in structural separation in the expansive stage. Secondly, as individual exploration and exploitation can be more difficult by both pertain to underlying complexities (Raisch et al., 2009), we find that contextual ambidexterity seems to diminish in relevance upon entering expansion as the underlying work is increasingly complex.

6. Discussion

In this discussion, we draw from the key insights of the analysis and connect it to previous literature in the studied theoretical domains. This section will illustrate how the analysis contributes to the knowledge gaps in previous research. We present three main themes which were particularly interesting for advancing knowledge, namely temporality (6.1), componential ambidexterity (6.2), and ambidextrous business model innovation in servitization (6.3). Lastly, we end with a brief reflection on how servitization progression is measured (6.4).

6.1. Temporality

While servitization and firms' strategic development of their product-service offerings have an inherent temporal characteristic as a process from product-centricity towards service-centricity (Raddats et al., 2019), ambidextrous temporality is not apparent in the sense it is identified in this study. As firms need to manage the tensions of its servitized business and dominant product-centric one, the temporal aspect of the duality is needed in understanding how firms manage servitization (Palo et al., 2019). Yet, ambidexterity literature scarcely covers temporality, and does so mainly in terms of describing how a company or its units shift between exploring and exploiting sequentially. That is, either exploring or exploiting at certain points in time (O'Reilly & Tushman, 2013). Additionally, and more recently, the definition by Wang et al. (2019) portrays that temporal ambidexterity is about balancing a firm's intertemporal tensions of objectives, resources, markets, and uncertainties. This study's analysis points to the need for a more practice-oriented form of temporal ambidexterity, namely that of firms or ventures shifting between different forms of ambidextrous behaviors over time. An example of this in the present study is the exploration of the business model development being handled contextually in the initial stages of servitization while later requiring spatial separation. Thereby, the circumstances and motivations for firms to vary between structural and contextual modes of ambidexterity become relevant to assess in this understanding (Ossenbrink et al., 2019). This was raised by Raisch et al. (2009) when they highlighted the question of how integrated or differentiated the explorative venture is over time.

This is where our study captures the intersection between servitization of business models and ambidexterity and we find that the areas can be bilaterally advanced. For example, Oliva &

Kallenberg (2003) and Brax (2005) argue that the de-centralized customer-oriented service units are key to successfully servitizing a business. Our study shows that this is valid, especially as the case indicated how customer relation complexity, related to both value segment and value proposition divergence, was driving the need for creating structurally separate specialized teams. Raisch et al. (2009) also notes that an individual's possibility to work ambidextrously varies across contexts, which fundaments the main tension between the individual and the organization in the contextual ambidexterity view. While both forms of ambidexterity are often applied practically in a firm (Ossenbrink et al., 2019), this study suggests that the balance between the forms can depend on the progression of servitization. Identifying ambidexterity in Baines et al.'s (2020) stagewise model helped capture this. In this case, contextual factors of product-knowledge and firm politics created a sensibleness for the servitization to be performed by individuals from the exploitative business in the initial explorative stage. The later context of complexity from certain elements of the explorative servitized business model steered the firm towards separating teams structurally.

6.2. Componential Ambidexterity

Though we in this study apply Forkmann et al.'s (2017) suggested level of analysis that of viewing servitization on a componential level, ambidexterity literature commonly assumes a concept of business models as a whole in an undivided fashion (Markides, 2013; Ossenbrink et al., 2019). The lack of previous studies with this approach made it relevant to target a componential level analysis in this study for the contribution in practical and theoretical comprehension (Forkmann et al., 2017). In this application, we recognize Markides' (2013) reasoning that a key motive for structural separation comes from a serious conflict between the explored and exploited business models. This is reasonably a useful indication of whether business model component divergence can be a reason for the same separation. Also, a review of servitization research shows that there is an ongoing discussion of whether to separate or integrate strategic business units for services (Raddats et al., 2019). However, this concept does not detail the servitized business model into components. Thus, to build on the recently mentioned temporal aspect of ambidexterity in servitization, we also see how firms could target certain elements in an explorative fashion in different points of time throughout the servitization journey.

Rather than separating an entire business model in a structurally separate unit, the case in this study points to structural separation based on only one element of the business model. This would mean separating a certain element which was previously explored together with other elements but that diverges radically from the firm's current capabilities and comprehension and is in particular need of exploration. In this case, this was framed by the subsidiary shifting to work solely with the underlying value capture systems to be able to progress into expansion quicker. This leads to questions regarding if there should exist an additional concept in ambidexterity capturing that of firms breaking out distinct parts of their exploration need in structural separation to exclusively focus on progressing these. Such a notion of componentialism is not something we find in previous ambidexterity literature (Markides, 2013; Ossenbrink et al., 2019). Yet, it does pertain to the logic of separating units due to certain needs for capabilities (Baines & Lightfoot, 2013) or to advance in line with the firm's strategic plan for services (Raddats & Burton, 2011). Thus, we propose that this notion can be understood in terms of structural ambidexterity as *segmented structural ambidexterity.*

6.3. Ambidextrous Business Model Innovation in Servitization

During the progression of this study, we have discerned that ambidexterity and business model innovation in servitizing create additional theoretical considerations. Firstly, there exists a notion that motivation for servitization differs for companies (Oliva & Kallenberg, 2003; Raddats et al., 2019). Conceptual literature in servitization argues for the differentiation between similar motivations across manufacturers (Turunen & Finne, 2014) and choices between different strategies to advance services (Brax, 2005; Gebauer et al., 2008). However, an overview of servitization research shows no indication of studies on intra-firm differences in motivation for servitization on different firm levels (Raddats et al., 2019). While motivations were not the dominant topic in this study, the reasoning found on a corporate level, in this case that of becoming more customer-centric, and the reasons found on operational level, that of gaining more value from existing products, are not equally expressed in the practices of servitization. While the first one pertained to motivations of assumed customer demand, the latter pertained to motivations of widening the market and thereby revenue. In theory, these are two separate reasons (Oliva & Kallenberg, 2003; Raddats et al., 2019) although practically not mutually exclusive. We find that it is the operational level's reason that leads the servitization efforts to their starting point whilst the strategic level's motives, operationalized by the customer relation focus in this case, instead become relevant when servitization spreads across the firm in the engagement stage of servitization. The same argument is made in the ambidexterity literature, in which middle-managers who are closer to operations more easily identify opportunities to explore (Zimmermann et al., 2015). A connection can be found in the servitization literature that discusses alignment of incentives across firm levels (Khanra et al., 2021) which often assumes a top-down alignment. This study would point to that servitization can and will happen for different motivations at different levels with the operational motivations to be indicative of how servitization emerges in its exploration.

Secondly, as the business model elements continue to vary in significance for the firm's progression of servitization, we find it intriguing to assess if a single business model element can be the main cause for the ambidextrous considerations mentioned above. The cogent connection lies with the value configuration aspects of the business model as it represents much of the underlying resources and capabilities needed for business model innovation (Taran et al., 2015). This simplification would not match the notion that business model elements interplay and interconnect (Ferreira et al., 2013) in business model innovation. Thus, connecting ambidexterity to a single business model element without also assessing its context (Ossenbrink et al., 2019) and interconnectedness seems illogical. However, in the distinct context of emerging servitization in manufacturing, this analysis identified business model element drivers that push towards certain directions of structural or contextual ambidexterity. We find that Oliva & Kallenberg (2003) and Brax's (2005) logic for separated customer teams, can be found in our study as a result from the complexity that comes with new customer relations. The same reasoning is found across servitization streams to be the motive for structuring teams in response to handling the novelty of servitized customer complexity (Khanra et al., 2021; Raddats et al., 2019). Thus, an example of a business model element driving a certain form of ambidexterity in this thesis was the expansion of potential value segment and value proposition detail which drove the focal company to create their specialized units.

6.4. Measuring Servitization Progression

As an end note of this analytical discussion, we revert to the existing conversation of how to evaluate progression of servitization (Raddats et al., 2019). The componential business model view on servitization offers a perspective which lies closer to the trajectorial view of servitization (Lenka et al., 2018). Rather than defining what the product-service is in a certain typology and starting with the least advanced (Tukker & Tischner, 2006), a servitization journey can start with a variation of concepts of what the product-service should be. However, as servitization inherently emerges from the product in manufacturing, the starting point is likely closer to the physical product. Therefore, it is difficult to apply product agnosticism in the early stages of servitization and this is rather found in the most advanced forms of product-service offerings. Thereby progression is more efficiently measured in how the firm's capabilities (Windahl & Lakemond, 2010) and efficiencies in managing dual business models advance.

7. Conclusion

This chapter presents the answers to our research questions (7.1). Based on these we elaborate our theoretical contribution and practical implications (7.2 - 7.3). Lastly, we discuss the limitations of this study and future opportunities for research (7.4).

7.1. Answer to Research Questions

RQ 1: How does a manufacturer's emergent servitization business model develop in parallel to its traditional business model?

An emerging servitization business model enters the explorative stage with a focus that is contingent on the firm's or initiatives' motivations for servitizing. The reason for servitizing creates a focal divergence between the firm's traditional and new business model which the individuals attempting servitization must prove to anchor managerial support to proceed.

Upon entering the engagement stage, for example by the creation of new organizational arrangements and recruitment of servitization related talents, additional complexity is created by the extension of value proposition and value segment. The development in this stage emphasizes the fundamental underlying divergences between the servitized and traditional value configurations such as what systems or support is needed to enable servitized offerings. This stage is navigational in the sense that it tests several modes and concepts of servitization in parallel and successively moves to proceed into the scaling focused expansive stage.

As servitization in the firm progresses towards expansion, enabling the servitized value configurations stays a central emphasis while an arrangement of the value network in terms of both traditional and future partners becomes a fundamental concern. Simultaneously, as scale advances, the imminent value configurational (financial and structural) impact in relation to the firm's traditional business becomes significant in deciding how to proceed towards an exploitative state.

RQ 2: How can a servitizing product-centric manufacturer deal with the challenges of dual business models through organizational means?

In emerging servitization, we find that the ambidexterity literature gives a terminology to overview the organizational response to challenges and tensions. As servitization moves into the first stage, exploring and exploiting on an individual level appears consequential of the servitization's product-centric starting point and the relatively small size of the servitizing enterprise. This choice of organizing comes with benefits of product-capabilities and possibilities to navigate internal firm politics. However, depending on the contents of the traditional business model, a certain level of hybridity and freedom of action may be necessary to side-step traditional product-development and innovation requirements while drawing benefits from the core business capabilities.

As additional parts of the business model are deeper explored in servitization, added complexity and tensions with the traditional business model incites reconfiguration of teams and resources around the servitized enterprise. While the stage is navigational, the firm can draw benefits from organizing in teams which are integrated to the traditional business as they can assess and leverage product comprehension and capabilities in exploring segment and value proposition. Full spatial separation while servitization is still fundamentally navigational may risk loss of direction and create integrational challenges as the services at this stage are still closely related to the product.

We identified additional underlying supportive and systematic differences between the business models which can require spatial separation. Firms can specifically target elements of business models which are deemed divergent and break them out in spatially separate units to explore the opportunities of advancing the specific element. This form of segmented structural ambidexterity can aid a firm in advancing the most crucial part of their servitized business model(s).

7.2. Theoretical Contribution

This thesis examined the servitization of business models from a dual business point of view by examining a firm's progression of offering product-services. The study emphasized the relation between the traditional product-centric business model and the servitized business model. It becomes theoretically and practically relevant as this relation pertains to challenges faced in an actual servitization journey. Thus, we primarily answered calls from Kowalkowski et al. (2017) by detailing servitization as it emerges from within a firm. We equally advance the dual business model view on servitization from Palo et al. (2019) by applying Forkmann et al.'s (2017) suggested componential level of analysis which helps enabling practical and theoretical insight to strategically servitize. In totality, this study's explorative nature responds to the concept which Khanra and his colleagues (2021) request for insight into how firms manage the multiplicity of both its traditional business model and its emergent servitization.

Additionally, we contribute to the increasingly reviewed fields of both servitization and ambidexterity in three ways. Firstly, previous studies have not assessed the detail found in looking at servitization as a stage-wise transformation of a business model in relation to a firm's traditional one (Baines et al., 2020). Although studies have generated insights partially in terms of content and temporal progression (Lütjen et al., 2017; Martinez et al., 2017) this study furthers the understanding of the transformation by setting the change in the perspective of the business model.

Secondly, we revitalize the discussion on how concepts from ambidexterity can be applied in new contexts of research (Markides, 2013). Prior research tends to lean towards structural ambidexterity with contextual or individual ambidexterity only being partially explored (Markides, 2013; O'Reilly & Tushman, 2013). We find that we unexpectedly respond to questions from Raisch et al. (2009) on how different types of ambidexterity can be used in different stages in an explorative development by adding ambidexterity to our temporal analysis.

Finally, throughout the servitization journey, and prospectively in other business model innovation processes, ambidexterity lets firms break out certain parts of a business model which are in greater need of exploration. This was shown in the case with the value capture mechanism and illustrated the special focus on the challenge space that underlies the servitization challenge. As only one part of the business model is broken out to be exploratively advanced this can be viewed as segmented structural ambidexterity. Through this notion, we extend the level of detail considered in ambidexterity literature (Markides, 2013; O'Reilly & Tushman, 2013).

7.3. Practical Implications

In the aims of this thesis, we emphasized our intentions to contribute to the practical work in firms who are targeting servitization. In our empirical analysis, we highlight the key challenges faced in the focal case's servitization progression which may be useful for firms to be aware of when attempting to servitize. In this we suggest three items for managers and other employees involved in emergent servitization to consider.

Firstly, we recommend that managers who wish to explore servitization within their firm clearly outline what the fundamental motivation for them to do so is. This helps in identifying which part of the business model needs be assessed first as well as strengthens the arguments for executive sponsorship. For example, should it be for competitive reasons, managers may wish to assess how the new value proposition diverges from the traditional one to anchor initial support.

Secondly, managers can utilize the business model framework presented herein, and likely other well-grounded business model frameworks, to assess where they have enough understanding of the divergence from the traditional business model. This enables them to identify what different needs they have in terms of organization, resources, and knowledge. As servitization progresses, specialized integrated teams, tasked with handling and scaling the extension of product-services by coordinating multiple elements of the servitized business model, can prove a viable option to handle growing complexity.

Finally, this research highlights how managers and their colleagues should determine specifically imperative divergences, such as the payment system in this case, and target the scaling of its corresponding business model component. As mentioned, this can be done through applying a componential business model analysis. By structurally breaking out teams to advance this element, it can work as a platform for additional parts of the business model to proceed more rapidly into the expansive stage of servitization.

7.4. Limitations and Future Research

This thesis has contributed with theoretical and practical knowledge in the fields of servitization, business models and ambidexterity. However, it also contains limitations that offer opportunities for future research. An interesting limitation is that of *divergence*. We applied the term in informed anticipation that this could help understand the relation between the novel business model and the traditional business model of a firm. However, our approach of discovering divergence from business model elements of focus leads to questions if divergence between business model elements can be measured in more detail, on various forms of continua, to strengthen the concept. This creates an avenue for future research to explore how the relation between business model elements, or entire business models, can be measured in terms of distance and intelligibility of contestation. We also suggest four additional scopes for progressing further with this research.

Diversified approach to the business model development. This thesis' approach gives certain depth and practical insight into how manufacturers in similar contexts can progress in servitizing. However, this potentially limits the study's applicability in different contexts. To advance the dual business model view of servitization, it would be interesting to apply the presented framework and findings in the context of a diverse set of organizations. This would allow for a better understanding of the servitization processes over time, business model elements in focus and organizational mechanisms utilized. Thus, studying a manufacturer that has progressed further could also add valuable insights, especially in tying the development with the exploitative stage.

Conducting the study over longer time-periods. Similarly, this study gives a temporal overview of a servitization journey from a retrospective point which contains certain risk of recall bias. Thus, it lacks longitudinal insights about what happened pre-servitization and what happens when the dual business models stabilize in parallel exploitation. Researchers with the capabilities and resources to study firms in contexts where servitization is likely could generate highly relevant studies by following them over time.

Broadened intra-firm and inter-firm scope of study. This study focused on the perspective of the firm's servitization initiatives and interviewed mainly employees that were involved in the customer-centric transformation. The inclusion of participants solely connected to the traditional business would depict a more holistic view on the firm-level changes, challenges, and organizational approaches. This could also elucidate the notion of different motivations for servitizing in different levels of a firm. Further, the field of study on servitization could benefit from research which includes how suppliers, partners, and other relations in the firm's ecosystem are affected by manufacturers approaching dual business models.

Applying the dual business model perspective on non-successful cases. Finally, the challenges of managing two business models simultaneously are likely to be, at least in part, causal of success or non-success. Investigating the reverse concept of deservitization is expected to be difficult due to the potential lack of access to informants who share insights on this retreat. Yet, a study on a similar level with one or several firms deciding to withdraw from exploring product-service offerings would strengthen the knowledge on what is necessary for successful servitization in manufacturers.

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9. Appendices

9.1. Appendix 1 – Empirics of the CIC and TIC Cases

In order to assess the relevancy of the business model perspectives on the servitization journey and the suitableness of our selected case, our expert interviews (described in 3.2.1) aimed to give us first-hand insights from two manufacturing companies with outspoken servitization strategies. Below are brief accounts on how the companies describe their challenges and advancing business models when servitizing. The companies are referred to as the Construction Industry Company (CIC) and the Transportation Industry Company (TIC).

CIC

The CIC began as a company selling tools for professional builders in the construction industry. Today the company offers solutions in which their customers can lease and keep track of their fleet of tools, the entire organization has shifted to a duality where transactional sales and service-concepts are executed in parallel. In response to the question of what their business models look like today, a regional sales director described it as:

> *"We [continuously] want to be deeper embedded in what the whole process is for our customer. Partnerships is our business model today."* (Interviewee 11, CIC, 20.10.2021)

However, the journey which they describe to this point is not considered easy according to the CIC interviewees. The specific challenges as framed by both companies follow the presentation of TIC.

TIC

The TIC is active in another industry, namely vehicle manufacturing for goods transportation. TIC has added services during the 21st century both through their own service development as well as through creating a subsidiary dedicated to offering product-related services as well as expanding into complex delivery services. Today 20% of their revenues relate to advanced services. A senior strategist argued that TIC servitization was a natural consequence of the business's nature:

> *"Intuitively the start in service was repair and maintenance, and then advancing into financial service. Leading to a situation where we are, a player with an enormous amount of vehicles on our balance sheet through leasing." (Interviewee 9, TIC, 15.10.2021)*

As the range of service initiatives may have individual challenges, we present the general challenges through the servitization process according to our expert interviewees.

Deepening customer understanding

Both CIC and TIC informants highlight that the process of becoming more service-centric in their business, requires advanced understanding of their customer and in some circumstances a shift of who is considered a customer. For CIC, not all customers from the transactional business were deemed relevant for their subscription and tracking systems. Following this identification, the regional sales manager at CIC describes the evolving relations in terms of intensity to be able to collect more useful customer data.

> *"You discover more needs as you get to know the customers and they get to know more like about what we can offer and the whole value offer as well." (Interviewee 3, CIC, 05.102021)*

At TIC, the service concepts emerged partially from these relations and the capture of lots of data. Our interviewees highlighted that with existent customers, transformation can take time:

> *"We started 20 years ago with collecting data. It took a long time for us to transform our contracts with customers to be more service based." (Interviewee 12, TIC, 25.10.2021)*

Professionals from both firms claim the customer identification process and transformation of customers contracts to include service elements as differentiated from their pure transactional business.

Competence as a resource

To be able to achieve the customer relation transformation, TIC and CIC informants express a clear shift in what skills and experience is needed. At TIC, a strategic manager described it:

> *"The company has generally drawn the lesson that we need much more experience [on transitioning towards services] from the outside." (Interviewee 9, 15*.10.2021)

Elaborating on how to handle this need, a senior strategist at CIC argued that firms need to choose between either creating separate entities with specialized knowledge in the service domain, or to support the transition of account managers skillsets with expert support so that they can handle both types of selling.

Systems and encouragement supporting the transition

To support the change process of both advancing the customer relation as well as developing the right competences. The interviewees argued that both technical systems for customer information as well as the systematic compensation for sales become fundamental for selling the servitized concept. At CIC a regional sales manager highlighted that the motivation for sales through their compensation model had to be gradually adjusted to benefit both business models.

> *"It took some time. But today the system is balanced so it doesn't matter if they sell transactionally or if it does it through the service model." (Interviewee 4, CIC,* 07.10.2021*)*

In summary, our expert interviews highlight the need to understand the differences between customer processes, skills and resources, and system support between the traditional and novel business model. As these challenges closely relate to individual business model elements, it leads us to believe that studying what the relations between novel and traditional business model elements mean for the organization will bring valuable insights to our research.

9.2. Appendix 2 – Interview Participants from AIC, CIC, and TIC

Interviewee	Company	Role	Date 1st Interview	Length 1st interview (h:mm)	Date 2nd Interview	Length 2nd interview (h:mm)
1	TIC	Strategic Business Developer	24.09.21	0:42		
2	AIC	VP Software Product	27.09.21	1:03	05.11.21	0:40
3	CIC	Sales Manager	05.10.21	0:53		
4	CIC	Sales Manager	07.10.21	1:07		
5	AIC	Category Manager	08.10.21	1:02	23.11.21	0:32
6	AIC	Products-as-a-Service Director	12.10.21	1:03	16.11.21	0:35
7	CIC	Product Manager Services and Software	14.10.21	1:05		
8	AIC	Senior Business Analyst	14.10.21	0:59		
9	TIC	Senior Technical Advisor Business Strategy	15.10.21	1:04		
10	AIC	Senior Category Manager Product-as-a-Service	15.10.21	1:07	12.11.21	0:59
11	CIC	Sales Director	20.10.21	1:03		
12	AIC	Head of Product & User Experience	22.10.21	1:03		
13	TIC	Head of Innovation	25.10.21	0:57		
14	AIC	Senior Software Engineer	05.11.21	0:35		
15	AIC	Product Owner SaaS & Services	05.11.21	1:04		
16	AIC	CEO (Subsidiary)	12.11.21	1:04		
17	AIC	VP & General Counsel	12.11.21	1:00		
18	AIC	Senior Category Manager Extended Warranty	16.11.21	1:04		
19	AIC	Services & Spares Business Controller	17.11.21	1:02		

9.3. Appendix 3 – Initial Interview Guide

Intro

- What is your name?
- What is your role at company x?
- How long have you been with company x?

Motivation

- Could you tell us about how company x works with servitization?
- What motivates company x to pursue initiative y?
- Why are initiatives such as y important for you/for your business?
- What feedback do you get from customers?
  - Do you use this feedback in any way?

Servitization

- Could you tell us where the idea of servitizing your business came from and how it was introduced to or in the company?
  - Who initiated the idea?
- When did you start to implement the idea?
- How did initiative develop further?
- Could you describe how the initiative looks like today?
- What would you consider essential in order to servitize?

Balancing business models

- How does the servitization BM relate to your traditional BM?
- What are the issues when running the BMs in parallel?
- What are the perks of running the BMs in parallel?

Drivers and barriers

- What challenges have you faced when servitizing?
- How have you overcome them?
- What were your learnings this far?

Outro

- Do you have any reflections you would like to add?

9.4. Appendix 4 – Data Structure