

The Excessive Servitization

A close look on Ericsson's case, and its implications on servitization theory

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Abstract: Servitization is often described as a linear process, in which a company journeys from product centric to service centric. The choice is strongly advised both in theory and practice. We offer an inherently different view in this thesis, that we believe to be a deeper understanding of the phenomenon of servitization. We reached our insights through the studying of a company case, Ericsson. Contrary to what servitization would seem to entail, at the current moment in time of Ericsson's journey, the focus was put back on the product. In this work we will describe the journey of Ericsson through the decision to servitize to this day, and closely observe and try to explain the hurdles and challenges encountered. In particular, we explain how excessive servitization led to unprofitability, and how Ericsson readjusted itself to be a solution provider combining products and services, keeping in mind the general meaning of what an organization and servitization are about.

Keywords: Servitization, Service infusion, Service dilution, Servitization failure, Deservitization

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1. INTRODUCTION

Ever since the late 1980s, companies around the world have started developing the capabilities needed to provide services and solutions that supplement their traditional product offerings, a process called servitization (Neely, 2013). The phenomenon of servitization has influenced many industries, not only traditional manufacturers, but also other industries such as healthcare (Neely, 2013). Among other reasons, companies servitize for financial gains, closer customer relationships, and competitive advantages (Baines et al, 2009).

Example cases for servitization includes the truck manufacturer Toyota Materials Handling Europe, which has increased the role of services in its business to a much larger extent; construction equipment manufacturer JCB, which increasingly utilizes services to support dealers and customers in relation to the operation of the equipment (Raddats et al., 2019).

Servitization has also been thoroughly studied in the literature. Since 1988, when Vandermerwe and Rada first introduced the term, many academic articles have been written about servitization. A search on Scopus returns close to 900 documents for the keyword “servitization”. Recent literature in the field has several themes, including service offerings, strategy and structure, motivations and performance, resources and capabilities, and service development, sales and delivery (Raddats et al., 2019).

From earlier notion of linearity of the servitization process, our understanding of servitization has taken a turn, both in practice and in theory, showing servitization to be a complex phenomenon. As practical cases such as Xerox (Finne et al., 2013) demonstrates, some companies have experienced issues in the servitization process and subsequently chosen to decrease the relative importance of service offerings.

The theory has followed these problematic cases, starting to take servitization challenges into consideration, and trying to explain them, leading to the creation of terms such as deservitization and service dilution (Finne et al., 2013, Kowalkowski et al., 2017). In particular, the concept of service paradox has been introduced, that explains that servitizing companies can incur in unprofitability (Gebauer et al., 2005; Neely, 2009). However, we find the provided explanations inconclusive, and intend to further the knowledge in these areas.

Specifically, we are interested in the relationship between servitization and incurred unprofitability. As one of the central concepts of service paradox, servitization induced unprofitability has been studied in the literature, but no conclusive relationship has been found. Moreover, the existing literature tend to be quantitative and correlation-based, while our interest stems from a more qualitative angle.

We intend to contribute to the theory of servitization’s relationship with unprofitability and link this relationship with existing literature on service paradox, furthering the inquiry into these areas from a qualitative, case-based perspective.

We have studied servitization in Ericsson, a big telecommunications company. One of the authors had a working experience in the company, thus having the opportunity to closely

study servitization and develop the necessary network to gain key insights. Interestingly, servitization's perception was not unanimous in the company. The most extreme points of view regarded servitization as a failure altogether (interviewee 13). Ericsson had also been experiencing deservitization, and we wanted to understand and explain why.

1.1 Purpose and research question

In this thesis we aim to provide explanations for unprofitability deriving from servitization. Our explanations are based on an empirical case, and they contain new reasonings, that are deeply connected to the nature of an organization and of value creation. By connecting these topics we can derive a deeper understanding of servitization and describe how it can be embraced by organizations with balance, to enhance the company's value creation, and therefore profitability and identity as well.

We aim to respond to the following research question:

How can servitization induce unprofitability?

To which another research question naturally follows:

How can servitization be managed in order to be profitable?

1.2 Delimitations

We chose to focus on Ericsson as the case company, and its servitization journey from 1990s to the present day and the relationship this journey had with unprofitability. While other cases and other periods for the case company may prove to be relevant to our inquiry, we chose to limit our inquiry to Ericsson's specific period to provide deep insights regarding servitization's relationship with (un)profitability.

About profitability in our thesis, the lens of analysis we have used has been aimed in general towards the overall impact of servitization. Though consisting of its own costs and revenues, and different dynamics, often complex to separate from other parts of the company, the ultimate goal of a transformation such as servitization is to increase overall profitability in the company. This relationship is precisely what has been observed in other quantitative studies, and is at the base of the "service paradox". On the other side, we also break up overall profitability in smaller chunks, i.e. the profitability on the project level. From this perspective, we will offer our insights on what helps and undermines profitability on a project level, while considering how a company can prepare a strategy to maintain profitability over time on different projects.

2. LITERATURE REVIEW

In this section, we will outline the literature that is relevant to our thesis. We will begin with a section on the definition of servitization and its related concepts, and we will follow with the

reasons for servitization, its challenges and failure, a synthesis of theories, and finally a presentation of our initial inquiry.

2.1 Definition of servitization and related concepts

Servitization has been studied in the academic literature for several decades, and the concept has seen an evolution from its inception. Vandermerwe and Rada (1988) initiated the inquiry into the process of servitization. They theorized that servitization entailed the combination of goods and services, and a following addition of support, knowledge, and self-service, to form an integrated bundle of offerings to the market (Vandermerwe and Rada 1988). Servitization has also long been viewed as a linear process from product to solution provider (Vandermerwe & Rada, 1988; Oliva & Kallenberg, 2003). According to these scholars, servitization is a one-way street, with no possible reversal.

However, problematic cases have arisen in practice, and new questions have been asked in theory, leading to the formation of terms signaling the reversal of the servitization process. As practical cases such as Xerox (Finne et al., 2013) and others demonstrate, some companies have chosen to decrease the relative importance of service offerings to a company, reducing the service portfolio and augmenting the product business orientation, a process that has been termed service dilution (Finne et al., 2013, Kowalkowski et al., 2017). Finne et al. (2013) have explained that companies do not necessarily servitize linearly as a forward-unidirectional process. They can go back and forth, assuming different configurations in the product-service spectrum. This is influenced by many factors, not least external and environmental trends.

Kowalkowski et al. (2017) explained the different definitions in their literature review. Servitization has been defined as the transformational process of shifting from a product-centric business model and logic to a service-centric approach. These scholars explained that in the existing literature the term service infusion is sometimes used interchangeably with servitization (Kowalkowski et al., 2017). Kowalkowski et al. (2017) try to clarify the distinction, maintaining that servitization and service infusion occur at different levels of the process, with servitization encompassing service infusion but describing the transformational process whereby a company shifts from a product-centric to a service-centric business model and logic instead of simply adding service-related activities and initiatives. Finally, deservitization was defined as the transformational process whereby a company shifts from a service-centric to a product-centric business model and logic (Kowalkowski et al., 2017).

Figure 1 shows a diagram from Kowalkowski et al., 2017 that highlights the relationships among these concepts within the literature.

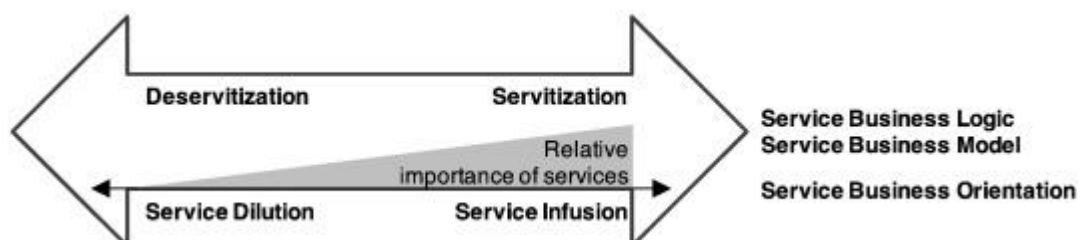


Figure 1: From Kowalkowski et al., 2017 for an illustration of relationships between concepts

Finally, we introduce the term of product service systems (PSS). PSS are defined as “a marketable set of products and services that are capable of jointly fulfilling customers' needs in an economical and sustainable manner” (Goedkoop et al., 1999, Tukker, 2004, Reim et al., 2015). Scholars have pointed out that our present knowledge of the underlying foundations for implementing PSS is largely a research area that is neglected (Azarenko et al., 2009, Mont et al., 2006, Reim et al., 2015). The process leading to PSS, combining products and services, is thus interesting to explore.

In this section we identified the start and evolution of the theorisation of servitization, from its initial formulation and the concept of linearity, to the introduction of the product-service spectrum and redefinition of key concepts.

2.2 Reasons for servitization

Vandermerwe and Rada (1988) reported that companies were adding services to their portfolio for gaining competitive advantages, turnover, and market power. More modern literature states that servitization is commonly pushed by financial, strategic and marketing drivers (Baines et al., 2009).

The major financial drivers commonly referred to in the literature are higher profit margin and stability of income (Wise and Baumgartner, 1999; Gebauer and Friedli, 2005). Wise and Baumgartner (1999) maintain that, in some sectors, particularly ones with high installed base, service revenues can be one or two orders of magnitude greater than new product sales. Ward and Graves (2005) argue that the increasing life cycles of a lot of modern complex products is pushing the more significant revenues downstream towards inhouse service support. These product-service combinations and systems tend to be less sensitive to price-based competition (Malleret, 2006), and so regularly lead higher levels of profitability compared to simply offer products (Frambach et al., 1997). Last but not the least, product-service sales tend to be counter-cyclical or more resistant to economic cycles (Oliva and Kallenberg, 2003; Gebauer and Fleisch, 2007). This can help secure a regular source of revenue and balance the effects of saturated mature markets and less than optimal economic cycles (Brax, 2005; Malleret, 2006).

The literature commonly refers to strategic drivers as related to gaining competitive advantage. The manufacturing companies use service offering elements to differentiate product offerings and so provide crucial competitive opportunities (Frambach et al., 1997; Gebauer and Fleisch, 2007). Competitive advantages achieved through services are often more sustainable because, being more invisible and employee dependent, services are more difficult for competitors to imitate (Oliva and Kallenberg, 2003; Gebauer and Friedli, 2005; Gebauer et al., 2006). When discussing these concepts, many authors (Coyne, 1989; Frambach et al., 1997; Gebauer and Fleisch, 2007) reflect on the increased commoditization of the markets, in which common strategies based on product innovation, technological advantages and/or low prices, are becoming incredibly hard to sustain. This is also why companies are pushed by competition to servitize.

Marketing drivers for servitization are referred to as using services to sell more products (Mathe and Shapiro, 1993; Gebauer et al., 2006; Gebauer and Fleisch, 2007). The service component is widely accepted as to influence the purchasing decision (Gebauer and Fleisch, 2007). This is particularly the case in business to business or industrial markets where customers are increasingly demanding for services (Oliva and Kallenberg, 2003; Auramo and Ala-Risku, 2005; Slack, 2005). Services are also believed to create customer loyalty (Correa et al., 2007) to the point where the customer can become dependent on the manufacturer. Services tend to induce repeated buying behavior, and give the manufacturer opportunities to sell other products and services (Malleret, 2006). Also, by offering services, companies gain insight into their customers' business needs and can develop more customized offerings (Baines, 2009).

In fact, servitization serves as mutual exchange between producer and consumer, stressing the concept of value co-creation. Value co-creation is explained in Vargo et al. (2008): "In value co-creation, value is ultimately derived with the participation of, and determined by, the beneficiary (often, the customer) through use (often called consumption) in the process of acquisition, usage, and disposal". Vargo and Lusch (2004) argue that a new service dominant logic focused on intangible resources, the co-creation of value, and relationships is taking place instead of the goods dominant logic from an older era. This is consistent with the marketing drivers for servitization, and focus on co-creation of value and a changed customer relationship as the center of drivers for servitization in organizations.

Relating to service dominant logic, servitization has been defined as the process to take away value in exchange towards value in use (Green et al., 2017). According to Green et al. (2017), servitization can be described as the process of tailoring value propositions to enable consumers' greater efficacy in achieving desired outcomes (Miller et al., 2002, Baines et al., 2009). In doing so, there is an inherent move away from the traditional transactional exchange between the firm and customer, to a longitudinal relationship centered on hybrid product service offerings (Smith et al., 2014).

A related concept, value co-production, is also inherent different from the traditional definition of value creation. It emphasizes that value is co-produced, with customer, over time, for both producers (Ramirez, 1999).

2.3 Challenges of servitization and servitization failure

In spite of the outlined potential benefits, according to a number of existing literature, the servitization decision itself may not directly lead to positive results in organizations. Many authors have highlighted that servitization can introduce a "service paradox", meaning that the returns of servitization are not sufficient to cover the costs in the service solutions (Gebauer et al., 2004; Neely, 2009). Valtakoski (2017) defined service failure, meaning that a firm does not succeed in developing a profitable service business to complement an existing product business. The empirical evidence for the service paradox is illustrated by the large number of contemporary studies on this topic (Holmlund et al., 2016; Jovanovic et al., 2016; Visnjic & Looy, 2013; Löfberg et al., 2015).

The financial impact of servitization has largely been described as positive (Wise and Baumgartner, 1999; Gebauer and Friedli, 2005). However, the empirical evidence for this is inconclusive. Some studies point to the non-linear relationship between servitization and financial performance (Visnjic & Looy, 2013; Suarez et al., 2013), and others point to relationship contingent on environmental and organizational factors (Ceci & Masini, 2011; Gebauer, 2008). Still other literature highlights the possible financial risk of the servitization process, which includes lower profit margin and increased bankruptcy risks (Neely, 2009; Benedettini, 2015). According to Valtakoski (2017), the financial impact of servitization is still poorly understood, but evidence suggests that servitization failure is not only possible, but also in many cases likely (Valtakoski, 2017).

According to the concepts of service paradox, the difficulty to obtain competitiveness is usually explained in the way that servitization constitutes a critical managerial challenge (Oliva & Kallenberg, 2003), and fundamental organizational changes are necessary to achieve the capabilities to compete in services (Brax, 2005; Gebauer et al., 2004; Martinez et al., 2010; Neely, 2009). Various studies have addressed this problem, highlighting a wide range of organizational challenges. For example, implementing servitization needs investments in developing organizational capabilities such as employee skills, abilities and technologies, etc. (Reinartz and Ulaga, 2008). Moreover, servitization is usually accompanied by changes in operations, value chains, and strategies (Araujo and Spring, 2006; Oliva and Kallenberg, 2003).

In the customer relationship sphere, several authors also link the challenges of manufacturing firms to servitize to a need to develop customer-centric capabilities to successfully provide integrated PSS (Miller et al., 2002; Windahl et al., 2004). Oliva and Kallenberg (2003) elaborate that the organizational structures, principles and processes required for services are new to traditional product manufacturers, hence demanding new competences, metrics and incentives in addition to a relationship-based business model (Oliva & Kallenberg, 2003).

The role of culture in servitization, and specifically in Ericsson, has been researched by Lienert et al. (2019). They found what they called cultural enablers and inhibitors. In their view, path dependency is well suited to understand how hard the transition to a new system can be for a company like Ericsson. Lienert et al. (2019) view servitization as a challenging transformation and change process and as an opportunity to get closer to the customer, by adapting the business model. The goal is to find path breaking elements, vs the ones that enforce the dependency from the usual ways, that hinder the transition to PSS.

2.4 Synthesis of the Theories

The three major reasons for servitization have been shown to have complications relating to them in the existing literature, as we have outlined in the previous section. This section summarizes the relationships among these introduced concepts, building upon the earlier framework introduced by Kowalkowski et al. (2017).

The most fundamental and measurable evaluation criteria for servitization success or failure is profitability. As defined by Valtakoski (2017), service failure means that a firm does not

succeed in developing a profitable service business to complement an existing product business. From this definition we can see that profitability is the ultimate measure of whether an organization has reached servitization success.

However, between this concept and the largely quantitative studies linking servitization to unprofitability (Neely, 2009; Benedettini, 2015), there is a large gap calling for a more comprehensive understanding of this relationship. Namely, what is the process from servitization leading to unprofitability? What kind of factors play a role in this process? These questions are not addressed extensively in the existing literature, and constitute the central puzzle of our inquiry.

Beyond the financial challenges, both strategic and customer relationship challenges may lead to unprofitability in a servitizing organization.

One of the reasons leading to the unprofitable servitization outcome is the internal organizational changes required for the process to lead to a service focus, which constitutes a significant challenge for organizations. As shown in the previous section, servitization requires extensive organizational changes in many areas, and these efforts cost resources. In the event that cost is not justified with revenue generation, unprofitability will be the outcome.

Another reason for the unprofitable servitization outcome is the challenge to develop capabilities for closer customer relationships. The traditional product-oriented business model is primarily transaction based, while the service-oriented business model is relationship based. To accomplish such a change, organizations need to develop capabilities to help the customer, and establish customizable solutions. If such changes were handled ineffectively, unprofitability would also be the outcome.

There is also a hint in the existing literature about the relationship of servitization failure and deservitization, namely servitization failure causes deservitization (Finne et al., 2013; Kowalkowski et al, 2017). Faced with an organization experiencing deservitization and with sources within the company claiming that servitization has been a failure there (interviewee 13), we were curious about this relationship and wanted to explore more.

2.5 Inquiry

As we have seen, the complications that can lead to servitization failure in the form of unprofitability are many, and research about the reasons for this is inconclusive. We aim to contribute to this gap, by describing what created unprofitability in Ericsson's servitization journey. From the Ericsson case, we then intend to deepen the knowledge of what we know in servitization-led unprofitability.

To this end, we have developed this initial representation of our inquiry.

From the synthesis of theories, we can see that unprofitability can stem from both the need to develop closer customer relationships, and the need to reorganize internally. This leads to

the initial framework being divided into these two sides, and our subsequent inquiry focusing on the processes how these intentions lead to the outcome of unprofitability.

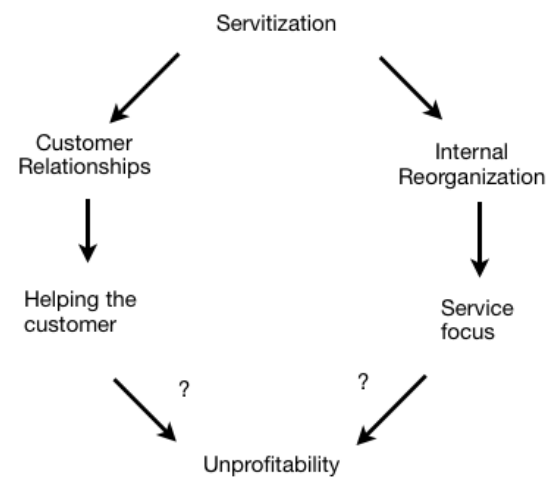


Figure 2 Our Initial Inquiry

3. METHODOLOGY

In this section, we describe our choice of methods in the analysis of the problem, and why our methodology fits our purpose.

3.1 Aim of our inquiry

The aim of our inquiry is to discover the reasons behind how Ericsson's servitization effort led to unprofitability, and possibly explain its decision to deservitize, putting the focus back on the product. This discovery and explanation can potentially lead to generalizable insights in the literature of servitization.

3.2 Methods

Our aim was created by both the analysis of the empirical case, and a review of the literature. To answer our research question and unveil the process behind how Ericsson's servitization would lead to unprofitability, we chose semi-structured interviews, with follow-up contacts, in a single case study, in conjunction with desk research.

3.2.1 Systematic combining and abduction

As is already evident from the introduction to this section, our methods did not respect the requisite of linearity. This phenomenon has been described in depth by Dubois and Gadde (2002), in their description of systematic combining, which the scholars suggest as a proper way to conduct case studies.

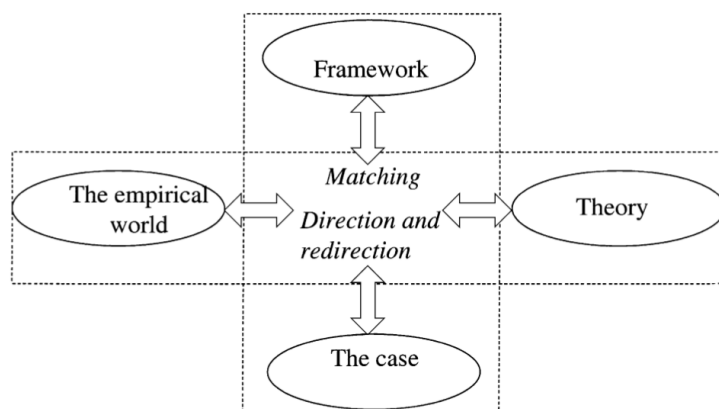


Figure 3 Systematic combining

“Systematic combining is a process where theoretical framework, empirical fieldwork, and case analysis evolve simultaneously, and it is particularly useful for development of new theories” (Dubois and Gadde, 2002). These authors call for more openness about how learning occurred, stating that “discoveries, which cannot be planned in advance, force us to reconsider the prevailing framework” (Dubois and Gadde, 2002). In the article, they suggest that knowledge is the result of the interplay of four factors: reality, available theories, the gradually evolving cases, and the analytical framework. *Matching* and *direction and redirection* are the processes constantly occurring, that bring to the progressive readjustment of each component. The goal is to write theory that reflects the empirical world, with the help of a framework that results from a case, but that also dictates how the case is analyzed and inquired. This method also describes the absence of a theoretical framework resulting from the literature review, and the individuation of theoretical gaps, because that is not how our findings have been formed. The scholars assert that “data should not be forced to fit preconceived or preexistent categories, [...] rather that the categories are to be developed from data”. While some “technical literature” knowledge is necessary, the authors state that there is no need to review all literature, and that in fact doing so can obstruct the theory creation. And because of the transforming fieldwork, even individuating “all the literature” is a hard task.

“Systematic combining builds more on refinement of existing theories than on inventing new ones” (Dubois and Gadde, 2002). As a result of this, our framework has emerged from the combined analysis of our empirical case and literature review, constantly transforming to create theory that reflects reality, in an effort of theory development.

Systematic combining belongs to the methodological discussion of abduction methods. Abductive reasoning (also called abduction, abductive inference, or retroduction) is “a form of logical inference which starts with an observation then seeks to find the simplest and most likely explanation” (Coccia, 2018; Peirce, 1992). In abductive reasoning, unlike deductive reasoning, the premises do not guarantee the conclusion. Abduction is a good fit for our inquiry because it allows for extensive readjustments of the developed model to fit with new

discoveries in the data and literature review, thus give us the space to use theoretical tools that we find appropriate.

3.2.2 Interviews

To gather our empirical data, we chose semi-structured interviews as the major method.

We started with a first round of 10 interviews. With a research interest in the interrelations between digitalization and servitization, we aimed to understand how digitalization and servitization interacted in Ericsson, how its business model changed for this double transformation, and what challenges arose in the process. Because connecting digitalization and servitization was an under-researched and future oriented area for hi-tech companies, we would want to know more about this relationship. The motivation we had was to find out about the servitization phenomenon in Ericsson in general, how it related to business model changes, and what role digitalization played in this.

For the interviewee sample, we interviewed a wide range of employees and managers about the servitization journey of Ericsson, including people in IT and commercial areas. Our choice of interviewees responded to the need of gathering both a diverse group of people, for different perspectives, but also key personnel and managers, to acquire a certain level of information and awareness, and relationship to higher levels of strategy making.

For the interview findings, two interviewees (interviewee 6 and 9) identified a trend that Ericsson was “going back to product”, and experiencing the reversal of servitization, a statement that sparked our interest and we wanted to inquire more into this deservitization process.

For the next round of interviews, our new aim was to find specific service initiatives and cases that mapped out the servitization journey of Ericsson, the challenges encountered and how they were managed. The new motivation we had was to find cases to provide support to the phenomenon of going back to product (not named deservitization in Ericsson), and one interviewee’s (13) assertion that servitization at Ericsson failed also led to our interest to find out more.

This main study, is more specific and touches on a range of different cases of service initiatives, some successful, and some failed. For the second round of interviewee sample, we focused on a subsection of Ericsson’s IT department, gathering data around their experiences on different servitization initiatives. This subsection was chosen because it gathers people with both product and services backgrounds, and provides a comprehensive picture about Ericsson’s servitization journey. A detailed description of the interviewees’ role and specialty area can be found in the appendix.

For the interview findings, we discovered distinct themes in Ericsson’s servitization journey, and divided the empirical data into several relevant concept clusters.

These two rounds of interviews and subsequent transcription led to 68 pages of transcripts. Our questions for the two rounds are detailed in the appendix.

For methodological fit, utilizing qualitative research allows us to make sense of stakeholders' unique perspectives from the data gathered, instead of exploring the "amount, intensity, or frequency" of the concepts researched (Creswell, 2014; Ketokivi and Choi, 2014).

Furthermore, semi-structured interviews are frequently used in qualitative studies for the benefit of having a dialogue going on between the interviewer and the interviewee, having more interviewer creativity, and achieve greater clarity and elaboration of answers (Cooper and Schindler, 2014).

3.2.3 Single Case study

We chose to explore servitization in Ericsson, a case company that we had internal access to and that provided an opportunity for deep exploration, since it is currently undergoing the service transformation.

Initially, case studies were not considered a scientific approach. But this has changed over time, and case studies have seen growing support in academia, as the specificity of context has started to be seen as a strength, something interesting to study, instead of a weakness, a "bias". Dubois and Gadde explain that "case studies provide unique means of developing theory by utilizing in-depth insights of empirical phenomena and their contexts" (Dubois and Gadde, 2002).

As to the choice of a single case, instead of a multitude of cases, we believe that increasing the count in the attempt of adding statistical significance, does not contribute to more solid findings. Dubois and Gadde (2002) further explain that "when the problem is directed towards analysis of a number of interdependent variables in complex structures, the natural choice would be to go deeper into one case instead of increasing the number of cases".

Actually, increasing the number of cases can also lead to some disadvantages: "Researching greater number of cases, with the same resources, means more breadth, but less depth" (Easton, 1995).

Initially holding a critical view of case studies, Yin also came to a positive evaluation of these as a method of research, stating that a single case allows to investigate in depth how and why a phenomenon happens and under what circumstances, and to get into the heart of the issue (Yin, 2011).

3.2.4 Research approach

In the beginning of the research process, sensemaking guided us in our *initial* efforts, and our choice was justified in the nature of the studied phenomenon. In particular, Madsjberg and Rasmussen advise this method in their book, the moment of clarity (2014), for situations

that regard humans as central actors, i.e. “phenomena”, and that are highly uncertain and unknown. Following the steps of sensemaking (frame the problem as a phenomenon, gather the data, find patterns, create key insights, build the business impact), we started by gathering data with our interviews.

The initial choice of adopting sensemaking was justified not only because of the fit, servitization being easily framed as a phenomenon characterized by uncertainty, but also because of a suggestion in the literature to apply this framework to servitization (Rabetino et al., 2018).

As we started to develop our model based on the individuated patterns, and then went back to the interviews, and back and forth to the literature, we saw systematic combining as a better fit.

The subsequent research approach fit with the methods of systematic combining as we first developed a concept map based on part of the empirical data (the first 10 interviews), and then carried out a preliminary literature review, and then incorporated further empirical data to develop a second concept map, and then carried out a more extensive literature review.

The concept maps consist of clusters of the themes emerging from the interview data, and constitutes our key takeaways from the interviews and developed understandings about what happened at the case company.

Through this process we utilized triangulation by incorporating different sources of data including company public accounts and interview data, and examined the credibility and possible biases of company published sources in order to ensure the quality of our study.

3.3 Quality of the study

We are serious about research integrity and have conducted a thorough evaluation of the quality of our findings. To this end we have adopted trustworthiness criteria, used specifically for qualitative studies (Lincoln and Guba 1985; Guba and Lincoln, 1994). According to these authors, trustworthiness in qualitative study consists of four criteria: credibility, transferability, dependability and confirmability. We will now examine each one of them.

3.3.1 Credibility

Under the qualitative study’s assumption that there may be more than one account of an aspect of social reality, the credibility of the study determines the study’s acceptability to the readers (Bryman and Bell, 2011; Lincoln and Guba, 1985; Guba and Lincoln, 1994). We utilize the recommended technique named triangulation (using more than one method or source of data) to increase the thesis’ credibility, by combining interview data with published official accounts from the case company to check the credibility of the findings.

3.3.2 Transferability

As Guba and Lincoln argue about transferability, i.e. whether or not qualitative findings “hold in some other context, or even in the same context at some other time”, is an empirical issue (Lincoln and Guba, 1985). Instead, we adopt the technique of thick description, with rich details about the phenomenon and social environment we study, to increase the thesis’ transferability. By giving detailed accounts about the interviewee’s descriptions of the servitization journey of the case company, we aim to provide the reader with contexts that are essential to understand the background of the data collected.

3.3.3 Dependability

To ensure the dependability of the study, Guba and Lincoln (1994) argue that researchers should adopt an “auditing” approach, having complete records of all phases of the research process available for peers to check and evaluate. We have described clearly the entire research process, from problem formulation, main purpose to the methods we used, and all our transcripts are available for external check and evaluation. Through this process we aim to make sure of achieving dependability of our findings.

3.3.4. Confirmability

Confirmability is to ensure that while complete objectivity is impossible to achieve in qualitative management research, the researchers should be shown to be acting in good faith throughout the research process (Guba and Lincoln, 1994). By making clear our research process and personal connections to the case company, we aim to increase the confirmability of this thesis.

One of us had a working experience at Ericsson, our case company, and developed close relationships with some interviewees during the process. The other one of us also developed favorable opinions towards the company in the thesis research and writing process. These facts may influence the stand we take in this thesis.

4. EMPIRICAL DATA

To the aim of our inquiry, we offer here Ericsson’s servitization experience, sewn together from interviews and desk research, as a canvas for our theory development. We will present our interpretation and conclusions on the phenomenon in the next section, the analysis.

The first sub-section is a necessary introduction to our case company, in which we provide some general information. The following four sub-sections contain our empirical data, and assume a cross formation: first horizontal description (conceptual), and then vertical (in time).

The first two sub-sections explore some early challenges in Ericsson’s servitization journey, presented with a duality between an external and internal perspective, i.e. themes that

regard customer relationships and internal organization, respectively. This division is justified by dividing servitizing efforts as pointed externally, to customer relationships, and internally, to internal structure and organization. Another way to conceptualize the distinction is by dividing between solution delivery and solution creation, respectively.

The last two sub-sections present data from before and after the unprofitability crisis and deservitization observed in Ericsson. Nevertheless, references to Ericsson's performance over time, as well as to specific business cases are dispersed in the sections, to give some references to the state of the company in a point of time, as well as some grounding in real life cases for the explanation of concepts emerging from the interviews.

4.1 Ericsson as the case company

Ericsson is a Swedish telecommunications company, and is a large multinational enterprise going through the servitization process. Headquartered in Stockholm, Sweden, Ericsson operates in 180 countries and has around 95,000 employees. It offers a wide range of information and communications technology and telecommunications products and services. Ericsson was founded in 1876 by Lars Magnus Ericsson, and started out as a service company delivering telephone repairing services in downtown Stockholm (Dasselaar, 2014)¹.

After some years, Ericsson started to develop its own telephone products, and with time it expanded outside Sweden to become a large multinational telecommunications company mainly selling network products; until the strategic decision to engage in servitization in the 1990s.

In the 2014 annual report, Ericsson counted 65,000 employees in services, and identified technology leadership, service leadership, and global scale and skill as three pillars for further growth and development. In the 2018 annual report, service headcount was downsized to about 49,800, and among the three pillars, service leadership left its place to product-led solutions. What follows is our inquiry in to why this happened.

The following graph gives an overview about Ericsson's profitability in the studied period.

¹ Dasselaar presented some of the information in this section in a conference in 2014 on servitization. While this source is not academic, it offers interesting internal insights and understanding on servitization, and how it had been conceived by Ericsson.

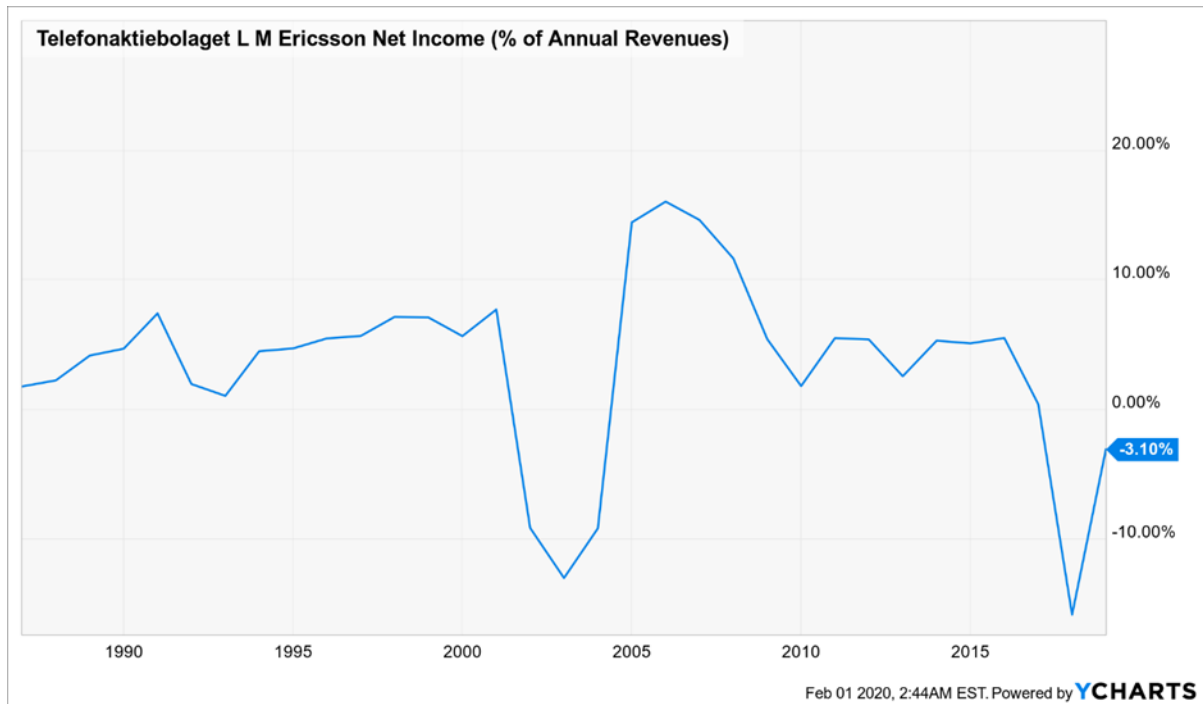


Figure 4: Ericsson's net income as a percentage of revenue from 1986 to 2018.

Source: YCharts, a financial statistical website adapted from Ericsson's annual reports

During the period outlined in the graph, there are two periods when Ericsson experienced long periods of unprofitability, during 2001 to 2004, and 2016 to 2018 on the graph. Both periods' unprofitability had major causes other than the main phenomenon of servitization central to this study.

While the first period of unprofitability happened during the beginning phase of servitization period, and more servitization was seen as part of the solution to the unprofitability, the second period of unprofitability led to a change of strategy towards "going back to product". As a result of the changes in strategy, Ericsson has seen positive profits for the year 2019.

Our focus is on the second period of unprofitability, as it made the company change its servitization strategy. Without detailed statistics on services' profitability, we take the change of direction as the indication that some parts of the servitization strategy had effects on the company's unprofitability.

4.2 Customer relationships and external challenges

The first side of our data encompasses customer relationships.

4.2.1 Demand for products as services

According to one of our interviewees, servitization for Ericsson started around 1996 (interviewee 6). Ericsson's initial ambition was to transform from a product-oriented company to a service-oriented company. Multiple interviewees stress the importance of customer relationships to Ericsson's decision to servitize (interviewee 11, 14, 15).

In the late 1990s, there was a high demand for solutions as services. This can be explained in two ways. Firstly, this is consistent with the observed trend of decreased relative importance of owning the infrastructure or the product, as it traditionally was in the business, and an increasing interest towards the actual functionality of products (interviewee 10). This kind of thinking is what has led to, among others, the sharing economy. Secondly, an additional reason for the demand can be explained in the fact that shifting to a subscription model lowers the barriers for utilization of a given solution. This in turn opens doors to more customers who would otherwise not be willing to purchase (interviewee 1).

Another driver for the demand is found in the complexity of technologies. As complexity grows, the required investments increase, not only for the product or infrastructure, but also for the knowledge acquisition. By not only selling and installing the product, but also managing it, Ericsson can monetize on the opportunity, as customers have different levels of technical knowledge.

One of the earliest service initiatives in Ericsson, is the T-Mobile case. T-Mobile is a brand used by German telecommunications company Deutsche Telekom AG. At the point in time of the case, it was one of the top 4 within the telecommunications market in the US. To increase Ericsson's presence in the US market, it was decided to start selling a billing system to T-Mobile as part of its portfolio.

The first change was to sell the billing system as a service instead of as a product. Ericsson's decision to servitize this product was explained in one interview: "So there were two drivers. First of all, Ericsson saw the opportunity to create a hosting of managerial services to gain competitive advantage, and also the customer could see that they can acquire visibility by buying it as a service" (interviewee 14). The interviewee stressed the role of customer relationship in the servitization decision for the case, regarding it as "essential" (interview 14).

4.2.2 Contracts, use cases and subscription model

The product as a service transition was a recurrent theme in the interviews. From a customer relationship perspective, selling a product as a service, meant that a contract should be provided that included all terms necessary to guarantee a continuous and complete service over time. This imposed hard challenges on the prediction of future events that would be relevant. It is hard to take into account what can happen over time, but there is no better way, said the interviewees, to approach the transformation: "you will meet a lot of hurdles and challenges but at the end if you solve all these fights, then you will have something, some basics, and then you can go to sell more as a service to other customers." (interviewee 1)

Contracts are necessary between service provider and client, and serve the function of showing simplicity and building trust. Simplicity is really one of the points of providing as a service, and is internally referred to as "quest for easy" (interviewee 9). Transparency is needed as well in the quest for easy, and this requires knowledge about likely factors to be relevant during the lifetime of the contract, something that comes with experience

(interviewee 1). As we will see, the simplicity on one side creates complexities on the other side, that Ericsson was not always able to handle.

Contracts have been defined multiple times as “catalysts” for customer relationships, and therefore build on the argument presented in the literature review, that they can introduce further business (interviewee 1).

Interviewee 1 really stressed how these initial phases constitute an experiment for Ericsson, and that learning is constantly occurring. Getting a contract ready is important to initiate a relationship, during which precious lessons can be learned by Ericsson for the application to future cases.

In fact, the term “use cases” was used to describe a practice that constituted support for business during negotiations. Use cases served a dual function. From one side, they showed the customer how value could be created; this is not always obvious. In fact, Ericsson encounters different levels of customer awareness among its clients. While some customers only have a faint idea of what they want to achieve, others are better informed on the possibilities and can clearly indicate what they are after. During a deal in Japan, for example, the clients were well aware of the technology, and what it could do for them. The other function of use cases is to show that the solution has already been implemented, confirming both Ericsson’s capability in the delivery, and the desirability of the solution from the customer’s side. In this sense, it provides social proof (Cialdini, 1984). This has been stressed multiple times in the interviews (interviewee 1, 2, 7, 8). In the deal in Japan, a use case from Finland for a similar solution was used as social proof. The deal was closed successfully.

Another change that these initial servitizing efforts required, encompassed the pricing model. Shifting to a subscription-based pricing model entailed a continuous stream of smaller revenues, as compared to the big inflows typical of the previous transactional based business model. This shift is desirable from the client’s perspective, as we have described. From the provider’s perspective, the effects are both positive and negative. From one side, smaller, distributed revenues introduce more predictability and less variance. The different model also helps in keeping contact with customers, something harder to do if there is only one big sale (interviewee 1). From another side, challenges are presented internally, as we will see further on.

There is an additional upside to the transition, in the fact that it aligns the two parts’ interests. Previously, manufacturers were offering reparations, for example, as part of their services. This introduced a conflict of interests: while the company was eager to keep the relationship alive, by offering maintenance and repairs, the customer would gladly avoid having to come back because of a broken product.

By providing as a service, everything is predetermined and included in the contract, the price presented upfront, and the company has a reason to invest in quality, minimizing the internalized costs of maintenance. The alternative would be to either hurt its own profitability or have to offer a less competitive price.

4.2.3 Customer relationships in the T-Mobile deal

Returning to the T-Mobile deal, the internal uncertainties introduced by a different pricing model, as well as a different venture altogether, are what pushed Ericsson to propose a time span of the contract of five years instead of the standard-practice of two years, in the T-Mobile deal (interviewee 14).

The development of a clear contract based on a subscription model, is not the only effort that Ericsson put forward in its servitization, and in its desire to assist the customer as much as possible. To this end, Ericsson also timed the project so that it would coincide with T-Mobile's budget planning for the next fiscal year. According to the interviewee (14), the purchasing decisions at companies such as T-Mobile was a highly orchestrated effort, and every September or October the companies made decisions about what they were going to purchase next year. Taking this into account, Ericsson made the official project proposal between September and October, and smoothed the process.

In the end, the billing system was successfully sold to T-Mobile, and brought Ericsson into a 6 years partnership with the brand in the US (from 1996 to 2002). Ericsson became one of T-Mobile's trusted strategic partners for internal business support systems. Worth 600 million dollars in revenue, the deal was one of the most significant in the period of Ericsson's early servitization efforts.

4.3 Internal organization and internal challenges

We have described some of the challenges and best practices related to the customer relationship side of servitization. We will now look into what servitization entailed for the internal resources, the people, and the culture.

4.3.1 Talent management

Servitization required Ericsson to acquire the adequate talent and skills to face the new challenges. We have seen the significance of this challenge in the literature review.

One first clear step in the direction of servitization was hence to hire new personnel, and train existing one. This is a daunting process, extremely time and cost intensive, and the injection of a diversity of personnel, with their relative skills, mindsets and tools, will introduce difficulties and clashes.

One theme in the interviews that caught our attention, was the description of Ericsson's HR (human resources) strategy (interviewee 1 and 10). The interviewees explained to us how Ericsson turned these turbulent and difficult times as growing opportunities, giving them a more positive note. In particular, the arrival of technologies such as automation, give reasons to organizations to engage in downsizing, and acquisition of new, more specialized personnel. This is why automation and new changes are also usually met with resistance.

However, instead of just firing the old departments and implanting new ones, Ericsson tried to push old employees to re-educate themselves, and apply to the new positions, interviewees said (Interviewee 1, 8).

4.3.2 Misalignment and division

Another peculiarity of the T-Mobile case that was mentioned in the interviews was the misalignment in internal incentives. It was found that incentives for product related activities did not work well with service-related activities, also due to the revenue and cost differences between the two types of sales.

We have described the positive aspects of a subscription-based model. We stated that the simplicity for the customer is reflected by challenges on the other side of the business model. One challenge is how the revenues is now redistributed (interviewee 1, 8, 13).

This is how the challenge was described by one of the interviews (interviewee 1):

“If you bundle everything together and then you charge your customers per minute or per megabyte, then you get paid a sum from a customer. Now, how you distribute this money is a huge challenge for Ericsson”.

This is because in the days of hardware and software distinction, every unit had their clear revenues and costs. But in order to provide a unique solution, these need to be merged, and receive as a consequence a unique sum. The challenge consists in determining who expects what share of the revenue. In addition, the financial and accounting tools to manage these changes were just not initially in place. (interviewee 1)

As an example:

“Ericsson’s accounting processes were designed for transactional sales. And also, our cost model was based on that... But when you sell as a service, you get smaller amounts of money, over a more regular basis. So, the internal accounting model of how you map the cost to your revenue, your cost base, had to be re-developed.” (interviewee 13)

In the T-Mobile case, this inherent difference in revenues, motivated a new incentive system (interviewee 14). Following, with time it became more and more clear that services had their own intrinsic requirements and characteristics. To address this misalignment between products and services, it was decided to have two parallel organizational structures for product and services, with different key account managers and incentive structures.

“So at the time we decided to split the organization, we in the end had the account manager for products, and the account manager for services. That was one way to handle the conflict there in our selling side in the organization” (interviewee 14).

In addition, the service unit had now their own profit and loss responsibility, their own room to move and create capabilities necessary to deliver new services (Dasselaar, 2014).

4.3.3 Change resistance and inclusion

Following the changes, during the late 2000s, service delivery was changed in Ericsson. Ericsson established multiple centralized, global organizations to deliver large-scale, repetitive tasks cost-efficiently and effectively (Dasselaar, 2014).

These are part of changes that occurred during an internal case, dealing with wireless products. This case saw resistance from the lower segments of the company. While high level executives and managers were favorable about the changes, active engagement and involvement weren't observed from engineering and product-related personnel who had been developing the product for a long time and did not want to change (interviewee 15).

Interviewees commented:

"You know comfort zone. People always want to do what they have been doing."

"It was a challenge getting the commitment from the lower level managers and the technical side's individual workers". (interviewee 15)

Because the engagement of these personnel was very important for the project, Ericsson was reported to make every effort to take in their perspectives and understandings of the project into account in the servitization process. (interviewee 15)

"Getting all of their names and asking for their opinions (in an individual setting). In the process we gave them an opportunity to say what they wanted to say, and so they would not end up with the feeling that they were left out of the story. At least we should give them an opportunity to be involved and be part of the change process." (interviewee 15)

4.3.4 Culture

Involvement of everyone in the organization is one of the main principles of Ericsson's culture. Interviewee 3 referred to this concept with the term "democracy".

"Ericsson is more democratic and more open. But it's not so easy to drive things when you know that people are different. Everybody has a view. So many meetings, so many systems, so many platforms, so many people. Digitalization is really helping to break all of these things but still we have a long way to go". (interviewee 3)

The challenge of bringing everyone together is a common theme in the interviews. One of the interviewees (5) calls for better cohesion between product and services units in Ericsson, and underscores the importance of each unit having knowledge about the other, stating that service people were not really working closely with product people. The interviewee stated this area as one that could need some improvement. Interviewee 3 stated that these internal cohesion challenges will probably never really be solved, and that they probably do not need to be solved completely, but just managed. And in the management of the internal differences, digitalization is a term that has been recurring. Digitalization has been seen as a potential mitigator, towards a better management of internal data and greatly improved internal communication, especially in a big enterprise, where it's common to have a different digital system for every department (interviewee 1, 3, 8, 9).

Engaging in servitization means to encounter lots of new challenges, which cannot be accurately pre-defined and addressed with a communication of a strategic solution to apply to a problem.

For these reasons, the ability to move in an agile manner in the uncertainty is fundamental in servitization.

Another recurring term to address Ericsson's ability to move forward towards an uncertain future is "heartset". This term has been introduced as opposed to mindset, exactly to stress the unpredictability of the challenges of servitization, for which only a true sense of purpose and direction, and a reliance on instincts and intuition can help in finding new solutions to new problems (interviewee 6). This characteristic is essential to acquire that agility that is required to adapt to a new servitized organization. The term agility appeared in multiple interviews (interviewee 3, 8, 10).

After the efforts, the wireless product case ended up being a great success that saved Ericsson hundreds of millions SEK worth of research and development investment, and the internal reorganization made the research and development department more efficient (interviewee 15). The end customers' requirements were met with the servitized wireless solutions, and the transformation supported further commercial sales in this area. Achieving cost reduction, increased competitive advantage, and cultural coherence, the case provides significant insight about what servitization can bring to an organization. The challenges from internal side was managed well in the initial and deepen process of Ericsson's servitization.

4.4 Servitization success and failure

By the mid-2010s, the aforementioned servitization efforts saw Ericsson's services revenue increased by around 50% (Elfving et al, 2014) and services and software together increased by around 66% in 2013 from 27% in 1999 (Dasselaar, 2014).

4.4.1 Service innovation and profitability assessment

One of the reasons for Ericsson's increased profitability at the time can be seen in the theorization of the service innovation model, and its consequences on profit. This model was presented by Dasselaar in the conference from 2014.

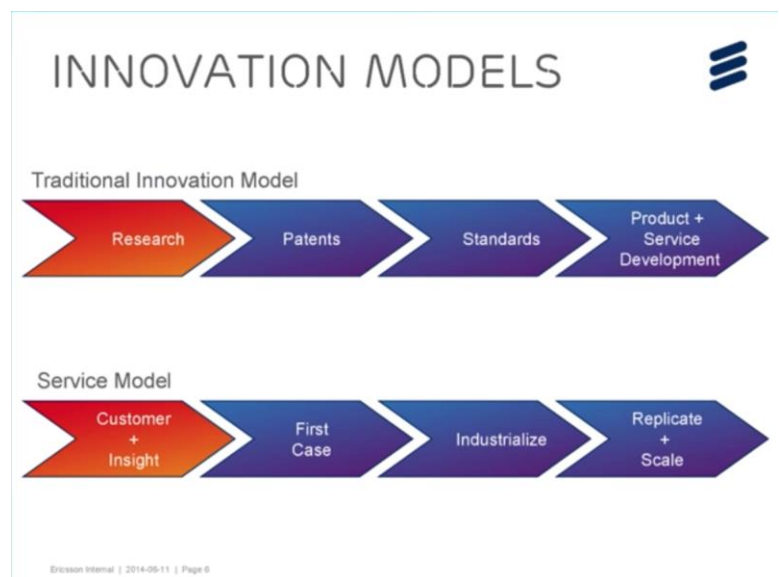


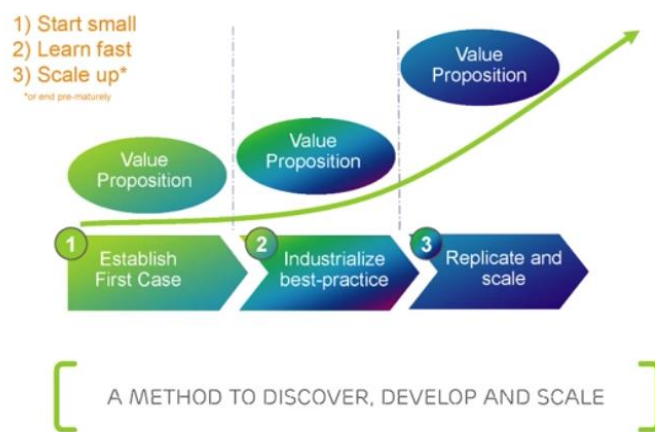
Figure 5: Service innovation model

Dasselaar (2014) addresses the differences in product and service innovation models. Product innovation typically requires lots of research, high upfront investments and many years of development, aimed at creating intellectual property rights. The final result is considerable returns, if successful.

On the contrary, service innovation requires smaller investments, is faster, and returns incremental revenue. However, there is a relationship between the two. In particular, service innovation is dependant on product innovation, and works within the time constraints determined by the product. This is because services needs to be developed to increase the utility of the product, and if the product technology is replaced, then services related to the previous technology are no longer relevant.

So service innovation needs to happen faster than product innovation, and capture profits within the relevant time frame. This process is described in the second picture, and is divided in three phases. When customer relationships are initiated, Ericsson needs to verify

GROWING THROUGH THE TRAMPOLINE



what needs the customer has, and determine if a solution can be created with Ericsson's resources. The solution needs to satisfy some requirements. If the solution is not scalable and replicable, it cannot be profitable. Because of the initial investments, one case is not enough to generate profits. For this reason, the solution needs to be applied in more cases, and in order to generate profitability, economies of scale need to be applied.

Economies of scale are mentioned in the interviews as well (interviewee 9). All of these characteristics need to be determined in the assessment phase in the new customer relationships. And they need to happen fast. It's extremely important to preserve trust and a good reputation, and if the project

is determined to be unprofitable, then it should be abandoned as soon as possible (Dasselaar 2014, interviewee 9).

An interviewee comment on service innovation:

"We cannot simply have a one-size-fits-all for everybody, which means we have to uniquely look at the situation of our customer but we have to do that with scale." (interviewee 9)

Economies of scale are possible, if customizations occur at the service level. To keep the costs low, the supply chain must remain untouched, as that is expensive to modify. Interviewee 9 described it this way:

"It's lot cheaper and easier to scale services and they don't affect the supply chain as much. Try to make a product that fits as many customers possible."

Despite the theorization of the service innovation model, it took some time for Ericsson to develop the needed skills and best practice to obtain sustained service profitability. And these learnings were developed during what has been defined as a crisis.

As a matter of fact, up until a few years ago Ericsson would have been an example for large-scale servitization. However, recent years have seen the deceleration and even standstill of the servitization process (Lienert et al, 2019), and the company has been observed to be going back to a product-centric business logic, experiencing deservitization. Some sources even claimed the whole servitization to be a failure (interviewee 13).

4.4.2 Failed service initiatives and the crisis

In the period of 2016-2018 Ericsson had a deal with a famous electronics company that is significant because it represents a failed attempt among the service initiatives at Ericsson. In this case, Ericsson was selling business solutions to the client, which was not the typical telecommunications client Ericsson's used with (interviewee 13).

The client had a demand about a certain solution it wanted to be provided as a service, that Ericsson at the time had not available. Furthermore, there were already competitors offering this business solution as a service, and they were not telecommunication companies like Ericsson, but traditional suppliers whom had a much longer history of customer relationships with this electronics company. These suppliers were already doing what Ericsson wanted to do and were more established in this particular niche market.

"At the time, the customer had a strong preference for having a service offering for this particular project, as the customer looked for a long-term solution to their issues, not a product-oriented one-off sales effort." (interviewee 13)

Ericsson had the relevant product but had no particular experience or expertise suitable to deliver the business solution as a service. Despite the negative premises, the project was continued and a contract was signed.

Insufficient preparation led to a clash between the sales personnel who signed the project and the personnel who were in charge of delivering the services to the client. The terms of the sales deal proved to be very problematic to deliver within the timeframe specified, and quite costly as well. The interviewee maintained that the internal changes needed to deliver the contract terms were proven to be very difficult for the delivery organization, and the customer requirements were costly to satisfy.

By trying to deliver to a non-typical client with high expectations, Ericsson in this case went into an inefficient, costly project to satisfy a contract that ended up being non-profitable. The contract is still binding to this day but will not be renewed once expired.

The interviewee explained the failure:

“The worst-case scenario is that you get contracts that are not profitable. There are a lot of reasons why they’re not profitable, but the biggest impact on the company is that if you sell something you cannot deliver, it will not be profitable.” (interviewee 13)

According to the interviewee, several similar service initiatives failed for similar reasons. The interviewee expressed the opinion that Ericsson overstretched out of its competence zone, and experimented with projects that failed and turned out unprofitable (interviewee 13).

The interviewee stressed the differences between the right and left parts of the business model. While the offer looked quite simple to both Ericsson and its customers, the simplicity corresponded to a more hidden complexity in the left side, which manifested itself in the delivery, sometimes leading to failure.

Starting from 2015, Ericsson experienced a large-scale crisis on revenue and profitability, seeing its profits turning into losses, and reported operations income of -12.8% in the annual report of 2017.

4.5 Readjustment and new direction

4.5.1 “Going back to product”

Under these circumstances, a strategic decision was made to change direction, this time back to product, under the guidance of the new CEO, Börje Ekholm. Services revenue and personnel have seen cuts ever since at Ericsson, and the product is back at the center of the company’s identity and image. Service personnel has been reduced from 65,000 in 2014, to about 49,800 today, a decrease of around 23.3%.

Gartner analyst Sylvain Fabre said about the change of direction:

“Now the market is pressuring them for transformation and clarifying what they are, and what they need to do. It’s a case of being a little clearer of what they want to do when they grow up.” (Fabre, 2016)

“Going back to the product” was a recurring phrase in the interviews (interviewee 6, 13, 14). One of our interviewees describes the reason of going back to product as “focusing on being a world leader in the technology and product and focusing less on services to have the strongest portfolio” (interviewee 6). In other words, Ericsson find readjusting servitization and back to product orientation as an effective strategy to gain competitive advantage in the market.

Going back to product entailed a reduction of relative importance of services.

Previously, another example of ineffective coproduction of value had been described in a business case in which Ericsson was dealing extensively with 3rd party product integrations for its customers. Getting rid of these high-cost low-impact, as well as poorly scalable activities resulted in significant cost savings:

“So many of those accountabilities, those responsibilities went away with us divesting, or moving away from those system integration activity” (interviewee 6)

Another fix that Ericsson performed in this period was about project selection. To address the negative profitability from previous cases, cross functional teams were used to specifically determine the feasibility of a project.

Again, regarding Ericsson’s agility:

“People just create these when they say that there's a need.” (interviewee 5)

The back to the product focus was an essential step, but it was not an abandonment of services. This is how it was argued in an interview: “But if we do not start from a customer centric perspective then we lose the uniqueness, we lose the true problem that the customers are trying to solve and then we will not be as relevant to them as we could be.” (interviewee 9)

4.5.2 5G and the new direction

Competition was a powerful driver for the next technological challenge, 5G. A project that started in 2017, it signifies Ericsson’s new direction in a balance between product and services. Failing to focus on technology development could entail missing out on a huge opportunity.

5G is a new technology that enables more efficient networks and new business opportunities across industries (Ericsson, 2018). As global mobile data traffic is expected to grow eight times by the end of 2023, there is a need for a more efficient technology, higher data rates and spectrum utilization. New and emergent applications such as 4K/8K video streaming, virtual and augmented reality and other emerging industrial use cases will also require higher bandwidth, greater capacity, better security, and lower latency. Equipped with these capabilities, 5G will bring new opportunities for people, society, and businesses (Ericsson, 2018).

Today, Ericsson is a leading provider of this new technology.

The interviewees (Interviewee 3, 8 and 16) talked a lot about the good premises of 5G. The current CEO of Ericsson, Börje Ekholm, also had a positive account about the first results of the refocus. “The global radio access market is recovering from several years of negative growth and our investments in R&D have positioned us well to benefit from this development” (The Local, 2018).

In the context of 5G, one interviewee reflected on the mistakes of the past, and stress the importance of balancing customization and profitability:

“5G is also very customizable in a way but we found that in the past we have been customizing our products too much for customers so that we couldn't deliver them at a low cost on time, and so now I think with the cost pressure of 5G that we can't continue to keep our products as customized.” (interviewee 5)

In the 5G and the new combination of product and services, the customer needs are still central to the whole project:

“A lot of the 5G now combines product and services... with the major driver more on the customer side.” (interviewee 8)

“At first, the end users of our services put their demands on our customers, who in turn have demands on us to deliver 5G as a solution combining products and services.” (interviewee 16)

Interviewees stress the key point that having a good product is essential for managing the balance of mixing products and services to form an integrated solution. Interviewee 8 put it simply: “it helps that the product is good.” Having a core product that is competitive goes a long way to satisfy the customer requirements for a solution and follow the best practices in the competitive market (interviewee 8).

The interviewees also emphasize that looking into the future and establishing the strategy today with the understanding of tomorrow goes a long way in identifying the right mix of products and services for 5G at Ericsson. Interviewees mentioned that many of the 2018 onwards deliveries to the customers were 5G ready, and the aim to be future proof aligned customer's expectations very well with Ericsson's delivery abilities, contrary to the pessimistic picture from the earlier failure case (interviewee 8).

“The desire to be future proof goes a long way of aligning the customer requirements with our delivery ability. What we have done with the new base stations that we have, is that they are ready, upgradable (to 5G) so that the customers will only need a single upgrade in the future to the 5G generation.” (interviewee 8)

Today, Ericsson is one of 5G leaders, counting 24 active networks in 14 countries, at the moment of writing this thesis. A map of all the 5G deals Ericsson has made to date is available in the appendix.

5. ANALYSIS

In this section, we aim to respond to our research questions, based on the data we have presented in the previous section.

Our initial inquiry was:

How can servitization induce unprofitability?

We argue that unprofitability in Ericsson was a consequence of an “excessive servitization”. The excessive servitization consisted both in going to an excessive length in the servitizing efforts and in ignoring important counterparts, tilting important balances.

In our data, we divided the servitization efforts in two streams, left and right. The left side is concerned with the solution delivery and customer relationships. The right part is concerned with solution creation and internal organization. These perspectives can also be defined as external and internal, respectively.

5.1 Customer relationships

From the customer relationship's perspective, we have extensively seen how Ericsson has engaged in customer focused activities, trying to help the customer, listening to their requests and investing in finding solutions to their needs, in the pursuit of coproduction of value.

This process represented a drastic change in the way of doing business, and required Ericsson to engage in deep discussions with its clients. The task was to listen to their challenges, and by understanding how they themselves were creating value, determine what it could do to help them reach that goal. Ericsson is in the position to do this because of the availability of capital, R&D, knowledge, and economies of scale. Combining these resources, Ericsson can develop a solution, specifically aimed to the customer, that can increase the customer experience and value of the product.

This is a process of customization, where the product and its basic functionalities are conjuncted together with services, to create a solution that is tweaked towards the customer's needs. It has to be noted that while specificity increases the customer's experience, it sacrifices versatility, and therefore applicability to different uses. In addition, investments increase with specificity, requiring more and more research, consulting and adjustments.

With the electronics case company we have seen how some projects were undertaken that fell outside of the organizational aim. In these cases, Ericsson went out of its way to promise something it did not have reasonable competences and bases to offer, resulting in failure to deliver and unprofitability. While experience helps in determining a proper project selection and execution strategy, we argue that signals were present that indicated possible failure, which could be avoided.

To clarify what can go wrong in these cases we insert the concept of what we have termed "excessive customization". Excessive customization can occur in two directions: depth and breadth.

Venturing too deeply in a customization results in addressing too specific needs. The specificity might create value for the customer, but will sacrifice its replicability and scalability. In particular, sufficient additional demand for the particular solution might be lacking, and/or economies of scale might be hurt from the intensive investments needed to reach the depth. In the case of 3rd party product integrations, as we have seen, costs were high and replicability low. Abandoning these initiatives improved Ericsson's profitability.

Another thing is excessive breadth of focus for customization. Engaging in service dominant logic and helping the customer can easily dilute the organizational focus on key activities, and push the organization, especially in experimental phases, too far out from the main aim. This can easily create problems, as we saw in the electronics company case. Required investments can easily build up, while probably better suited competitors are already present in the market, that can offer the same solution at a more convenient price, having already returned from initial investments before.

In both cases profitability is hurt by high costs. Getting depth and breadth right, finding balance between specificity and increased value for the customer, and capability and costs of delivery, will improve profitability. In addition, the solution needs to satisfy the requirements of scalability and replicability, as defined by the service innovation model. As we have seen, this is needed so that investments can be recovered, and profits created, as the investments needed to find a solution are too high to be returned from a single case.

So, what turns out from our analysis, is that the problem was not in Ericsson's ability to find a solution to customer's problems, but in the projects Ericsson was giving attention to.

This is counterintuitive. Traditional literature puts all the focus on the company undergoing servitization and the skills it needs to develop to actually provide the needed solutions. But Ericsson was not having issues in creating value for its customers, the solutions were not creating value for Ericsson.

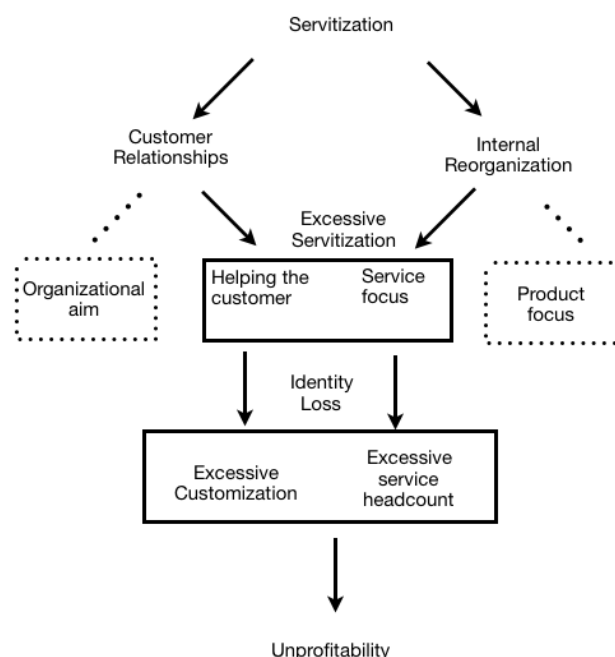


Figure 7: Our analytical framework
How excessive servitization lead to unprofitability

5.2 Internal organization

From the internal organization perspective, on the other side, we can see how Ericsson focused on services by increasing its service unit headcount, namely by acquiring new talent and train existing one, and engaging in cultural transformation. A necessary step in

servitization, this transformation should be proportioned to the needs dictated by services, and should not undermine the existing product focus.

Ericsson's initial transformation was not grounded in a true need for such a significant service dominance, it was just decided to assume a certain profile for servitization. In addition to a high headcount, and the described engagement in very specific and costly service initiatives, the transformation came at the cost of the product.

By ignoring the product in servitization, the result was an ineffectively big service unit without a clear aim. This condition, together with an ineffective customization in project selection, leads to what we have defined as "identity loss". Identity loss because the introduction of services in the company created confusion, and diluted the company's focus on its aim and on its main strength: the product. The resulting aimless organization does not take into account the company's purpose, its mission, and the ways to achieve them. In particular, the company is lacking organizational aim and product focus.

5.3 Organizational aim

The term "organization" refers to the organization of resources and knowledge for the fulfillment of a specific purpose. Ignoring this purpose means making a bad use of internal resources and expertise, which can therefore not be as effective as the implementation of said resources in the intended field of action. One argument is that projects outside of the company's scope are irrelevant, and represent a focus dilution hazard to the organization. Another argument is that these projects will hardly meet the requirements of scalability and replicability called for from the service innovation model, and/or present excessively high costs as we have explained. But the strongest argument we find in the notion of impact. Organizational resources and knowledge are meant for a specific purpose, where their implementation can achieve maximum impact, and any outside implementation cannot be as effective. In order to achieve maximum impact, services need to build upon the impact that is being created by the product, for which the organization is created.

When Ericsson ventured outside of the original focus, it was losing organizational aim. When it was dedicating energy and time to excessively specific activities, it was also failing to contribute to the organizational aim. The lack of organizational aim in the servitizing efforts, determined a lack of guidance, that compromised Ericsson's profitability and contributed to identity loss.

5.4 Product focus

Without product focus, the company will ultimately be beaten by the competition, and have no relevant solutions to offer. Getting back to the notion of impact, the company must of course make sure to survive in order to be able to create value. Competition in the manufacturers sector is strong, especially with commoditized products, and it's of utmost importance to do everything possible to stay ahead of it. Services allow thereafter to introduce diversification opportunities where commoditized products fail, and also to capture further profits left on the table, as well as to build stronger relationships with customers

because of better solutions and closer collaboration. But if product development is left behind, services will do little to enhance the experience of a product customers do not want.

By downsizing the product unit in Ericsson, and downplaying its importance, Ericsson took a step in the wrong direction, overestimating service headcount needs, and introducing higher costs. The following re-transformation that was necessary to acquire the desired profile, was as costly as the initial one, requiring further training and hiring.

5.5 Renewed identity

By taking organizational aim and product focus into account, a balance was introduced which mitigated the negative effects of excessive servitization. The balance works on two planes.

On the customer relationship side, helping the customer (customer focus), which enables the coproduction of value and improved solutions necessary for servitization and distancing from competition, must be balanced with a strong and defined organizational aim, that works both as a guide and as a boundary, to determine what projects should be undertaken and what not.

This balance represents the conjunction of everything Ericsson has learned from servitization as well as from project selection, the assessment phase, and use of contracts and use cases. With boundaries in the project selection, consistent profits can be derived in the product life span, before the next technology is introduced and a new set of services needs development. This way, consistent long-term profitability can be achieved.

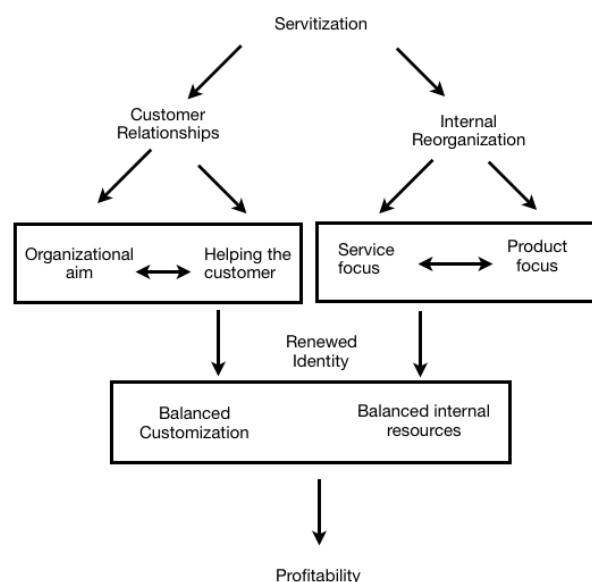


Figure 8: Our analytical framework
How balanced servitization lead to profitability

On the internal organization side, the service focus, with all the notions we have introduced about cohesion, agility, utilization of internal knowledge and heartset, must be balanced with

a strong focus on the product. In Ericsson's case this meant downsizing an inflated service unit, now with a more specific aim, while putting focus back on the development of top-tier products, as is the case with 5G.

This way the company finds a renewed identity. Renewed because it's not a mere going back to the product and withdrawal from the servitization initiative. It's a new organization, with improved tools to fulfill its purpose, and increased knowledge of itself and its customers.

With this explanation we answer our second research question, and give a rationale for the observation of deservitization in Ericsson, that in our analysis is part of the solution to unprofitability.

For this reason, we regard servitization as a meaningful journey that brings an organization to a deeper level of understanding of itself, its customers, and the value creation that connects the two parts.

Our empirical data pointed in a direction of excessive servitization, and following readjustment to a more balanced position. But an opposite scenario can be inferred with the same variables. What would have happened in the case of an insufficient servitization? We would have observed an opposite representation of our conceptual model, where organizational aim and product focus were prioritized at the expense of customer and service focus.

We argue that a low customer focus cannot contribute to the value enhancing solutions that customers demand, and that a low service focus pertains the category of low-impact servitization, as described in the literature (Visnjic and Looy, 2013), and further fails to contribute to coproduction of value.

This configuration does not take full advantage of added services, and does therefore not constitute a meaningful servitization. Failing to engage in meaningful servitization can therefore also be a reason to failure to competition.

While most of the literature has focused on how to implement servitization, we have focused on managing its implementation so to preserve the organization's integrity, consisting in organizational aim and profitability. With this new direction, the firm can engage in new, deeper and more meaningful value creation with its customers.

5.6 Levers of control

The solutions we identified to address Ericsson's unprofitability, made us see an opportunity for the application of an established framework in management research: "Levers of Control", by Robert Simons (1995).

Simons' framework individuates four key control systems to be used in management strategy: the belief system, the boundary system, the diagnostic control system and the interactive control system (Simons 1995).

The belief system and interactive control system are positive, and they encompass core values and strategic uncertainties, respectively. The diagnostic control system and the boundary system are limiting, and encompass key performance variables and risks to be avoided respectively.

The application of Levers of Control from Simons helped us in understanding how the tensions of servitization can be managed. In particular, the introduction of new and completely different elements in the company's strategy is a challenging task. While preparations and effort are necessary to successfully implement service elements in the company, we argue that other problems can arise during the transformation. In this sense, servitization, with its implementation of focus on customers and of a different business model, can potentially derail the company from its direction and induce confusion and low efficacy. So, our discussion revolves less around how to successfully implement servitization in its particular aspects, and more on how to integrate servitization with what the company is already doing, with the aim to reach a new enhanced balance, resulting in greater customer experience and awareness, among other traits. This level of analysis is induced and reflected by our data as well.

Going outside of the specific area of servitization, and considering the company as a whole, and how it is affected by servitization, a more holistic framework can help in studying the relationships between different variables.

From our analysis, we can argue that Ericsson needed a particular development of the boundary system, and a strengthening of the belief system.

These are the systems that were more significant in our analysis, as they presented key areas of development to successfully integrate servitization.

In particular, a boundary system needed to be defined, so to limit what projects Ericsson should give attention to, and which risks to avoid. While the belief system was important, as Ericsson lost its grasp on the core values of the company. Going back to product contributed to put this system in balance.

The other systems are of relevance as well to our analysis. In fact, Ericsson showed a capability to implement the interactive control system, which is aimed at incorporating all levels of feedback in the organization. This is to make the best use of the emergent strategy, as opposed to the established strategy, which is the aim of the diagnostic control system. We argue that Ericsson developed many best practices and strategies, that it established as standards to define a clear path to reaching its goals.

In summary, Simon's framework helps in underlining how tensions are managed. The application of the framework allows us to directly and exhaustively spot the key areas to watch while undergoing uncertain transformations, such as servitization. The concept of managing tensions is useful for our framework as well, and as we have described, servitization efforts, directly stemming from reasonings that are deeply supported in the literature, can induce imbalances that are corrected by keeping in mind the counterparts to

those specific servitizing efforts. In particular, focus on the customer must be contrasted with a strong sense of direction, or “organizational aim”, for which resources are organized. This dictates what to do and what not to do, and is reflected mainly by the boundary system. We have described how boundaries were put both in depth and width, concerning both “how much” to customize, and which projects to avoid. On the other side, service focus, in particular regarding its consequences on the internal organization of the company, must be contrasted with product focus, as this is the main driver of the company’s success, and it’s necessary to put enough resources on the product so to not be outcompeted. This reconnects to the “identity” of the organization, also reflected in its culture. For this reason we hold that servitization can potentially harm the belief system of the organization, and that focus is needed on this system to counter the confusion and new ways of thinking, also by considering services as meant to enhance the experience provided with the product, and not substitute it, or develop independently.

Managing these tensions, we suggest that servitization is more likely to provide added value to the organization, as well as to its customers.

6. DISCUSSION

In this section we describe why we believe our analysis adds to our understanding of the studied phenomena, and deepen the existing knowledge of the servitization area.

As described in our methodology, we have engaged in theory development, free from excessive constraints and rigid theoretical frameworks, letting our theory evolve to be more and more representative of the truth, while our empirical case and our analysis were co-evolving, shaping each other, and exploring the literature while progressively defining our aim.

This way we believe our analysis to be representative of the data we have encountered, with no external influence. In our view, context defines the findings, instead of corrupting them. At the same time, we believe that by understanding a case in its entirety, deeply rooted in all its peculiarities, something more important can be learned, than general and vague correlational observations.

Our analysis has introduced a model, in its two configurations, that describes how servitization led to unprofitability in Ericsson, and how the decision to deservitize was part of the solution.

While the term “excessive servitization” has some minimal references in literature (for instance, in Min et al., 2015), the other terms we have coined, such as “excessive customization” and “identity loss”, and our models with their relationships are new contributions to the literature, that have not been previously defined and described.

We believe our model introduces a new perspective on servitization, connecting unprofitability to an excessive servitization, and explaining in detail the relationships from the two sides we have individuated. We believe this analysis adds explanations to the controversial phenomena of servitization and deservitization.

According to Kowalkowski et al., “the servitization-deservitization dynamics of technological shifts at company level are still not well understood, and represent fruitful directions for further research”. Our thesis has contributed to this knowledge gap by building two new analytical frameworks explaining how servitization can induce unprofitability, and how to avoid such an outcome.

In particular, we define two strengths of our findings and framework.

Firstly, we believe the challenges we have individuated in the excessive servitization to be of relevance, as they directly stem from service logic (Vargo et al., 2008). This means that the implementation of service logic, that is required for servitization to happen, can naturally lead to the encountered problems introduced in our framework.

From Gebauer et al. (2012) we can see that the challenges of servitization are closely linked to the concept of service paradox, and the tensions we identified add to our understanding of servitization in general and service paradox in particular.

In particular, we believe to have shown a clear path from customer focus to excessive customization. In fact, the thinking that revolves around helping the customer, by finding solutions to the defined problems, can easily lead to diluted focus, with the servitizing company ending out of its way in the pursuit of customer satisfaction.

One of the service paradoxes is the fact that the need to develop customer-centric capabilities to successfully provide integrated PSS is challenging to manufacturing firms (Baines et al, 2008; Miller et al., 2002; Windahl et al., 2004). We went further in this direction, and argued that excessive customization would lead to unprofitability from the external side.

To this regard, we recall the difference between the two latin etymological origins of the word “service”, *servitium* and *servus*. *Servitium* implies that a service is being provided, while *servus* implies that the company is acting as a servant, sacrificing its own interests.

This point is of particular interest, as servitization points in a direction of philosophical relevance, and we addressed this in our analysis.

In fact, coproduction of value implies the cooperation of two parties, the provider and the customer.

We have described how the reduction of the gap represents an increase in social utility, by aligning incentives, but it also introduces a tension, that can be argued to contribute to identity loss. In particular, firms are traditionally viewed as egoistic organizations, aimed at the maximization of their profits.

Coproduction of value, and the added notion of helping the customer, introduce the notion of altruism. This is necessary for a successful coproduction, but we have argued how it introduced the risk for self-negligence.

The other path we have presented is within the internal reorganization, where we believe that an attempt to internally restructure the organization can easily lead to a focus dilution as well, away from the core of the company, the product.

Another service paradox is the fact that servitization constitutes a critical managerial challenge (Oliva & Kallenberg, 2003), and that fundamental organizational changes are necessary to achieve the capabilities to compete in services (Brax, 2005; Gebauer et al, 2005; Martinez et al., 2010; Neely, 2009). We also went further in this direction, and pointed out that identity loss in the form of excessive service headcount would be the unfortunate outcome if internal reorganization from servitization was handled badly, which will also lead to unprofitability.

Secondly, we explore a more counterintuitive and somewhat unexpected side of servitization, focusing not on its initial implementation, but on the integration of an implemented servitization with the firm's original aim and focus.

Our account also provides a rationale for deservitization. In the context we have studied it, deservitization was part of servitization itself, and was in fact needed to reach the desired level of servitization. We hence reject our initial suspects, about deservitization somehow proving the failure of servitization. We instead see deservitization as an adjustment to an overextended initial servitization, but regard the whole journey of Ericsson still as defined by the term servitization.

We therefore stress the importance of servitization, from two perspectives. From the perspective of the organization, we believe to have made a case for the undertaking of servitization, despite its challenges. We argue furthermore, that a successfully servitized company might outcompete the other firms, if the levels of the products are comparable. From the perspective of the customer, closing the circle and therefore applying a societal perspective as well, we believe servitization is the continuation of an already started trend towards ever better solutions, technology, and value for end users.

We also reject, as by now quite established in the literature, the notion of linear servitization (Vandermerwe & Rada, 1988; Oliva & Kallenberg, 2003). Literature has shown servitization to be a long and complex journey that can involve extensive back and forth, and we confirm this idea with our findings.

In addition, not only do we admit that companies can go back and forth, but we also stress the concept of journey within servitization. In this sense, there is never a true "going back", even when moving on the spectrum, as servitization is a constant evolution, filled with learnings. This is especially true because of the integrated nature of products and services.

There seems to be the belief in literature that either product focus or service focus are applied at any given time in an organization (Kowalkowski et al., 2017). We reject that belief, stressing that the integration itself is the point of servitization. While the product is the parent of services, they are interrelated. In manufacturing's firms servitization, services cannot exist without the product, and a product without integrated services is likely to become an irrelevant and obsolete way of doing business.

It is important to mention that Ericsson seems to have handled certain challenges very well, leading them to not be mentioned strongly in the interviews, or not at all. In particular, the service transformation itself, and the ability to understand the customer and provide relevant solutions that create value, a topic that Valtakoski (2017) deeply analyzed, did not seem to be a challenge for Ericsson. Neither was the nature of self-fulfillment on the individual level, from Gebauer et al. (2012), worth mentioning.

Furthermore, the application of Simons' "levers of control" framework to servitization, is a new contribution, that invites for a more holistic perspective and analysis of the phenomenon. The framework helps in individuating key factors to consider in the complexity that is servitization.

7. PRACTICAL RECOMMENDATIONS

Our research was defined by a specific aim, that has been to discover the relationship between unprofitability and servitization, as well as how this could be managed. Our analysis has been articulated to this end. Nonetheless, this does not mean that the data has been used exclusively to this aim. We believe we have gathered an interesting set of practical recommendations in Ericsson's journey, that the manager interested in servitization of their organization can make good use of. Our analysis itself is thought to provide high practical utility as well, explaining just how servitization can introduce challenges, as well as benefits, and how to manage them.

To summarize the practical utility of our work, here are general guidelines for the servitizing manager.

We suggest to divide the servitization on 2 planes, as reflected by our analysis. On the customer relationship side, we recommend understanding service innovation, and looking for projects that are relevant to the aim of the organization, and inquire in what the customer's actual needs are. At this point, we suggest to fail fast, learn, and move on. Scaling will allow for profitability.

By failing fast, contracts are perfected to include the learnings and predict outcomes as precisely as possible. It's important for contracts to be exhaustive and precise, so that the process is made easy for the customer. Finally, by accumulating use cases the company can use these both to understand how to approach problems and as social proof for the customers, to demonstrate how value is created, showing that other businesses have benefited from a certain solution that the company can deliver.

On the internal organization side, we advise caution. Changing the structure and its culture are costly processes and should be justified by clear reasons. Finding ways to promote freedom and agility, without sacrificing efficacy, and trying to promote the necessary mindset to embrace the new changes.

8. CONCLUSIONS

With our analysis we believe we offer an account of reality that holds elements of truth to it. We have inquired about an important, interesting and controversial topic, and we believe Ericsson has a lot to tell about it. We have put all our effort in the presentation and interpretation of Ericsson's servitization journey, and we hope the analysis is as consequent from the data to the reader as it was to us when diving in it.

We believe servitization to be a topic of the essential importance, as it represents a step forward in value creation, which in our view ultimately lays at the foundation of business and societal progress.

Our view is that solutions can be found that are in the common interest of both parties, representing therefore Pareto improvements. We believe this property to be at the basis of progress itself, and that despite the negative connotations progress has always had in our history, that continuous improvements are constantly being developed.

We believe that by focusing on value creation, profits naturally follow for companies. And we believe that without this view, servitization is impossible. The complexity of it and the importance of what we have described as the heartset are too great for servitization to be undertaken as a mere "strategy diversification". Without a true vision of the future, a genuine interest in creating improved solutions for the world, servitization cannot be approached successfully. For the same reason, servitization cannot be perfectly described, as it is contingent to the specific situation the company finds itself in. It cannot be made into a cookbook recipe and followed for improved margins.

But if the focus is put on the customer, and value coproduction, social utility is increased, and this is something that will always find its respective willingness to pay, and profitability.

As much as we can describe the past, the future remains uncertain, and we believe that heartset is the answer to keep advancing in the unknown.

We hope heartset can keep guiding Ericsson forward in its quest for value creation.

9. LIMITATIONS

We have described our reasoning in our methodology. Our conceptual framework has been influenced by our empirical case, which it has influenced in turn. The main points of our analysis have nevertheless been quite consistent throughout our research project, and came to light quite early in our work. For this reason, we do not believe that additional information would have changed our core message. Nevertheless, some themes that are usually treated when it comes to servitization, were not mentioned in our interviews. We argue that this might be the case because Ericsson did not meet any challenges worth mentioning in these fields. But it might hold true that a larger number of interviews could have brought new themes to our eyes.

We have provided a grounded and supported analysis of profitability and servitization in Ericsson. There is of course an infinity of variables that play a role, and we cannot make sure, nor have we tried, to give a perfect and complete explanation of all studied phenomena. Based on findings in the interviews and rhetoric, we have provided an analysis that we believe has likelihood and realisticness. With time, new trends might be observed within Ericsson itself.

Finally, because of the confidentiality of Ericsson's business cases, not all details would have revealed. We have done our best to avoid confusion.

10. FURTHER RESEARCH

Our analysis has pointed in an unforeseen and unusual direction, regarding servitization. Quantitative studies have been conducted on the negative performance of certain servitizing companies. It would be interesting to inquire in detail in what caused these, examining the role of identity, confusion, and dilution of focus in doing business and selecting projects. We believe that these problems Ericsson encountered are not a coincidence, but can easily derive from the logic with which servitization is approached. For this reason, we expect the themes to be recurrent in servitizing companies' cases, and call for further research to verify our assumptions.

Focusing on this specific case company allowed us to reveal and understand its details, but we do recognize that certain assumptions might not apply to other sectors. We imagine that the importance of the product, and project selection, for instance, varies across industries, but further research is needed.

Finally, future research will help understanding not only if the issues we have discussed are prevalent in other servitizing companies, in other business sectors as well, but it will also show how companies manage these issues, and if they utilize the recommendations we have listed in this thesis.

References

- Araujo, L. & Spring, M. (2006) Products, services and the institutional structure of production. *Industrial Marketing Management*, 35(7), 797-805.
- Auramo, J. and Ala-Risku, T. (2005), Challenges for going downstream, *International Journal of Logistics: Research and Applications*, 8 (4), 333.
- Azarenko, A. R. Roy, E. Shehab, A. Tiwari. (2009). Technical product–service systems: some implications for the machine tool industry. *Journal of Manufacturing Technology Management*, 20 (5). 700-722
- Baines T.S, H Lightfoot, E Steve, A Neely, R Greenough, J Peppard, R Roy, E Shehab, A Braganza, A Tiwari, J Alcock, J Angus, M Bastl, A Cousens, P Irving, M Johnson, J Kingston, H Lockett, V Martinez, P Michele, D Tranfield, I Walton, and H Wilson (2007). State-of-the-art in product service-systems. *Proc. Institut. Mech. Eng. Part B J. Eng. Manuf.*, 221 (10) 1543-1552
- Baines T.S. , H.W. Lightfoot, O. Benedetti, J.M. Kay. (2009) The servitization of manufacturing: a review of literature and reflection on future challenges. *Journal of Manufacturing Technology Management* 20 (5) pp. 547-567
- Benedittini, O.; Neely, A.D. and Swink, M. (2015) Why Do Servitized Firms Fail. *International Journal of Operations and Production Management*, 35 (6), 946-97.
- Brax, S. (2005), A manufacturer becoming service provider – challenges and a paradox, *Manufacturing Service Quality*, 15 (2), 142-156.
- Bryman A. and E. Bell. (2011). Business Research Methods, 3rd edition. *Oxford, UK* : Oxford University Press
- Ceci, Federica and Masini, Andrea, Balancing Specialized and Generic Capabilities in the Provision of Integrated Solutions. *Industrial and Corporate Change* (2011) 20(1): 91-131
- Cialdini, R. (1984). Influence. The Psychology of Persuasion. *New York, NY*: William Morrow Company.
- Coccia M. (2018). An introduction to the methods of inquiry in social sciences, *Journal of Social and Administrative Sciences*, 5(2), 116-126.
- Cooper, Donald and Pamela Schindler (2014). Business Research Methods, 12th edition. McGraw-Hill.
- Correa, H.L., Ellram, L.M., Scavarda, A.J. and Cooper, M.C. (2007), “An operations management view of the service and goods mix”, *International Journal of Operations & Production Management*, 27(5), 444-463.

Coyne, K. (1989), "Beyond service fads – meaningful strategies for the real world", *Sloan Management Review*, 30 (4), 69-76.

Creswell, John W. (2014): Research Design. Qualitative, Quantitative and Mixed Methods Approaches. Fourth ed. Lincoln: Sage Publications.

Dasselaar M, (2014). *Service transformation – creating a service innovation in a business relationship*, Ericsson. Lecture at Karlstad University, Sweden.

Dubois A. and L-E Gadde (2002). Systematic combining: an abductive approach to case research. *Journal of Business Research*. 55(7). 553-560.

Easton G. Case research as a methodology for industrial networks: a realist apologia. *Proceedings from the 11th IMP Conference, Manchester*. Manchester: Manchester Federal School of Business and Management, 1995. pp. 368–91.

Elfvig S. W., Mattias Lindahl, Erik Sundin (2014). Ericsson – The History from Product to Solution Provider and Challenges and Opportunities in an Evolving Environment. *7th Industrial Product-Service Systems Conference - PSS, industry transformation for sustainability and business*.

Ericsson (2018). *This is 5G*. White Paper. Stockholm, Sweden.

Ericsson (2019). Ericsson Mobility Report: 5G subscriptions to top 2.6 billion by end of 2025. Website. Retrieved from URL. <https://www.ericsson.com/en/press-releases/2019/11/ericsson-mobility-report-5g-subscriptions-to-top-2.6-billion-by-end-of-2025>

Fabre, S. (2016) in Shanley, Mia and Helena Soderpalm: Ericsson crisis deepens as profits plunge 94 percent. Reuters. Retrieved from URL. <https://de.reuters.com/article/us-ericsson-results/ericsson-crisis-deepens-as-profits-plunge-94-percent-idUSKCN12C0PL>

Finne, M., Brax, S., Holmström, J., 2013. Reversed servitization paths: A case analysis of two manufacturers. *Service Business: An International Journal*, 7 (4), 513-537.

Frambach, R., Wels-Lips, I. and Gundlach, A. (1997), Proactive product service strategies – an application in the European health market, *Industrial Marketing Management*, 26, 341-352.

Gebauer, H., Fleisch, E. and Friedli, T. (2004), Overcoming the service paradox in manufacturing companies", *European Management Journal*, 23(1), 14-26.

Gebauer, H., Friedli, T. (2005), Behavioural implications of the transition process from products to services", *Journal of Business & Industrial Marketing*, 20(2), 70-80.

Gebauer, H., Thomas Friedli and Elgar Fleisch (2006). Success factors for achieving high service revenues in manufacturing companies. *Benchmarking: An International Journal* 13(3), 374-386.

Gebauer, H. and Fleisch, E. (2007), An investigation of the relationship between behavioural processes, motivation, investments in the service business and service revenue, *Industrial Marketing Management*, 36, 337-348.

Gebauer, H., Ren, G.J., Valtakoski, A. and Renoso, J. (2012), "Service-driven manufacturing: Provision, evolution and impact of services in industrial firms, *Journal of Service Management*, 23 (1), 120-136.

Geum, Y., Lee, S., Kang, D., Park, Y. 2011. Technology roadmapping for technology-based product–service integration: a case study. *Journal of Engineering Technology Management* 28, 128–146.

Goedkoop, M., C. van Halen, H. te Riele, P. Rommens (1999). *Product Service Systems, Ecological and Economic Basics*.

Green, M.H., Davies, P. and Ng, I.C. (2017), Two strands of servitization: a thematic analysis of traditional and customer co-created servitization and future research directions, *International Journal of Production Economics*, 192, 40-53.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (p. 105–117). Sage Publications, Inc.

Holmlund M, C Kowalkowski, and S. Biggeman (2016). Organizational Behavior in Innovation, Marketing, and Purchasing in Business Service Contexts—An Agenda for Academic Inquiry. *Journal of Business Research* 69(7).

Jovanovic, M, M Engwall & A. Jerbrant (2016) Matching Service Offerings and Product Operations: A Key to Servitization Success, *Research-Technology Management*, 59:3, 29-36.

Ketokivi M. and T. Y. Choi (2014). Renaissance of Case Research as a Scientific Method. *Journal of Operations Management* 32(5).

Kowalkowski, C. Gebauer, H. Kamp, B., and Parry G. 2017. Servitization and deservitization: Overview, concepts, and definitions. *Industrial Marketing Management*, 60, 4-10.

Lienert, Antje, Thomas Süße, Uta Wilkens, Nina Washington, Sofi W. Elfving (2019). Perceived cultural enablers and inhibitors of the organizational transformation towards PSS. *11th CIRP Conference on Industrial Product-Service Systems*.

Lincoln, Y.S. & Guba, E.G. 1985, Naturalistic inquiry (Vol. 75), *Beverly Hills, CA: Sage*.

Löfberg, N., Witell, L., Gustafsson, A. (2015) Service manoeuvres to overcome challenges of servitisation in a value network. *Production planning & control*, 26(14-15): 1188-1197

Malleret, V. (2006), Value creation through service offers, *European Management Journal*, 24 (1), 106-116.

Madsbjerg, C., & Rasmussen, M. B. (2014). *The Moment of Clarity : Using the Human Sciences to Solve Your Hardest Business Problems*. Boston, Massachusetts: Harvard Business Review Press, 2014. APA:

Martinez, V. M Bastl, J Kingston, and S Evans (2010). Challenges in transforming manufacturing organisations into product-service providers. *Journal of Manufacturing Technology Management* 21(4):449-469.

Mathe, H. and Shapiro, R. (1993), *Integrating Service Strategy in the Manufacturing Company*, Chapman & Hall, London.

Miller, Danny & Hope, Quentin & Eisenstat, Russell & Foote, Nathaniel & Galbraith, Jay, (2002). The problem of solutions: Balancing clients and capabilities, *Business Horizons*, Elsevier, 45(2), 3-12.

Min, L. J., Wang and Q. Luo (2015). Does the Servitization Strategy Improve the Performance of Manufacturing Enterprises in China? *American Journal of Industrial and Business Management* 05(05):281-287

Mont, O., C. Dalhammar, N. Jacobsson. A new business model for baby prams based on leasing and product remanufacturing. *Journal of Cleaner Production*, 14 (17) 1509-1518.

Nag R., K. G. Corley, and D. A. Gioia (2007). The Intersection of Organizational Identity, Knowledge, and Practice: Attempting Strategic Change via Knowledge Grafting. *The Academy of Management Journal* 50(4):821-847.

Neely, A.D. (2009) Exploring the Financial Consequences of the Servitization of Manufacturing, *Operations Management Research*, 2, 1, 103-118.

Neely, A.D. (2013) What is Servitization. Blog Post. Retrieved from URL.
<http://andyneely.blogspot.com/2013/11/what-is-servitization.html>

Oliva, R. and Kallenberg, R. (2003), Managing the transition from products to services, *International Journal of Service Industry Management*, 14 (2), 160-172.

Parida V., D. R. Sjödin, J. Wincent & M. Kohtamäki (2014) Mastering the Transition to Product-Service Provision: Insights into Business Models, Learning Activities, and Capabilities, *Research-Technology Management*, 57(3), 44-52.

Peirce, C.S., 1992 and 1999. *The Essential Peirce* (two volumes edited by the Peirce edition project), Bloomington: Indiana University Press, 1992–1999.

Rabetino, Rodrigo, Willem Harmsen, Marko Kohtamäki, Jukka Sihvonen, (2018) "Structuring servitization-related research", *International Journal of Operations & Production Management*.

Raddats, Chris, Christian Kowalkowski, Ornella Benedettini, Jamie Burton, Heiko Gebauer (2019). Servitization: A contemporary thematic review of four major research streams. *Industrial Marketing Management*.

Ramírez, Rafael (1999). Value Co-Production: Intellectual Origins and Implications for Practice and Research. *Strategic Management Journal*, 20(1), 49-65

Reim W., Parida V., and Ortqvist D. (2015). Product–Service Systems (PSS) business models and tactics – a systematic literature review. *Journal of Cleaner Production*. 97, 61-75.

Reinartz, W. and W. Ulaga (2008), How to Sell Services Profitably, *Harvard Business Review*, 86 (5), 90-98.

Simons, R. Levers of Control (1995) How Managers Use Innovative Control Systems to Drive Strategic Renewal. *Boston, MA*: Harvard Business School Press.

Slack, N. (2005), Operations strategy: will it ever realise its potential, *Gestao & Producao*, 12 (3), 323-332.

Smith, L R. Maull, I.C.L. Ng (2014). Servitization and operations management: a service dominant-logic approach. *Int. J. Oper. Prod. Manag.*, 34 (2) 242-269.

Suarez, F. F., Cusumano, M. A., & Kahl, S. J. (2013). Services and the business models of product firms: An empirical analysis of the software industry. *Management Science*, 59(2), 420-435.

The Local (2018). Ericsson turns first net profit in more than two years. Retrieved from URL. <https://www.thelocal.se/20181018/ericsson-turns-first-net-profit-in-more-than-two-years>

Tukker. A. (2004) Eight types of product–service system: eight ways to sustainability? Experiences from SusProNet. *Bus. Strategy Environ.*, 13 (4). 246-260

Trento L. (2018). Why deservitization occurs and how to avoid it? Lessons from a failure. Retrieved from URL. <https://www.linkedin.com/pulse/why-deservitization-occurs-how-avoid-lessons-from-failure-luiz-trento/>

Valtakoski A. (2017) Explaining servitization failure and deservitization: A knowledge-based perspective. *Industrial Marketing Management*, 60, 138-150.

Vandermerwe, S., Rada, J. 1988. Servitization of business: adding value by adding services. *European Management Journal* 6(4), 314-324.

Vargo S.L, and Lusch, R(2004). Evolving to a New Dominant Logic. *Journal of Marketing* 68(1):1-17.

Vargo S. L., Paul P. Maglio, Melissa Archpru Akaka (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal*. 26(3). 145-152.

Visnjic Kastalli, I., Van Looy, B. (2013). Servitization: disentangling the impact of service business model innovation on manufacturing firm performance. *Journal of Operations Management* 31(4), 169-180.

Ward, Y. and Graves, A. (2005), Through-life management: the provision of integrated customer solutions by aerospace manufacturers, working paper, University of Bath, Bath.

Weick, Karl E, (1969) *The Social Psychology of Organizing*. McGraw Hill.

Windahl,C, P Andersson, C. Berggren, and C. Nehler. Manufacturing firms and integrated solutions: characteristics and implications. *European Journal of innovation management* 7 (3), 218-228.

Wise, R., Baumgartner, P. (1999), Go downstream: the new profit imperative in manufacturing, *Harvard Business Review*, No. September/October, pp.133-141.

Yin, R.K. (2011), *Qualitative research from start to finish*, Guilford Publications.

Appendix

Appendix 1. Table of Interviewees Pre Study

Interviewee	Position	Date	Type
Interviewee 1	Director in IT	17th April	In person
Interviewee 2	Manager in Internet of Things	18th April	In person
Interviewee 3	Consultant	18th April	In person
Interviewee 4	Consultant	25th April	In person
Interviewee 5	Employee in IT	9th May	In person
Interviewee 6	VP in commercial area	15th May	In person
Interviewee 7	Director in IT	23rd May	In person
Interviewee 8	Employee in IT	23rd May	In person
Interviewee 9	VP in commercial area	24th May	In person
Interviewee 10	Employee in IT	28th June	In person

Main Study

Interviewee	Position	Date	Type
Interviewee 11	Manager in IT	31th May	Skype
Interviewee 12	Director in IT	10th June	Skype
Interviewee 5	Employee in IT	14th June	Follow-up in person
Interviewee 13	Manager in IT	19th June	Skype
Interviewee 13	Manager in IT	28th June	Follow-up in person
Interviewee 8	Employee in IT	17th June	In person
Interviewee 14	Director in IT	18th June	In person
Interviewee 15	Director in IT	18th June	In person
Interviewee 16	Director in IT	25th June	In person
Interviewee 3	Consultant	25th June	Follow-up in person

Appendix 2. Interview guides

Interview Guide (Pre Study)

1. Introduce myself and the main aim of the study
2. Let the interviewee introduce him/herself and their role, particularly the relationship he/she has with business model innovation at Ericsson
3. What do you see is the major changes brought by digitalization and servitization to Ericsson?
4. How do these changes affect the business model of Ericsson?
5. Could you name the main parts of the business models that are changed by digitalization and servitization?
6. How does the change happen (on the business model level or in the specific case of internet of things/smart manufacturing)?
7. What are some obstacles and barriers in this business model change process?
8. What are some ways stakeholders like you and your team manage these challenges?

Interview guide (Main Study)

1. Could you identify one project in which Ericsson started from a product/hardware offering, but now transformed to a product and service, or mainly service offering?
2. What was the major reason for the changes behind this particular project, was it mainly Ericsson's internal needs, or customer needs/general market conditions?
3. What are the major steps of change in this particular project?
4. What are some major critical events happened in this project?
5. How do these events relate to the company's business model? How was the business model changed in these steps/major critical events?
6. What particular challenges and difficulties did you and other stakeholder encountered in this change process within this project?
7. What are some measures you and other stakeholders implement to counter these challenges?
8. Some interviewees mentioned that Ericsson has become a product dominant place again and do you have any idea why that reversal happened?

Appendix 3. Ericsson's 5G deal coverage to date

First with 5G on four continents. Explore our live networks below

Select region:

- | | |
|---|---|
| <input checked="" type="checkbox"/> World total | <input type="checkbox"/> North America |
| <input type="checkbox"/> Latin America | <input type="checkbox"/> Western Europe |
| <input type="checkbox"/> Central & Eastern Europe | <input type="checkbox"/> Middle East & Africa |
| <input type="checkbox"/> North East Asia | <input type="checkbox"/> South East Asia, Oceania & India |

Service providers:

- | | |
|--|--|
| <ul style="list-style-type: none">• AT&T• Verizon• Etisalat• KT• T-Mobile• Ooredoo• Batelco• TIM• Vodafone Germany• Elisa• LG U+• Optus | <ul style="list-style-type: none">• Sprint• Swisscom• SK Telecom• Telstra• Vodafone UK• STC• Vodafone Spain• DiGi• Vodafone Ireland• O2 UK• Eir• Orange Romania |
|--|--|

78

Currently 78 commercial 5G agreements or contracts with unique operators

[Explore our commercial 5G contracts](#)

24

Live 5G networks

14

5G countries

