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**Service productisation as a customer-oriented solution
for enhancing service characteristics**

A case study in B2B technical wholesale sector

Master's thesis in
Marketing

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ABSTRACT

This thesis examines the theoretical background of service productisation and its application for overcoming the challenges related to the intangible nature of services. The objective of this thesis is to form a better theoretical understanding of service productisation and to examine the importance of customer-orientation as part of this process. The thesis reviews existing service marketing literature on productisation and combine these theories with the customer-oriented approaches of service-dominant logic. Based on this literature review, a theoretical framework for customer-oriented service productisation process is constructed. The theoretical part of this thesis is reinforced with an empirical study focusing on a case company operating in the technical wholesale business. The suggested framework is aimed towards clarifying the process of service productisation and the tasks and methods included in this process. The findings of this thesis suggest that service productisation is a customer-oriented development approach that can be used to addresses the operational and commercial challenges created by the abstract and intangible nature of services. This is done through a productisation process that focuses on the service offering, professional expertise and service processes. Furthermore, the service productisation process includes both internal organisation-related and external customer-related tasks. Thus, the role of the customer is highly essential for the successful productisation of a service.

KEYWORDS: Service productisation, Service-dominant logic, Service quality, Customer value, B2B services

1. INTRODUCTION

The service sector is growing, and this trend is not only relevant for organisations already working in the service sector, but also for traditionally product-centric and manufacturing-focused businesses. Correspondingly, services are becoming an important source of market differentiation for businesses that have traditionally relied on products as the core of their businesses (Raddats 2011; Kindström and Kowalkowski 2014). These companies are striving to increase their revenues and profitability through, for example, by increasing their market share and controlling a larger share of the product value chain (Sundin, Lindahl and Ijomah 2009). Competing through services for enhancing strategic competitive advantage is becoming a distinctive feature for innovative manufacturing businesses (Spring and Araujo 2009).

Consequently, the role of services as creators of customer value and competitive advantage has been recognised in many organisations as well as in the service marketing literature. As a result, services are being viewed as new opportunities for expanding current market share and differentiating the offering from competitors. Companies are shifting away from a purely product-centric business by either developing new services or integrating product-service systems (PSS) as part of their offering. This phenomenon is referred to as “service infusion in manufacturing” (Gustafsson et al. 2010; Kowalkowski et al. 2012) or as “servitization of manufacturing” (Baines et al. 2009; Lightfoot et al. 2013). These product-related service solutions can provide additional growth opportunities, and also offer better profit margins (Gebauer et al. 2008), thus providing new ways for competition.

Even though product-oriented companies acknowledge the importance of moving towards services and integrating services as part of their offering, many are still unable to exploit the full potential of this transition (Coreynen et al. 2018). As a result, only a limited number of companies achieve the desired financial success with their new service strategy, and under these circumstances, many of the services or product-service systems developed ultimately fail (Baveja et al. 2004; Eggert et al. 2014). Organisations are often unable to effectively deploy existing organisational resources to form services that are productive and consistent in both quality and operational processes. Reasons for these failures encountered in the service market are often caused by the inferior value offered to customers, lack of necessary facilities and resources to provide quality services or as a result of an uncoordinated service development process (Brentani and Ragot 1996). Most of these problems can be linked to the distinct characteristics related to the intangible

nature of services, which are not encountered by marketers of tangible goods (Jaakkola 2011).

It has also been recognized that product-centric companies frequently struggle with service innovation (Chirumalla, 2013; Ulaga and Reinartz, 2011), which can be seen as an essential function when developing these new services or product-service systems. A common problem associated with product-related service innovation is that new service innovations tend to be developed through a disorganised process (Gebauer et al. 2008). Failure to support proper integration and deployment of services and product-service systems can lead to several negative intra-organizational and customer interaction related problems such as low productivity, lack of common understanding and inconsistent service quality (Jaakkola 2011; Valminen and Toivonen 2012). Thus, the shift towards services or product-service systems is not an easy and straightforward task for organisations that have limited prior experience from the service business. Without the necessary organisational capabilities and resources, newly developed services solutions are not guaranteed to perform as originally intended and might not deliver the desired value.

In order for organisations to overcome the challenges and obstacles often encountered in developing and delivering services, a concept of service productisation has gained attention as a solution in both managerial and academic discussion (Harkonen et al. 2017). In essence, this concept is focused on systematising and defining a service offering, and it consists of methods that aim to highlight the product-like features of service (Jaakkola 2011; Harkonen et al. 2017). Service productisation, as the name suggests, is a concept that is used to alleviate the gap between intangible services and tangible products. Moreover, service productisation has been recognised as a solution for increasing the efficiency and manageability of services, reinforcing sales activities and for improving the overall service quality (Jaakkola 2011; Valminen and Toivonen 2012). This concept is suggested as a development method for intra-organizational processes and for customer-related tasks, which are approached with methods such as standardisation, systematisation, and concretisation (Jaakkola 2011). These methods are linked to the service offering, professional expertise and to the processes and methods of developing and delivering the service. For product-oriented companies, that are struggling to gain a foothold in the service business, this concept can offer a way to address some of the key issues faced when developing and delivering services.

Service productisation appears in both managerial discussions and academic papers, but despite this, it does not seem to have become a unified concept, and instead, the suggested contents and definitions vary (Härkönen et al. 2017). As a result, service productisation currently appears as an undefined concept that is described and applied differently by both managers and scholars alike. However, for organisations to fully utilise service productisation as a service development method and to gain the proposed benefits, a clear concept and a systematic framework are necessary. Moreover, the exact positioning of service productisation in the field of service literature and its role in relation to the service offering and relative processes is somewhat complicated (Härkönen et al. 2017). Regardless of the still undefined nature, service productisation presents itself as a noteworthy addition to service marketing theory and can prove to be a useful addition to service development. Its relevance as a development tool has already been researched in the context of professional services such as consulting and legal services (Jaakkola 2011; Valminen and Toivonen 2012), and it also appears in managerial and academic discussion related to services in a wider scope (Härkönen et al. 2015; 2017).

Services and products as objects of exchange have significant differences that mostly originate from the immaterial, complex and multifunctional nature of services and service activities (Brax 2005). Given the clear differences between tangible products and services, transitioning from a purely product-centred offering and adopting services as part of the offering is not necessarily a straightforward task. For instance, a traditionally product-oriented company must first build the necessary capabilities required to systematically understand where and when customers require added value from services (Bettencourt and Brown 2013). Therefore, the successful outcome of a service productisation process is not only affected by the overall performance of the intraorganizational processes, but it is also depended on the level of customer understanding within the organisation. The importance of customer orientation is already well acknowledged in contemporary marketing literature, and it has been argued that companies should understand their target customers to be able to create superior value for them (Narver and Slater 1990). This standpoint is further backed by the suggestion that customers realise the added value and quality of service and the results are always interpreted and perceived by them (Edvardsson and Olsson 1996).

The importance of customer value has been further increased, as it has become a fundamental building block for business-to-business (B2B) marketing over the last two decades (Anderson, Narus and Narayandas 2009). Consequently, the traditional product-oriented view of creating and delivering value has also been challenged by the service-

dominant logic of marketing (Vargo and Lusch 2004; 2008). Service-dominant logic provides a framework for clarifying the concept of service and its role in exchange and competition. According to service-dominant logic, value is always co-created when customers and providers engage in dialogue and interaction during design, production, delivery, and consumption of a service (Vargo and Lusch, 2004; 2008). Furthermore, the suggested value creation model for service differs greatly from the product value model. Services create their value during use, as opposed to products, that have their value embedded to them during manufacturing and this value is always realized to the customer during the exchange (Vargo and Lusch 2008; Grönroos, 2011). Service-dominant logic and its influences on service business can be regarded as important aspects to a successful service productisation process as customer value is often seen as the fundamental premise for competitive advantage and increased market share. Thus, the role of customers and the value creation process should be taken in close consideration during service productisation process.

The purpose of this thesis is to create a framework for customer-centric service productisation process by analysing the contents and activities of service productisation in existing managerial discussions, academic literature and with an empirical study. The empirical study is performed with a qualitative approach in a case company working in the B2B technical wholesale sector. The concept of service productisation will be approached with a customer-centric approach that draws from the theories introduced by the service-dominant logic. As a result, the suggested framework for service productisation will be constructed based on a two-fold approach with intra-organizational and external customer-focused processes. The framework is constructed by using existing academic research surrounding service productisation and combining this with suitable elements from other service literature streams.

In this study, service-dominant logic serves as the core theory explaining the importance of customer and provider interaction during the service productisation process and also explains the structure of value creation in services. This thesis suggests that product-centric services can be made more efficient with the use of a systematic service productisation process. Furthermore, it is also argued that service productisation can provide benefits in both the systematic development and in the efficient delivery of services. The proposed framework for customer-centric service productisation is suggested as the key enabler of increased service quality and customer value during service productisation.

1.1. Research questions

Despite the existing academic attention towards the concept of productisation, the academic discourse on it is scattered and applies variable terminology (e.g. Härkönen et al. 2017). Moreover, earlier academic discussion about productisation has been concentrated around knowledge-intensive business services (KIBS) such as consulting and software services. Thus, attention towards more product-centric services such as product-service systems (PSS) has been somewhat limited. Additionally, similar problems can be seen in the managerial discussions around productisation. As a result, the present theories and the proposed frameworks of service productisation are somewhat limited in their utilisation outside of software services and professional consulting services. Therefore, it can be recognized that there is a need for a more systematic framework explaining the productisation process from a B2B service standpoint with an emphasis on product-centric services such as PSS or service add-ons.

The terminology and proposed frameworks concerning the concept of service productisation are varied and require further clarification. To fill the void in the concept usage, **the first aim of this thesis is to clarify the concept of service productisation by providing a theoretical framework explaining the motives, contents, and benefits of productisation.** For this reason, the literature review of this thesis is intended to explain more clearly how different service marketing theories can be utilized in the creation of a systematic understanding of service productisation. This objective will be achieved through reviewing the existing service productisation literature and combining it with suitable elements from relevant service marketing theories. By doing so, this thesis will construct a theoretical framework defining the contents of service productisation by analysing the different theories and closely related concepts to the subject. Finally, a systematic framework explaining service productisation process will be constructed.

The second aim of this thesis is to provide practical information through an empirical study on service productisation and the specific processes it contains in the field of B2B services with a case study approach focusing on one company operating as a technical wholesaler in B2B sector. In addition to the processes connected to productisation, this study will include a reflection of the motives and benefits of service productisation by reviewing both the intra-organizational and customer-related actions. This twofold approach is necessary because of the process nature of services where the service provider can only present the value proposal, but the true value is left to the customer to evaluate. Moreover, the intangible nature of services

creates particular problems that can affect negatively to the overall service quality. Therefore, service quality and customer-centric approach to value creation are given particular emphasis on the literature review as these can be seen as essential contributors to the successful execution of a service productisation process.

The two objectives of this thesis related to clarification of concepts and empirical aspect of service productisation in the B2B sector will be reached through three research questions.

1. Why service productisation is necessary – what are the main motives pushing organisations towards service productisation?
2. How can a B2B service be productized – what are the key activities and processes?
3. How are customers integrated into the productisation process – how customer value creation and co-creational aspects of a service can be approached?

1.2. Case company

For confidentiality reasons, the company in question will be simply referred to as ‘case company’ in this thesis and the provided information regarding the case company and its business operations are discussed with necessary limitations.

The case company of this thesis is a technical wholesaler operating exclusively in the B2B sector. Case company’s business is focused on providing technical solutions and managing material flows to a wide selection of different B2B customer segments working in various sectors of industries. These customers range from small one-person firms to large national and international companies, all with their different specialised needs in heating, plumbing, air conditioning, cooling and electrical products and solutions. The case company is based in Finland and also operates in six other countries in the Nordics, Baltics and mainland Europe. In total, the case company employs close to 3300 employees and operates through well over a hundred store locations.

The technical wholesale practised by the case company is carried out through an extensive network of stores and a technical sales organisation that is divided into four distinct segments. The stores offer a wide selection of technical products and serve the daily needs of the customers with the help of professional store personnel and technical sales representatives. Sales are also carried out by the sales organisation that serves customers through various channels such as phone and email. These traditional sales channels are

also supplemented with digital channels such as EDI exchange and with an extensive online shop tailored to the needs of B2B customers. Furthermore, an extensive logistics network that operates from central warehouses supports the business operations and is key for succeeding in the wholesale business.

Technical wholesale is traditionally very product-centric industry as the main focus is in the product offering and technical solutions. However, services also have an important role in B2B wholesale. For example, logistics and different cutting and preassembly services already have had strong importance in the overall competitiveness among different technical wholesalers. Consequently, the case company has defined as its mission to provide the best products and solutions to its customers, thus being the best choice in the market among its competitors. Naturally, this mission towards providing the best products and solutions in the market requires new and unconventional actions from the company as it is necessary to be able to find ways to differentiate from the competitors.

1.3. Empirical views on technical wholesale business

In general, a wholesaler is a company that acts as an intermediary between product manufacturers and the business users of these distributed goods. The reason why manufacturers traditionally utilise wholesalers is that this business model can improve their operational efficiency. This is of course done under the assumption that wholesalers can perform certain tasks at a lower per-unit cost than the manufacturer could. Moreover, wholesalers help to reduce the number of contacts manufacturers would normally have to deal with to a more manageable number. By contacting a wholesaler, customers can reach a substantial array of products from a multitude of different manufacturers and suppliers. Depending on the size and type of business, wholesalers usually have several warehouses or a centralised distribution centre from where they ship products directly to retailers or the end-customers. Additionally, wholesalers can also have a network of stores that serve business-to-business customers locally.

There are many types of wholesalers, and this thesis is specifically centralised on technical wholesale business. This type of wholesale is solely focused on technical products and solutions such as electrical supplies, piping products and specialised tools and equipment. Technical wholesale is often restricted to business-to-business sales only and typical customers include large actors such as construction or manufacturing industry and the public sector as well as the retail sector. On a larger extent, key customers for

technical wholesale include the technology industry, especially machine shops and shipyards, the forest industry, such as the paper and pulp industry, as well as building, chemical and mining industries. However, within these different industries, the customer size can vary, and wholesalers usually have a large demographic of customers from one-person companies to large national or international corporations.

Technical wholesale consists of a wide assortment of different products and raw materials ranging from parts and components to machinery and tools. Many of the products sold by technical wholesalers can be regarded as necessities for modern buildings and infrastructure. Traditionally the bulk of the trade comes from heating, ventilation, air conditioning (HVAC), plumbing and electrical supplies which are in high demand in the building and manufacturing industry. Good examples of these products are different electrical cables, copper piping parts, valves and thermostats that are used in almost all modern buildings. Many of the sold products come from specialised manufacturers but technical wholesalers can also have their brands that are sourced from a dedicated supplier.

The reason behind the intermediary role of technical wholesalers between the specialised manufacturers of products and different industries is mostly because technical wholesalers can maintain the availability and quality of the necessary products for the industrial customers. Thus, technical wholesalers have a central role in sustaining and developing the competitiveness of the different industries they serve. Wholesalers keep a significant stock of products that can often be counted in tens of thousands of individual stock-keeping units. On top of these readily available products, wholesalers also provide a large number of products with cross-dock or direct factory delivery. Cross-docking is a standard logistical method where products from a manufacturer are distributed to a customer with marginal to no handling or storage time. Logistically this means that the products are received through an inbound dock and then transferred across the dock to the outbound dock where they are sent to the end customer. In addition to cross-dock deliveries, wholesalers also make use of direct factory deliveries where the shipment of goods is sent straight from the manufacturer to the customer and wholesaler's role is to handle the sales and billing. The combination of these three main logistical approaches enables wholesalers to achieve a substantial supply capability. In addition to logistical advantage, wholesalers can offer much better pricing options to their customers than smaller retailers, which is achieved through the large volume of trade conducted.

In addition to selling products, different solutions and professional services comprise an important part of the technical wholesale business. These additional solutions and services include logistics and an array of project services and product-related professional services. Typically, B2B technical wholesale is done by professional sales personnel who offer their professional knowledge for the customer. Technical sales personnel are responsible for providing the customer with a comprehensive solution that includes the right combination of products and solutions. For example, contractors in the building industry require certain logistical services for technical wholesalers so that they meet the requirements set by the construction site conditions and the project schedule. With their expertise, technical wholesalers can improve their customers' efficiency and production quality, which in turn contributes to the development of industrial competitiveness in the market. Therefore, technical wholesalers have a vital role between suppliers and customers working in different industries and sectors.

1.4. Structure of the thesis

This thesis is structured in eight main chapters starting from the introduction followed by the literature review and then proceeding to the methodology and finally into the results, findings and conclusions. The first chapter provides the introduction to this thesis with a description of the subject of this thesis, a summary of the research questions and an overview of the case company, and its business environment in general.

The introductory chapter is then followed by the literature review that is composed of four main chapters. The literature review starts with an analysis of the operational management of services and service quality. This analysis is aimed towards providing background on organisational performance and value creation in relation to service business. The third chapter of the literature review is focused on the concept of service productisation, and in this chapter, the theories and concepts that are discussed in existing service marketing literature are reviewed. The fourth chapter expands the theory towards customer-centric principles and analyses the possible links between service productisation and customer orientation. The fifth chapter in the literature review introduces the theoretical framework for customer-oriented service productisation process. This chapter also gives more practical insight by going over the suggested methods that are included in the service productisation process.

After the literature review part, the sixth chapter of this thesis introduces the research methods that are used in the empirical study and the research data. The chapter starts by

presenting the case study approach and continues to the actual transcribed research data. The results and findings are then presented in the seventh chapter, which is divided according to the research questions.

Finally, the eighth chapter concludes this thesis by giving a research summary, which discusses the theoretical conclusions and managerial implications of the research findings. The research summary is based on both the theories discussed in the literature review as well as to the empirical study. In this final chapter, the limitations of the study and the suggestions for further research are also presented.

2. OPERATIONAL MANAGEMENT AND SERVICE QUALITY

In the current global business environment, service businesses are commonly pursuing towards providing excellent services, which meet both the customer needs and strategic objectives of the organisation, through careful design and delivery of the service process. Additionally, also manufacturing companies and product-centric firms are moving in the direction of providing services, and from a commercial point of view, the traditional product-based business model is less applicable for this new area of business (Coreynen et al. 2018). Simply put, the production process for services differs from the manufacturing-based production process of products, and it also involves both organisational and customer resources and inputs within this process (Andrews 2014). Moreover, customer satisfaction is related to service productivity, which is closely related to a company's service-related performance (Dongjun et al. 2018). Thus, companies that have adopted a service business approach should also adjust their productivity model (Grönroos and Ojasalo 2015). Additionally, service companies should strive to reinforce their relationship with their customers as well as improve quality and productivity in the process of providing their services (Dongjun et al. 2018). All these factors can be controlled with operational management of services and by focusing on service quality.

Services are provided to the customer through service production processes, which are not solely related to the customer and customer experience but also to the internal organisational tasks, stakeholders and other resources needed in the production and delivery of the service. Thus, service processes can be quite complex, involving many interrelated processes, departments, people, decisions and activities (Johnston et al. 2012, pp. 194). This complexity can transfer to the operational management and delivery of services and also to the total service quality making it more difficult for a company to perform as desired. Additionally, the second central challenge mentioned in service research is the service productivity dilemma (e.g. Grönroos 2015, p. 236) which is caused by the unbalance of revenues and costs associated to the service. Service companies can often produce the service with the use of excess resources at an unnecessarily high cost, which of course is not the optimal solution. Therefore, it can be recognized that the operational management of services and service quality have an important role in the service business. By perfecting the operational management of services and by delivering and sustaining adequate service quality, a company is more likely to succeed in the service business. This is even more relevant to those businesses that are venturing from purely product-centric business towards services.

2.1. Operational management of services

Operational management of services, or in other words service operations management, covers the all the activities, decisions and responsibilities that are related in the management of services within an organisation (Johnston et al. 2012 pp. 12–13). Operational management is, therefore, a very central part of the service business and a necessary activity for the service provider. Operational management of services is aimed towards providing services and value to customers and ensuring that these services will perform as planned, and deliver the right experiences and the desired outcomes (Johnston et al. 2012 pp. 12–13). Through service operations, a company can provide better services for their customers, improve internal processes and make service processes better for the staff and also for the whole organisation (Johnston et al. 2012 pp. 15–16). Thus, a company needs to have the necessary service operations capabilities that are very much the result of successful operational capabilities of services.

Success in service operations management is not a straightforward task as services are often composed of many components, such as a series of interlinked processes, which creates a system of many controllable variables. Furthermore, services can be viewed as a complicated and relatively abstract phenomenon that can have many meanings. These meanings can vary from personal services to ‘service as a product’ or part of an offering. Whereas manufactured goods or products are often accepted as much more clear and apparent as they are essentially concrete objects with measurable features. Moreover, a service is an activity with a set of different steps and processes that involve both the service provider and the customer, and thus is not entirely controlled by the company. When defined as such multi-step processes involving different resources and stakeholders, services are much more than the point of staff-customer interaction - the service encounter. This multi-step process can often span months or even years as services can be provided for the customer as continuous value-creating processes. For a company to successfully fulfil the needs of its customers with satisfaction and profitably through services, the services must be produced efficiently and productively.

Service productivity is a significant factor in the service business as it determines the organisation's capability and significantly contributes to its overall success in the service business. According to Gröndroos and Ojasalo (2015), service productivity is a function of management decisions that influence on internal efficiency or the cost level, external effectiveness or the perceived service quality and the service provider's capability to

generate revenues, and capacity efficiency or the utilisation of capacity. Together these functions constitute the entity that very much defines the potential within a service.

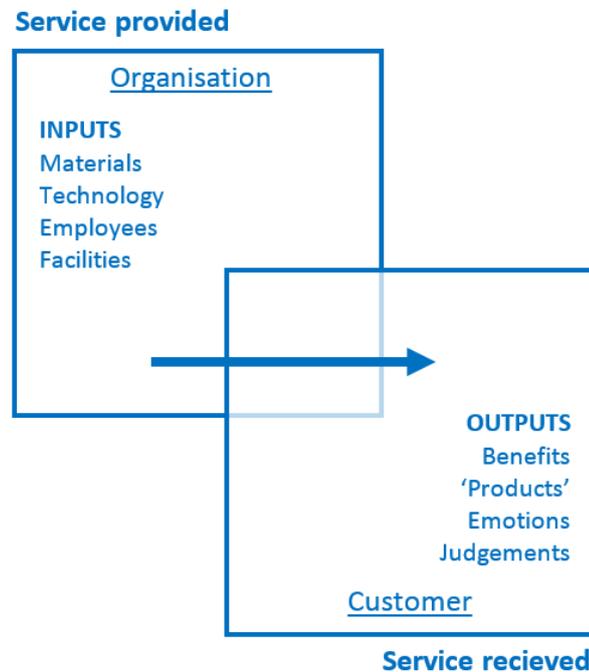


Figure 1 Illustration of the service provided and the service received. Modified from Johnston et al (2012).

Moreover, the operational management and service productivity in service organisations is much more complicated phenomena and much less a straightforward process than in traditional manufacturing (Grönroos and Ojasalo 2015). Therefore, services should be viewed with a broader approach that includes the internal operational perspective, and also the external customer's perspective. The operational management aspect is connected to the service that is going to be provided through a set of internal inputs inside an organisation. These inputs consist of all the different activities, resources and outputs that are needed in the process of providing the customer with the desired service. Thus, from an operational point of view, the service provided for the customer is the outcome of the service process and its outputs, which have been designed, created and enacted by the organisation using its many input resources (Johnston et al. 2012, pp. 7). However, the service provided can also include customer actions into this internal process when co-creation or co-production is applied to the service process. From the customer's perspective, the service provided is viewed as the service received, which is their overall experience of the provided service (Johnston et al. 2012, pp. 7). Thus, the service received

is the result of all the outcomes such as products, benefits, emotions, judgements and intentions the customer experiences during and after the service delivery.

These direct and personal interpretations and responses considering the outcomes of service are part of the customer experience that is central in the customer's perspective in service. This two-fold approach of service provided and service received illustrated in Figure 1, provides a basic understanding of the different aspects that influence the operational management and service quality.

2.2. Service quality

The quality of goods and products is most often related to the tangible and technical specifications and is relatively easy to determine and compare with other such products. However, as most services are a set of activities and provide with far less tangible outputs, the quality of service is perceived as a more complex concept (Grönroos 2015, pp. 93). Moreover, the complexity of the service business environment makes it harder to find the appropriate ways to measure and improve quality. However, the ability to measure the quality of service is necessary if a company is striving towards improvements in its service offering. When service providers are seeking to improve service quality, they must first define quality by understanding how their customers perceive it before any other decisions about quality can be made (Grönroos 2015, pp. 94). Thus, a service provider should seek to improve the overall quality of service by first understanding how the service is perceived and evaluated by the users.

Through the information about the perceptions of users of services, it will be possible for the service provider to identify the obstacles and the necessary ways of managing these customer evaluations and influencing them in the desired direction (Grönroos 2015, pp 94). This same approach is also identified by Neu and Brown (2005), who argued that a market and customer-oriented approach is one of the key factors in forming high-performing B2B services. Through market and customer-centric orientation, a service provider is more capable of identifying and understanding the often complex needs of the target market.

One way of viewing and analysing service quality is through the use of service quality dimensions. According to the service quality dimensions (Grönroos 2015), the quality of service perceived by the customer has two dimensions: a technical outcome-related dimension and a functional process-related dimension. The technical outcome-related dimension is related to what the customers receive during their interactions with a service provider, and this is often understood as the quality of service. However, the technical quality of the outcome of the service production process, i.e. outcome quality does not solely determine the quality of service. Because of the nature of service, there are several interactions between the service provider and the customer that are not related to technical quality dimension. For the customer, it is also essential how the technical quality is delivered to them. The total quality that the customer perceives is also influenced by how they receive the service and how they experience the service encounter with the service provider. In conclusion, the overall perceived service quality is constructed through technical quality and functional quality illustrated in Figure 2.

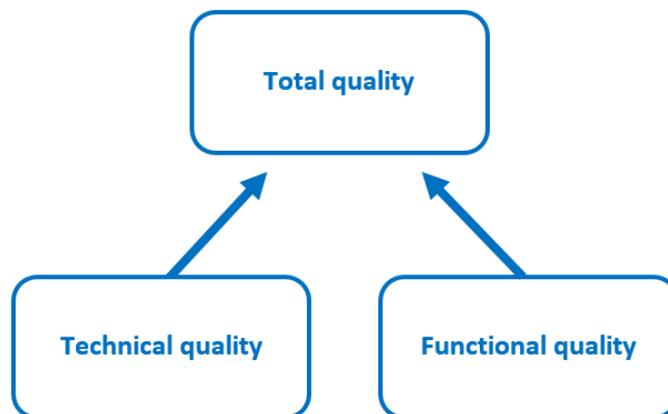


Figure 9 Service quality dimensions. Modified from Grönroos (2015).

Supporting a service offering that is simultaneously seeking for total service quality and organisational performance requires internal collaboration from the departments that are responsible for the execution of individual elements through service processes. These elements can include activities such as marketing, sales, delivery of the service and customer support. This whole internal chain of activities has to be efficiently co-ordinated and managed as a complete process (Grönroos 2015, pp. 9). Additionally, all service activities must be constructed and optimised according to the recognised and defined total

quality. This means that each organisational activity must be either linked to the technical quality or the functional quality of the service. Even though service processes are only a part of the overall service, their function is essential as they hold together the customers, staff equipment and materials (Johnston et al. 2012, pp. 194). Through this mechanism, a service provider can deliver quality services in an effective way that serves both the desires of a customer and the strategic objectives of the organisation. Carefully designed and developed services are operated and delivered effectively, thus providing excellent service quality in both technical and functional aspects.

3. SERVICE PRODUCTIZATION

The immaterial nature of services is commonly recognized as the main difference between products and services. Academic literature on service marketing and management traditionally define the differences between services and products with inseparability, heterogeneity, intangibility and perishability (Edgett and Parkinson 1993; Zeithaml et al. 1985). However, Järvi (2016) points out that a clear separation between goods and services is not necessarily always valid as the on-going trend of servitization of manufacturing (Howells et al. 2004) and the advancing digitalization (Leminen et al. 2014) have both reduced the clear contrast between traditional goods and services. According to Järvi (2016), currently, most of the marketing scholars consider the essence of services to be constructed from activities, deeds or processes in which the role of the customer is emphasized as they are often seen both as the recipients and as the co-producers of the solution. Thus, it can be argued that defining the exact differences between products and services is becoming ever so difficult due to the developments currently reshaping service business. Moreover, much because of this complex nature of differences between goods and services, the transition from a purely product-centric offering towards a service-oriented business model is not a straightforward task.

It has already been recognized in service marketing literature that the high level of customisation and heterogenic qualities of services are a source of challenges often faced in the service business (Jaakkola 2011). These challenges are particularly common in the operational management (Verma 2000) and in communicating, promoting, and pricing the services (Clemes, Mollenkopf and Burn 2000). Similarly, the whole productivity concept that is developed from manufacturing firms cannot be applied to service context (Grönroos 2015, p. 235) which in turn further complicates this transition as these companies need to improve their existing capabilities. Therefore, managers and academics alike have been seeking ways to tackle these obstacles through various methods and theories that have been identified or discussed as service productisation. However, in order for companies to fully adopt and make use of such a concept, it must be first fully understood in its full extent. Consequently, this requires a systematic framework that explains the whole process and all the details that are necessary for successful service productisation process.

As recognised, organisations that work in the service business are faced with various challenges when it comes to the operational management, delivery and communication of their intended service offering. The challenges created by the distinctive characteristics

of services are often related to fluctuations in demand, quality control, inefficiency, growth, and unprofitability (Jaakkola, Orava & Varjonen 2009; p. 1). Services cannot be manufactured in volume and then stored in a warehouse. Instead, they are almost always produced and delivered for the customer based on a present need. Also, it has been recognized that several marketing implications not encountered by marketers of tangible goods arise from the distinctive characteristics related to services (e.g., Gummesson, 1991; Shostack, 1977; Zeithaml, Parasuraman and Berry 1985). Communicating the concrete benefits of an intangible object of exchange to the customer requires a different approach than when dealing with manufactured products. These problems can be even more evident when discussed in the context of services with a high degree of customisation and heterogeneity. As customers set different requirements for the required service based on their distinctive needs, it makes it difficult for the service provider to be able to create an easy ‘one-fits-all’ service solution that could be easily replicated and provided.

Service productisation is aimed towards improving the performance of a service, and all the possible obstacles and challenges associated with service business demonstrates some of the reasons why managers and academics are involved in this concept. As the name of the concept suggests, service productization addresses these problems partly by alleviating the intangible gap between products and services. Harkonen, Tolonen and Haapasalo (2017) summarise the basic idea of productisation as strengthening and highlighting the product nature of a service. The ways of highlighting the product nature of a service are focused on the areas of service that are hard to communicate or demonstrate because of the traditionally intangible and abstract properties. Therefore, the extent of service productisation very much spans the entire service as productisation activities can be related to the internal and external service processes, marketing and communication activities, and pricing (Happasalo et al. 2017).

Service offerings are often challenging both in the managerial and marketing perspective, and this is highlighted especially in operational management and communication, promoting and pricing of the service (Jaakkola 2011). For organisations to develop and deliver the desired services, they must be able to overcome these challenges. Consequently, service productisation is often considered as a viable way to address these problems and increase competitiveness and total service quality. The objective of many organisations often is to either renew or develop their service business model by maximising customer value through increased quality and productivity. Thus, improving the overall profitability of the company and increasing customer satisfaction. Therefore,

service productisation has to address these two dimensions and focus on both the organisational performance as well as to the customer interaction aspects of a service.

As a concept, service productisation is relatively new in the field of service marketing theory (e.g. Järvi 2016; Valminen and Toivonen 2012). However the underlying motives of this concept can be traced back in earlier service marketing literature. At its present form, service productisation does not have a clear generally accepted definition among academics or managers alike. Instead, there are various definitions in both managerial and academic texts and publications (Härkönen et al. 2015). For example, according to a definition by Jaakkola (2011), the managerial aims of productisation are focused towards increased efficiency and effectiveness of service operations, simplified customer interaction, and improved marketability of services. Additionally, Härkönen et al. (2015) summarise service productisation as the process of analysing a need, defining and combining suitable elements, tangible and intangible, into a product-like object, which is then standardised into a more easily repeatable and comprehensible form.

Despite the still indefinite state of service productisation, it can be concluded that as a concept, it is heavily focused on diminishing the problems related to the intangible and abstract nature of services. It is also essential to recognise that service productisation is related to both internal and external activities such as operational management, delivery and communication. The overall goal of a productisation process lies in the creation of a standardised, repeatable and comprehensible service. Service companies strive for efficiency, improved profitability, and competitiveness through service productisation (Lehtinen et al. 2015). However, when it comes to the actual concept and its application to addressing the recognised challenges, there seems to be a lack of an appropriate framework that organisations could effectively employ as a development tool. Therefore, in its current state, service production activities can be challenging to use and implement within an organisation.

3.1. Service productisation in marketing literature

As a sub-discipline of marketing literature, the origins of service marketing go back to mid-late-20th-century (Baron, Warnaby and Hunter-Jones 2014). When first introduced, service marketing was overshadowed by other marketing streams that were more focused on tangible products. Service marketing was regarded simply as a modest extension of goods marketing because, at the time, the unique characteristics of services were not yet

distinguished (Fisk, Bitner and Brown 1993). However, later, when companies started to adopt more services as part of their existing business, the significance of services marketing started to increase. The specific problems faced by businesses in service industries back then influenced the further development of service literature, and the focus shifted towards problem-centred research (Fisk et al. 1993) that examined concepts such as service quality and customer satisfaction (Baron et al. 2014). Later, this discussion progressed towards organisational performance, customer experience and the incorporation of technology (Baron et al. 2014).

The underlying concept behind service productisation has, over time, followed the specific problems faced by companies trying to succeed in the service business. These exact problems have continuously changed as the service market has developed, but they are still closely connected to the overall goal of transforming different intangible components into more product-like, defined sets of deliverables (Harkonen et al. 2015). For example, Järvi (2016, p. 26) identifies three distinct phases in this academic debate related to the productisation of services. These phases are described as the industrialisation debate, the debate related to service models and systematic development processes and the debate related to concept development and process description. These three distinct phases provide a chronological order of the academic discussion that helped to form and develop productisation. By next going through the contents and background of the previous discussions and different phases of the productisation debate, it can be possible to get indications on the distinct characteristics, features and perceived benefits of productisation.

The earliest indications of academic discussion encouraging businesses towards any kind of service productisation activities can be identified from the theories of industrialisation of services, already presented by Levitt in 1976. The whole idea behind industrialisation of services was that service companies should apply the same kind of technocratic thinking to their activities, which was at the time very common or often taken for granted in traditional manufacturing. According to Levitt (1976), the majority of service-related problems arose from the very humanistic approach associated with services and the lack of concrete principles that nonetheless were still simultaneously self-evident in manufacturing. Service offerings were seen as heterogeneous and less organised than product offerings, where quality was easily determined from physical features. Thus, Levitt (1976) argued that companies operating in service-industry should view their service business similarity as manufacturing of products rather than as leftover tasks performed by individual workers. Accordingly, services should be approached with the

same detailed attention and desire for quality that manufacturing already did. Thus, careful planning, control, automation, quality control and regular review for improvement were seen as the solution. This first phase of productisation debate represents the approach in the early days of service marketing research in the 1970s and 1980s, when the issue of efficiency in services was highlighted (Järvi 2016). As we can see, the foundations of productisation are constructed around a very straightforward approach that promoted existing product-centric principles to be applied directly to services.

After the industrialisation debate, that focused on the efficiency of services, the discussion developed and naturally progressed to the next phase of the debate, around service models and systematic development processes. This next phase was inspired by the discussions under the emerging concept of new service development. New service development (NSD) focuses on improving service quality through the systematization of services. It examines the significance of a formal development process with clear pre-planned stages as an essential prerequisite for the development of successful services (e.g. Cooper and Edgett, 1996). During this phase, the discussion progressed from the use of product-centric principles towards a more service-focused approach and more attention was given towards the actual process of creating quality services from the ground up. Edvardsson and Olsson (1996) argued that it was essential for a service company to develop and provide services with the right quality and in a resource-effective manner to maintain their viability and profitability. According to their studies on NSD, service development must coordinate the development of the concept, process, and system where each aspect of service requires special treatment. This conclusion leads to a situation where services no longer were treated with the same principles than manufactured products, but instead, the need for a more service-oriented approach was recognised.

The third and the latest phase in the development of the academic discussion around service productisation focuses on concept development and process description (Järvi 2016). The members of this discussion see systematically developed service concepts as a central element between the organisation's business strategy and the successful delivery of its services (Järvi 2016) while other service marketing researchers have focused more on the service process alone. They have first and foremost pursued to solve the problems that emerge from the central role of customers such as the acquisition of relevant information of customer needs, and the decision to include or not to include customers in the actual service process. Service blueprinting (Shostack, 1982; Kingman-Brundage, 1995; Bitner et al., 2008) is one of the methods that can be used to visualise service processes and to clarify the roles and responsibilities as well as the interaction between

the customer and the service provider (Järvi 2016). Concepts such as value co-creation and co-production of value propositions also introduce new possible approaches to the discussion around productisation.

Over time, productisation has progressed along with the development of service marketing literature and these different phases have had a role in the evolution of productisation concept (Figure 3). The concept has its roots in the early days of service marketing when services were seen as less important and were thought as second to tangible goods which could also be seen in the lack of distinctive service-related solutions available. However, as the importance of service business began to increase the importance of services became more apparent for both managers and scholars alike. This shift also translated to the development of the service marketing discussion, as the attention moved from simple product-centric principles towards methods that were more tailored for services. The direct and limited approach of industrialisation of services was expanded by new development approaches such as NSD which were introduced during the second phase of the debate. Finally, this discussion was taken even further as concept development, and process description was recognised as important factors in a successful service business.

Additionally, the central role of customers was also highlighted and brought into the discussion, which further refined the distinctive service approach. When examining these different approaches and the level of discussion, the approaches of NSD, conceptualisation and blueprinting can be identified much nearer to productisation. One of the main reasons behind this is that the industrialisation of services lacked managerial advice for the development of services. According to Järvi (2016), new service development can be used as a theory explaining the core of productisation which then only needs to be further supplemented by providing an explanation to the activities in both the customer encounter and in the intra-organisational processes.

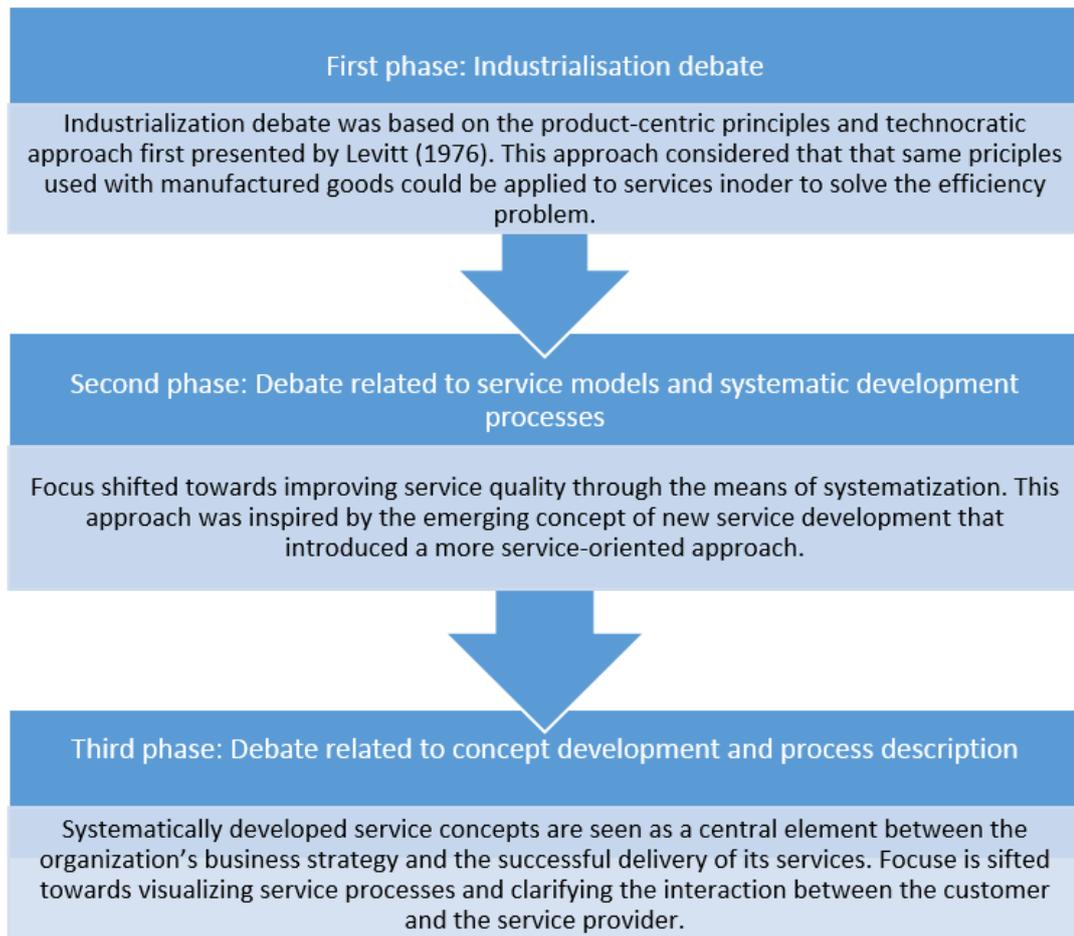


Figure 17 Summary of the different phases of the academic debate connected to service productization.

3.2. Theories and concepts related to service productisation

As noted earlier, one of the main challenges of service productisation results from the current incomplete concept in the scientific literature (Härkönen et al. 2015), which is further complicated by its challenging position among other closely related concepts within service marketing literature. Even though the overall goal of making services more product-like and increasing productivity seems simple enough, there are several different theories and concepts that have, in some extent, similar objectives (Jaakkola 2011; Järvi 2016). As a result, this combination can create some confusion when it comes to determining the contents and characteristics of service productisation. For example, the exact positioning of service productisation among other theories such as service development, service design, operations, service sales, and marketing is not entirely unambiguous (Harkonen, Tolonen and Haapasalo 2017). In addition to these related theories, several other concepts can be seen as partly overlapping or very closely related to service productisation such as standardisation and tangibilisation. Together, these different theories and concepts create a cluster of information that can make it somewhat challenging to be able to fully examine productisation in its own category.

The utilisation of service productisation theory is not straightforward since the overall theory and definitions are still not entirely definite. Thus, the combination of overlapping concepts and closely related theories can be identified as one of the reasons behind the lack of common understanding regarding productisation. Therefore, it is vital to be able to recognise these closely related or partly overlapping approaches and understand the limitations that help to distinguish service productisation from these as a separate concept. The purpose of this chapter is to map out all these relevant theories and concepts and then distinct them from service productisation by comparing the similarities and differences between them. Through this approach, it will be easier to create a better understanding of the exact position and relation of service productisation among these different streams of information and further clarifying the discussion around service productisation.

First of all, when it comes to service productisation, the attention is often focused on the term ‘productisation’ and its meaning in this exact context. As explained earlier, the basic idea of service productisation is to strengthen and highlight the product nature of service and to construct it into a standardised, repeatable and comprehensible form. However, this similar approach can be identified in other concepts in academic discussion, and for example, Järvi (2016) lists industrialisation, standardisation, commodification, tangibilisation, codification, and modularisation as such. These concepts are synonymous

to productisation, or they are focused on a particular phase in the development process or have a more restricted meaning as they only describe a specific stage in productisation or specific means to design the service offering. Moreover, simply the names of these concepts alone are already enough to create confusion as to the difference, for example, between commodification and productisation can be hard to define directly. Thus, it is possible to recognise already how easy it is to confuse productisation to other very close concepts, and therefore, there is a clear need for making the conceptual level of productisation more transparent and understandable.

Organisations that work in service business face challenges in the operational management, delivery and communication of their intended service offering and often the reason behind this is the abstract and intangible nature of service. Consequently, tackling these distinctive service characteristics is the objective of many managers and academics and productisation is often mentioned as the solution. However, systematisation is also a concept that, in some extent, focuses on solving the same problems, and it is brought up in similar situations as productisation. Systematisation focuses on systemising and standardising different processes and methods in the service processes (Jaakkola 2011). More precisely, the objective of systematisation is related to the efficiency and productivity aspects of the service.

Consequently, the whole concept of productisation also revolves around systematisation objectives. Järvi (2016) describes this as the ‘systematisation tendency’ where the attention is diverted towards systematisation activities. Additionally, this connection between productisation and systematisation is also recognized by Härkönen et al. (2017). They see this as a common characteristic linked to the anatomy of service productisation by many authors. However, considering from a productisation point of view systematisation is a very general concept that does not provide direct and concrete issues to be solved. Instead it offers a bigger context that should be taken into consideration as part of productisation activities. Despite these differences, it is sometimes used synonymously to productisation, but it is essential to understand that systematisation does not cover every action that is considered productisation. Therefore, we can classify systematisation as a concept that only covers a part of productisation but at the same time should be regarded as an important piece of this process.

Already present in the evolution of service productisation, the concept of industrialisation focuses on the original assumption that services can be developed in the same way as manufacturing, including personnel management, standard products, and price

competition based on efficiency and productivity increase (Sundbo, 2002). As a concept, industrialisation leans towards standardised services and in the kind of efficiency that is typical for manufacturing and includes a suggestion that services should be mass-produced. Therefore, industrialisation does not leave room for much customisation or co-production as it is very focused on creating efficiency and easy repeatability. Thus, this concept should be treated as minimal approach compared to productisation, which does have a customer focus that cannot be overlooked.

In addition to industrialisation, there is also the concept of standardisation, which also focuses on the productivity question. In short, standardisation aims to reduce variation within the service and thus to create efficiency in the production of services and decreasing related costs (Sundbo, 2002). Another benefit of standardised services is that they are more suitable for applying manufacturing principles and techniques than on heterogenic or customisable services (Weyers and Louw 2017). Therefore, standardisation also offers insight into the ways of mass-producing services. Similarities between standardisation and industrialisation exist as both of these concepts are focused on improving efficiency in the production of services. However, standardisation can also be used more broadly by referring to any systematisation (Järvi 2016) which offers a much usable concept in current literature.

One aspect that is often brought up in any productisation related discussion is the balance between standardisation and customisation that should be applied to a service. As standardisation and customisation are exclusive to each other, it can be challenging to be able to find the right balance between these two. Modularisation is a practice in which a system or a process can be divided into different parts called modules (Cabigiosu et al., 2015) which can be then combined into customised offerings (Carlborg and Kindström 2014). Therefore, modularisation in services gives the organisation the ability to combine standardised service modules and form customised services to meet particular customer needs with enough efficiency to make it profitable.

Modularisation is simultaneously related to standardisation of various processes but also linked to customisation as it can enable a certain degree of flexibility for individual customer needs (Bask et al., 2011). In conclusion, modularisation has the potential to enable cost-efficient operations of services and also the management of increased heterogeneity on the service delivery side (Pekkarinen and Ulkuniemi, 2008). Compared to productisation, modularisation is also a narrower approach, and it can be viewed as being one possible phase in the overall productisation process. More precisely,

modularisation focuses on the systematisation of the service content and the process, but again, the creation of organisational understanding and standard new practices to produce the service are left untouched (Järvi 2016).

The concept of commodification refers to the marketability requirements of service and to the objective of making the service offering more tangible and concrete in the eyes of the customer. This process consists of actions that help to highlight the attributes of service as a commercially valuable commodity (Järvi 2016) and create resemblances to tangible products that can be easily assessed and evaluated by the customer (Jaakkola 2011). There is also another concept that is very much similar to commodification and also seeks to relieve the problems related to the marketability of a service. This is referred to as tangibilisation, which is understood as concretising the image of the service company and also as adding tangible elements to the service offering.

Both commodification and tangibilisation can be seen as closely related to productisation as they are aimed at addressing the problems arising from the intangible nature of services. Commodification and tangibilisation are very focused on the customer interaction side of services as they aim to clarify and reinforce the message that is communicated towards the customers. However, productisation is a broader concept as it is not limited to only defining the service content into a more marketable form and communicating this to the customer. Instead, productisation takes into account the internal processes of the company as both commodification and tangibilisation are limited to processes linked to service delivery and communication.

The last of these productisation related concepts is codification which is aimed towards standardising and replicating knowledge, behaviours and skills across the organisation through strengthening collective organisational knowledge by distributing knowledge from individual employees to the whole organisation (Suddaby and Greenwood, 2001). In its purest form, codification can be carried out in an organisation by making manuals or databases, organising training courses and adopting standardised work techniques. Though a careful codification process, existing work tasks can be both systematised and made easier to delegate to other employees inside the organisation (Morris, 2001). As a concept, codification is closely related to productisation activities as both focus on recognising, documenting and sharing best practices and thus improving the service delivery process. However, codification is limited to only organisational actions, while productisation is a broader concept that also includes customer processes.

By going through all concepts that are in some way related to productisation, it is possible to distinguish them from each other but also gives a better understanding of how they are interlinked. Because when it comes to service productisation and more specifically in the concept of 'productisation' it is necessary to recognise the similarities it has with other related concepts that are shown in Figure 3. From this group of concepts, systematisation can be recognized as a general concept that covers these other concepts as some form of systematisation appears as a goal in many of these other discussed concepts. However, productisation can be regarded as the most comprehensive concept of these as it includes both organisational and customer-related activities, which together form a holistic development approach.

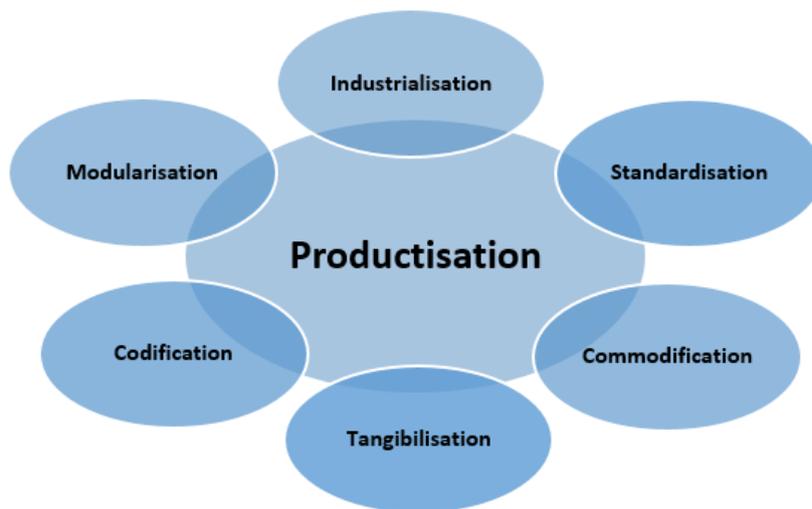


Figure 18 A representation of the different concepts related to productisation.

When comparing productisation to the related concepts illustrated in Figure 4, several differences can be recognised. For instance, productisation enables innovation and learning, and thus, it can be treated as a more neutral approach than the manufacturing-based concepts of industrialisation and standardisation. Furthermore, productisation is a concept that is both theoretical and practical and extends from within the organisation to the customer. Therefore, productisation can also be recognized as a broader interpretation compared to commodification, tangibilisation, codification or modularisation alone. In this thesis, productisation will be regarded as an independent function that employs these other concepts as part of the overall process.

In addition to the overlapping conceptual level of productisation, its theoretical frame is also scattered and draws from different theoretical sources. These theories include service marketing, new service development, service engineering, service innovation and service design. These different streams of knowledge discuss a specific area of service research that is also present in some form and extent in service productisation theory. Given the relatively indefinite and generalised level of discussion currently surrounding productisation, these research streams offer valuable information about the theoretical contents that make up productisation.

However, the exact positioning of service productisation among service development, service design, operations, service sales, and marketing is not completely clear in the academic discussion (Härkönen, Tolonen and Haapasalo 2017). This makes it difficult to understand the exact anatomy of service productisation. For example, in the previous literature service productisation has been discussed as a type of service innovation (Hempe et al., 2015; Valtaoja and Järvi, 2016), whereas productisation activities have been positioned between service development and commercialisation (Härkönen et al., 2015). Therefore, a recognisable connection between service productisation and the surrounding theories is necessary for a clear typology regarding the theoretical framework. This will be done by creating a straightforward review of the different theoretical streams of knowledge and their contribution to service productisation. As a result, key similarities can be acknowledged, and possible limitations to service productisation can be identified.

Service marketing is a distinct subfield of marketing discipline which is focused mainly on the study of services. Most of the theory that is applied to service productisation comes from this school of knowledge. Services marketing emerged in the 1970s when the early empirical investigations were focused on developing reliable and valid measures for service management (Baron, Warnaby and Hunter-Jones 2014). Since then, service marketing research and management have developed through several phases in a direction that recognises the interactive nature of services and examines the impact of technology and servitization. One of the predominant developments in service marketing research was the emergence of service-dominant logic that introduced a more customer-centric approach to be applied to services. This logic argued that the success of a service innovation mostly dependent on whether the developed service offerings truly captured and enhanced customers' value creation process (Vargo and Lusch 2008). Another critical

development introduced in service marketing literature was the use of service blueprints as a method to make the activities of both the provider and the customer visible during the service process (Bitner et al. 2008). This method offered a way to describe and systematise the service process, which is a central goal in service productisation.

In comparison to other process-oriented service design techniques and tools, service blueprints are customer-focused. Service blueprint allows a company to visualise the service processes, points of customer interaction, and the physical evidence associated with their services from a customer perspective. Moreover, this method helps to define and connect the necessary support processes inside the organisation that promote customer-focused service execution (Bitner et al. 2008). From a service productisation viewpoint, the main contribution of service marketing is the focus on customers through a dedicated dominant-logic and the methods aimed at mapping the customer journey.

Going further in the contents of service marketing, it is possible to recognise theories that have similarities to service productisation on a conceptual level. For example, a significant part of research focusing on the systematisation of services has been carried out within the **new service development** (NSD) framework. More precisely, this research has focused on the systematisation of the development process of services, while other research has concentrated on modelling the service to facilitate its systematic development (Valminen and Toivonen, 2012). NSD models are targeted towards the development of a new service or a substantially redesigned existing service (Järvi 2016). In short, the new service development process can be described as a set of interconnected tasks, activities, actions, and assessments that result in a new service and its launch (Cooper et al., 1994).

According to most NSD models, companies should carefully define the service concept and then follow these stages to put together what is needed to provide the service (Santos & Spring 2013). New service development models give a good understanding of the important focus areas and processes in service development. For example, the NSD model presented by Edvardsson (1997) explains that a service development process should create the prerequisites for the service: the service concept, the service process and the service system, which together form a working service entity and the prerequisites for the customer process and the customer outcome. While NSD models are generally aimed towards developing completely new services, this not necessary the case in service productisation process as it can be directed towards improving existing services.

In addition to new service development, **service engineering** is another approach towards designing and developing services found in service marketing literature. Compared to NSD models, service engineering assumes that services can be designed and developed by using similar intra-organisational approaches applied in the design of physical products (Järvi 2016). Service engineering is first and foremost a technical discipline of service development that focuses on the systematic development and design of services using suitable models, methods and tools with a technical-methodological approach where existing traditional product development engineering know-how is efficiently utilised in innovative service development (Bullinger, Fähnrich and Meiren 2003). This service development approach highlights intra-organisational development methods and is very technically oriented. Comparing it to service productisation, it supports some of the same aims but falls short when it comes to co-production with customers (Järvi 2016).

Earlier services were regarded as secondary to products from the viewpoint of innovation, but as the servitization of manufacturing and the role of technology have impacted service business (Baron et al. 2014), innovations have also become more critical in the service context (Toivonen and Tuominen 2009). Simply put, **service innovation** is an idea about a completely new or improved service that is commercialised and added to the current offering (Carlborg et al., 2014). The significance of service innovation is growing among product-centric companies because the adoption of services as part of the offering is seen as a way to improve customer relationships, capture larger shares of revenue, differentiate from the competition, increase revenue stability, and to better satisfy customer needs (Bettencourt and Brown 2013).

Service innovation is a process that can be planned, intentional, or unintentional (Gallouj and Savona, 2009) and it can happen through six different innovation types; radical innovation, improvement innovation, incremental innovation, ad-hoc innovation, recombination innovation, formalisation innovation (Gallouj and Weinstein 1997). From these innovation types, formalisation innovation is the closest equivalent to productisation as it attempts to make the output of an innovation less unclear, by focusing on designing new methods and technical solutions (Järvi 2016). This approach attempts to add tangible elements to the service, and this can be seen a unifying aspect between service innovation and service productisation.

In addition to the more traditional areas of service marketing, **service design** is a design practice and research area that has developed over the last two decades into a design-led approach to traditional service innovation (Meroni and Sangiorgi 2011). As an innovation

method, service design is closely related to experience-centred approaches (Yu and Sangiorgi 2018), and it can be seen as a useful approach for developing services that are particularly challenging because of their immaterial and abstract in nature (Miettinen 2017). Service design aims to create a customer or human-centred solutions that make the service experience feel logical, desired, competitive and unique for the user, simultaneously encouraging innovation and engagement in companies and institutions as part of developing and delivering services (Miettinen 2017). Service design provides design tools and methods to analyse and develop the service experience and offers a strategic and holistic approach to service innovation and service business (Polaine, Løvlie, and Reason 2013; Yu and Sangiorgi, 2018; Miettinen, 2017). The service design process can be described as connecting the use of different practical design and design research methods, design thinking and various visualisation techniques and linking this with the different stakeholders' views (Miettinen 2017). The whole process is about concretising abstract content into something that can be easily shared, understood, discussed and prototyped together (Miettinen 2017).

The service design concept has been developed by scholars in three primary contexts, as a subset of NSD processes infrastructure (Gummesson 1991; Johnson et al. 2000), as a set of collaborative and cross-disciplinary activities for service innovation (Fitzsimmons and Fitzsimmons 1999; Hill et al. 2002; Ostrom et al. 2010; Patrício et al. 2011) and as design-centred contributions to service innovation based on a human-centred perspective and creative methods (Mager 2008; Polaine, Løvlie, and Reason 2013; Wetter-Edman et al. 2014). According to Yu and Sangiorgi (2018), service design can improve the overall new service design process by orienting organisations and their practices to better support users' value creation. Moreover, service design can transform new service design for organisations to better support value-in-use, thus promoting a service-dominant logic perspective.

The views of service design are relevant from the viewpoint of service productisation, because of its contributions and potential integrations to service development in general. Service design is an increasingly popular method used for service innovation and service development that can also be an important contributor to service research in general. Service design tackles the challenges in service development with a holistic service innovation approach with a particular focus on understanding, mapping, and communicating customer experiences (Stigliani and Fayard 2010). This provides a service-dominant approach for a customer-centric new service development process.

Thus, a multidimensional connection between service design, NSD, service-dominant logic and service productisation can be recognised.



Figure 26 Summary of the different neighbouring theories of service productization found within current service marketing literature.

3.3. Defining service productisation

Despite the concept's appearance in both managerial and academic discussion, service productisation has an undefined status, which leaves much of its contents uncertain. This lack of a clear definition, combined with the somewhat unclear positioning among other concepts found in service marketing literature, creates one of the main challenges of service productisation. The discussion regarding service productisation in published academic articles seems to be somewhat limited and lacking in-depth, but also the used terminology is not precise (Harkonen et al. 2015). Service productisation is also referred to in managerial discussion (Jaakkola 2011), but without a proper definition, the broader utilisation of this concept could remain limited. Thus, before the principals of service productisation can be effectively utilised it needs to be clearly defined as a concept. This definition needs to provide enough clarity that the exact contents of service productisation can be distinguished from other service marketing concepts.

Additionally, the definition of service productisation should provide a summary of the key objectives included in productisation. By defining these aspects, service productisation could be understood better and adapted as a tool for improving service performance within organisations. In this chapter, a definition for productisation is constructed by drawing the fundamental characteristics of service productisation from the existing literature and combining these with the recognised key activities. Additionally, existing definitions are evaluated and used as a reference. Definition for service productisation will be constructed according to the theoretical approach of this thesis, and therefore, the focus will be on services with a customer-centric approach on productisation activities.

As services have the distinct quality of being abstract and intangible, it creates the premise for the need for service productisation. In the case of the service industry, the object of exchange is abstract and intangible, and so there is a clear distinction between selling services or tangible products. Therefore, the same principles and approaches that are used with tangible products cannot be so easily transferred or applied to services, and this often creates a situation where organisations must expand their skill set.

Consequently, managers and scholars suggest service productization as a solution to the challenges that are caused by the intangible characteristics of service. Thus, service productisation is seen as a way to overcome these challenges by creating and highlight product-like features in service and simultaneously introducing a certain level of

systematisation to the overall service process (Järvinen 2011; Järvi 2016). More precisely, productisation is a process of analysing a need and then defining and combining suitable elements, tangible and intangible, into a product-like object, which is then standardized into a repeatable and comprehensible form (Harkonen, et al. 2015). In short, service productisation activities cover all requirements for a service to be ready commercially, so that it can be produced, delivered, sold, communicated, purchased and used as desired. Given these definitions of the motives and actions, service productisation appears as a development method that focuses on different components of a service and is not restricted to a specific part. Service productisation takes a holistic approach that clarifies the service offering, creates repeatability and improves understanding of the service offering (Härkonen et al. 2015).

Given the comprehensive scope of service productisation, the discussion around it includes references to several different concepts that appear to have an important position in the overall process. Existing literature on service productisation discusses defining, specifying, describing and systematising services (Härkonen et al. 2017) with references to commodification and codification (Järvi 2016). Additionally, both standardisation and modularity are discussed in conjunction with productisation (Järvi 2016; Härkonen et al. 2017). However, further research on these concepts reveals that these individual concepts can be defined as more limited in scope compared to service productisation. Service productisation includes elements from these concepts as certain practices in the overall development process. For example, Jaakkola (2011) defines productisation by identifying three key practices in it: specifying and standardising the service offering, tangibilising and concretising the service offering and professional expertise, and systematising and standardising processes and methods. In addition to the different concepts mentioned, this definition is focused on three areas of service; the service offering, expertise, processes and methods, which indicates the extent of the methods used during service productisation. Moreover, the existing literature also refers to the content, packaging, and pricing of services concerning productisation, which indicates it as an activity that precedes sales (Harkonen et al. 2015) which places it between service development and commercialisation. Considering the similarities between service productisation and the objectives of new service development, service conceptualisation and blueprinting that all correspond to the same basic idea (Valminen and Toivonen 2012) service productisation has a strong development focus. For example, Järvi (2016) defines productisation as a service development approach that aims to create a common understanding and to produce the offering systematically through systematising and concretising both the service content and the service process.

The preliminary definition for service productisation is based on the extent of service productisation activities and around the different methods associated in each of the different focus areas. The first acknowledgement is the two-fold structure of service productisation concept, as it focuses on both the intra-organizational processes but also takes a customer-related approach by seeking to improve the commercial activities. Secondly, the definition highlights the extent of service productisation as a process that covers all the service prerequisites.

Based on these observations, the following definition is constructed:

Service productisation is a service development approach that addresses the operational and commercial challenges created by the abstract and intangible nature of services. This consists of a comprehensive development process that focuses on the service offering, professional expertise and service processes.

4. CUSTOMER ORIENTATION AS A PART OF SERVICE PRODUCTISATION

Compared to product-centric business models with a focus on selling tangible products, a service approach focuses on facilitating value creation for customers and co-creating value with them through intangible services (e.g. Lusch et al. 2007; Grönroos 2017). The central difference between these two areas of business is in the object of exchange, and the way value is created and delivered to the customer. Tangible products have value embedded them, and it is delivered to the customer during the exchange, but in the case of services the value creation process itself is more complicated due to the service characteristics that rely on value realising during use (Vargo and Lusch 2004). Therefore, as customers are the ones who ultimately evaluate the value of offered services, they should be regarded as a resource that influences the success of a service.

Moreover, customer orientation plays a vital role in service companies as they need the capability to capture customer information and integrate it into their service delivery process (Härkönen et al. 2017). Therefore, for a company to successfully employ service productisation to their service offering they must be able to gain required information from their customers and be able to comprehend how their customers gain value and how this value can be created. In conclusion, customer-orientation and understanding value and value creation in services can be regarded as essential components in service productisation, since it is both an intra-organizational and customer-focused development tool.

The ongoing shift from purely product-centric offerings towards the adoption of services as part of the offering has also been recognized in the academic literature. This phenomenon is discussed as a transfer between the different dominant logics (Skålén, Gummerus, von Koskull and Magnusson 2015). Businesses are moving away from a purely goods-dominant view, in which tangible output and individual transactions were central, and accepting a service-dominant view, in which intangibility, exchange processes, and relationships are central (Vargo and Lusch 2004; 2008). However, adopting a service-oriented business logic can be a challenge for traditionally product-centric businesses since the object of exchange and the composition of value are different. This shift in dominant logic can be seen as a reaction to the changes in the business environment, such as the on-going servitization of manufacturing that is transforming traditional product-centric business such as technical wholesale.

A company following a service-dominant business logic proactively searches for possibilities to understand and support their customers' value creation process (Grönroos and Ravald 2011). In order to employ this approach effectively, a more holistic understanding of the customers' business, processes, practices, and experience is necessary. Therefore, companies need to build their business based on in-depth insights into customers' activities and context, and they need to analyse what implications and improvements can be constructed from this information (Heinonen et al. 2010). Additionally, companies must be able to effectively collect customer information and implement value-adding elements to their offering based on the collected information. Furthermore, service innovations and value propositions should be evaluated from the perspective of the customers' value creation, the service that the customer experiences (Skålén et al. 2015). Thus, the importance of a customer-oriented approach can also be connected to service productisation, since this process includes elements from service development and innovation.

4.1. Value and value creation in service

Developing and maintaining a competitive advantage is difficult for companies in today's increasingly competitive and complex global business environment. As the demand for more customised products and services increase, individual firms and supply chains are looking for new and innovative ways to achieve competitive advantage (Yazdanparast, Manuj and Swartz 2010). Consequently, to increase and build sustainable competitive advantage, some companies are moving away from purely product-centric offerings and are adding services and solutions as part of their offerings (e.g. Coreynen et al. 2018; Adrodegar et. al. 2017) and strategic competition through service provision is becoming a distinctive feature of innovative traditionally product-centric companies (Spring and Araujo 2009). However, for a product-centric company with its main business in manufacturing or wholesale, it can be difficult to fully acknowledge a service business logic and effectively utilise the strategic benefit of adding services to the existing offering (Kindström and Kowalkowski 2009). The added services must simultaneously correspond to the customer needs and to the business objectives, which can be a complicated task to achieve.

Companies should innovate and develop services that are beneficial to the customer, and one critical success factor in this process is to be able to identify innovative ways of creating superior value through these provided services (Lusch, Vargo and O'Brien, 2007). As customer value can be regarded as the fundamental element in all areas of

business (Ulaga and Reinartz 2011; Lindgreen et al. 2012) understanding how it can be created, communicated and delivered to customers is an important factor when exploring means to gain competitive advantage in the market (Woodruff 1997; Landroquez et al. 2011). However, understanding and creating value in service business requires a different approach than in manufacturing. Services can be considered as bundles of different resources that together create novel solutions that are beneficial to certain actors in a given context (Lusch, Vargo and O'Brien 2007) and it is up to the company to formulate the right combination. Companies must be able to support their customers' everyday processes with offerings that are aimed to enable customers to reach their own goals in a way that is value-creating for them (Grönroos 2011).

For a traditionally product-oriented company with different business logic, adopting the service logic requires an understanding of the customers' logic and value creation context (Heinonen et al. 2010). Therefore, value and value creation in service are concepts that need to be fully understood before a company can engage further in service business and ultimately achieve success.

The first obstacle might not be how to create value, but instead on understanding the very basics of what value is. Value has a somewhat ambiguous definition and an elusive concept in service marketing and management literature (Grönroos and Voima 2013) and because of this, there are many different definitions available for value in academic marketing and service literature. For example, a simple definition by Grönroos (2011) of value explains it as making an actor, such as a customer, better off. In a B2B context, value is often defined as the trade-off between benefits and costs involved in an exchange (Ulaga and Eggert 2006). The benefits and costs are diverse and can be monetary, such as increased profits and cost savings, or non-monetary, such as increased trust and comfort, or decreased risk, time and energy invested (Grönroos 2011; Lindic and da Silva 2011). However, with a service perspective, the central phenomenon of value creation can be viewed in several ways.

According to Lusch and Nambisan (2015) 'value-added' describes the process of companies transforming matter to change its form, time, place, and possession. Consequently, all these transformations require costs, which are then portrayed as 'value-added' activities and sources of utility. However, services cannot be embedded with value, instead, the value in services takes place only when they are useful to the customer, and this always happens in a particular context (Lusch and Nambisan 2015). This approach to value is called 'value-in-use' and is an opposing view to 'value-in-exchange'

which is often connected to tangible products. The value-in-use approach defines that value is always co-created with and determined by the customer. Thus, it cannot be embedded in a manufacturing process (Vargo and Lusch 2004; Vargo and Lusch 2006). In service literature, value-in-use is considered as the central concept for value (Grönroos, 2011; Vargo and Lusch 2008) and currently, this concept is taking over the role of the production-related value-in-exchange concept (Grönroos 2017). However, value as value-in-use is not a straightforward concept, and it cannot be measured in one straightforward manner, simply because the value in this form can be perceived in so many different ways (Grönroos 2017).

One theoretical model for describing value creation and also the role of co-creation in service is the Grönroos-Voima value model (Grönroos and Voima 2013) illustrated in Figure 6. This model explains the process that leads to value for the customer and divides it into three value spheres; (1) provider sphere, (2) customer sphere and (3) joint sphere. All three spheres are connected to the value generation process, but the roles and goals of the provider and customer are different in each sphere. By understanding the actions and motives of the actors in each of these spheres, it is possible for the company to find ways to directly impact on real value for their customers. Furthermore, this model also gives insight on how the customer can be beneficially involved in the company's various processes, so that the company gets direct access to the customer's value creation and may then engage in value-creating processes.

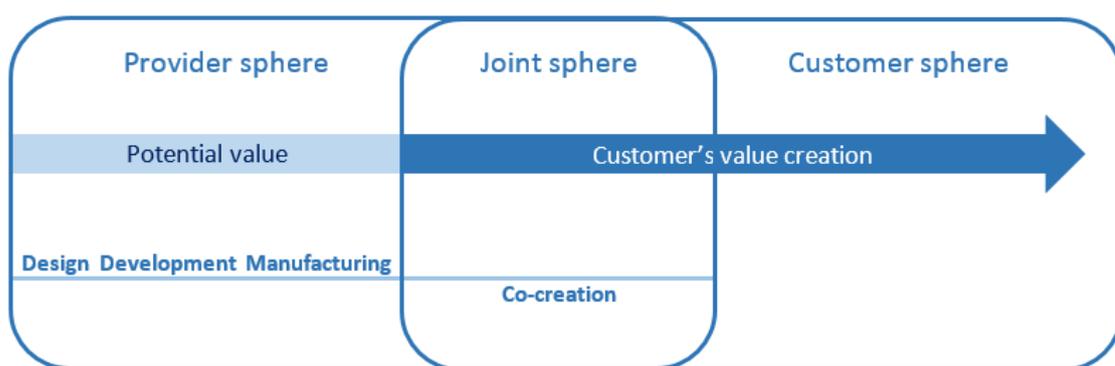


Figure 27 Grönroos-Voima Model (Grönroos and Voima 2013; Grönroos 2017)

In the provider sphere, a company generates potential value that can be later turned into real value by its customers. This first sphere is closed to the customer, and in this sphere, the company aims to facilitate the customer's value creation process by developing and

providing resources that create the potential to support value-in-use later in the value creation process. Because of the closed nature of the provider sphere, companies can only take preparatory actions to enable value creation. Furthermore, as the value in ‘value-in-use’ is only created by the customer, no absolute value is yet created in this sphere. Thus, by organising resources and developing service processes, a company can develop an offering with the potential to transform into real value later during the customer’s consumption and value-creating process. In short, the goal in this sphere is only to facilitate the value creation that takes place in the two other spheres.

The next sphere, the joint sphere, is open to direct interactions between the provider and customer serving as a platform for possible value co-creation. In this value sphere, the service provider can engage with the customer’s value-creating process during open interaction and co-create value with them. Customer interactions may influence the customer’s value creation process either positively or negatively, or there might be instances where no influence is achieved. However, for any value co-creation take place, there needs to be an agreement or mutual interest. If any co-creation fails to take place, the provider’s role continues as a facilitator for the customer’s value creation process, and they cannot further enhance their position. Active management of the value co-creation platform offered during the provider–customer interactions in this value sphere, the service provider can influence its customers’ perceptions of the company and its products and services, which has an impact on their customers’ willingness to repurchase and continue this collaboration (Grönroos and Voima 2013).

Finally, the value creation process advances to the customer sphere, where the final value realisation is based on the customer’s actions and experience. Consequently, the customer sphere is closed to the service provider, and in this sphere, the customer independently creates value. Thus, the service provider cannot directly influence the flow of the value process in this last value sphere. The customer’s motive in this sphere is to physically or mentally become or feel better off when using the resources acquired earlier from the service provider. The customer uses resources provided by the company and integrates them with other needed resources and during this process, real value evolves for the customer, and this is referred to as value creation (Grönroos 2017).

The Grönroos-Voima model explains value creation and co-creation as a process consisting of different value spheres giving a template for performing different value supporting actions. However, the value creation process can also be further supported by developing the capabilities for assessing and communicating value both within the organisation and towards the customers. Keränen and Jalkala (2014) propose that for companies to succeed in the provision of superior customer value, they need to adopt a strategic approach to customer value assessment. Customer value assessment consists from the combined efforts of a company to evaluate, measure and communicates the value created and co-created for customers (Payne and Frow 2005; Anderson and Narus 1998; Anderson et al. 2006). According to Keränen and Jalkala (2014) efficient customer value assessment in B2B markets consists from four key phases; (1) value potential identification, (2) baseline assessment, (3) long-term value realisation, and (4) systematic data management, illustrated in Figure 7.

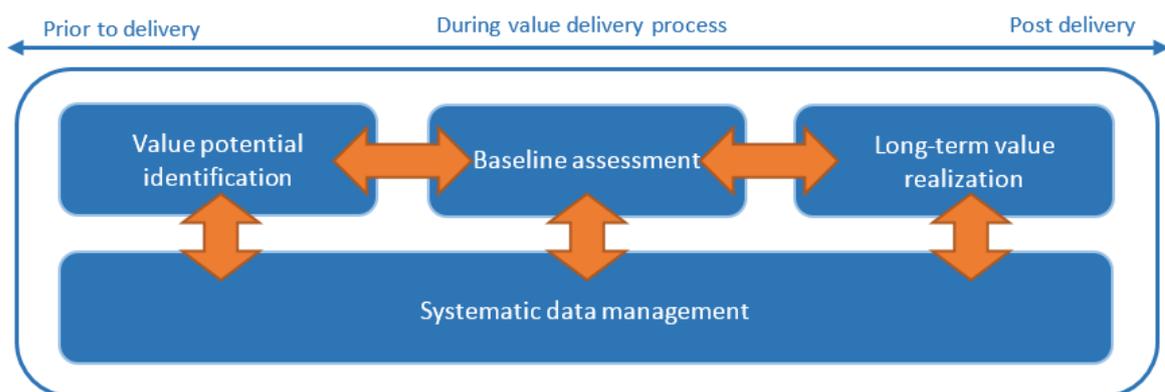


Figure 28 Customer value assessment (Keränen and Jalkala 2014)

Value potential identification consists of two areas, understanding customer's value creation logic and determining how to potentially add value to the customer's business through the suppliers offering. It is connected to the internal process of defining those customer needs composing the baseline for designing and developing an offering that will create value for the customer. Baseline assessment relates to the phases involved in integrating and deploying the provided offering to the customer's processes. The baseline assessment is the evaluation of a customers' current performance in selected business areas, and it is done before the delivery of the supplier's offering. Long-term value realisation is done in order to verify and document that the identified value potential has been realized after the offering has been delivered to the customer. It is connected to the post-delivery phase that can last from months to several years. Alongside these three phases is systematic data management that relates to all phases involved in the value

delivery process. It includes managing relevant customer data during the value potential identification, baseline assessment, and long-term value realisation. Customer value assessment provides insight on how to coordinate different functional units within a firm to ensure that the delivered value is truly realized by customers. (Keränen and Jalkala 2014)

In conclusion, for a company to succeed in service business, they must be able to interpret their customers and export and implement this information into their offering. This value capturing capability is also very depended on the level of understanding the company has about the value in services and how it is translated to the customer. Traditionally, customer value has been considered to relate to functions and performance gained from products as value-in-exchange, but this logic is not applicable to a service context. However, in a service context value for customers as ‘value-in-use’ is a more complicated concept and harder to evaluate with one single measure.

Consequently, recent service marketing literature is increasingly emphasising the fact that customer value emerges in customers’ value-generating processes as value-in-use (Grönroos 2011). From service marketing perspective, this is often connected to the shift from goods-dominant logic towards service-dominant logic (Vargo and Lusch 2004). The transition towards service-dominant logic is changing the way value creation should be perceived and evaluated. The most evident change is that the customer is always the value creator and service providers must realise that they can only facilitate their customers’ value creation (Grönroos 2017; Vargo and Lusch 2004; 2008).

Companies must compile resources and develop processes and offerings which have the potential to be transformed into real value for the customers in their processes. Companies must seek ways to influence customers’ value creation process and create opportunities to co-create value with them. Moreover, long-term success is based on accurate customer insight and strategic customer value assessment. Managers must make use of existing direct interactions with their customers, or try to develop such interactions, in such way that the company can influence the customers’ value creation (Grönroos 2017). Provided that a platform of co-creation exists, including direct interactions with the customers, it should be utilised as an opportunity for a company to gain necessary information for enhancing the value creation process of developed services.

4.2. Customer centricity through service-dominant logic

Increased competition is challenging the traditional product-based logic to achieve a competitive advantage, which has been the standard in many industries (e.g. Bettencourt and Brown 2013; Coreynen et al. 2018). Moreover, in today's markets, customers are demanding more than just partial answers to their problems and are increasingly seeking more comprehensive solutions. Therefore, manufacturers and other product-centric businesses are pushed towards adopting new strategies based on other sources of competitiveness. As a consequence, both manufacturers and distributors of goods are moving from purely product-centric offerings towards services and other solutions in order to build sustainable competitive advantage and to increase revenues (Adrodegat et al. 2018).

This creates a situation where a traditionally product-centric business expands its operations to a previously unexplored area of service business. This shift into a new area of business is not necessarily a simple task for an organisation and it requires additional resources and new expertise. Most importantly, this requires a new kind of approach and business logic that will be compatible with services.

Services are portrayed as one of the main elements in creating new strategies where companies' previous value propositions are shifted from merely selling products toward providing more comprehensive product-service-systems or hybrid offerings, which utilise both products and services. In addition to value propositions, this development is also reshaping businesses from the very foundations of their business logic, driving the development towards service-oriented business models. This phenomenon is further described by Kowalkowski et al. (2017) as a transformational process of servitization through which a company shifts from a product-centric to a service-centric business model and logic. In marketing literature, this is discussed as a transition from the traditional goods-dominant logic (GDL) towards service-dominant logic (SDL) (Vargo and Lusch 2004; 2008; Grönroos and Ravald 2011). In essence, SDL reconceptualises some of the fundamental elements in business and provides a new logic for service, resources, exchange and value (Lusch and Nambisan 2015). Therefore, service-dominant logic can be regarded as a central philosophy in the service business and as an essential element in service development and service productisation.

There are several distinct differences between the traditional GDL and the more modern SDL. The fundamental idea of GDL argues that the marketing of tangible goods is

essential to both business growth and profit and views services as secondary or as immaterial products (Gannage 2014). In brief, GDL represents the very basic economic theories and is based on views of efficiency, production, and labour, which are the accepted rules for most goods-based economies. GDL focuses on the separation and control of actors to optimise and manage tangible outcomes of economic processes, i.e. in the production of goods (Vargo and Lusch 2004; 2008). In comparison, SDL focuses on the processes of serving rather than on the raw economic output in the form of a tangible product offering that acts as the object of exchange. Furthermore, there are also fundamental differences in how these two logics view value creation.

GDL views value as something that is created by the provider, which is then distributed through the exchange of goods and money in the marketplace (Gruen and Hofstetter 2010). This perspective defines distinctive roles for the producers and consumers and presents a straightforward approach to value creation and exchange. According to goods-dominant logic, value creation is usually understood as a series of activities performed by the producer alone (Vargo et al. 2008) and value of a product is contained in the product itself (Gruen and Hofstetter 2010). Accordingly, value is therefore determined by the producer and is embedded in the produced goods. Thus, the value can only be transferred when these goods are exchanged. This type of value is discussed as ‘value-in-exchange’ (Vargo and Lusch 2004), and it is often used to define the value creation process of tangible products.

Service-dominant logic is based on a more extensive understanding on value creation, and it recognises the interwoven network of specialised organisations and individuals who are exchanging their competences for increasing their well-being (Vargo and Lusch 2004). The very central principle of service-dominant logic is that service is the fundamental basis for exchange and all actors deploy their skills and competences when making an offering of their service to one another (Vargo and Lusch 2004; 2008). Moreover, service-dominant logic emphasises the role of service as the heart of value creation, exchange, and marketing (Yazdanparast et al. 2010).

According to the basic principles of SDL, service is seen as a collection of resources available to the customer who combines these resources provided by the seller, thus providing a benefit or a service to both parties (Gruen and Hofstetter 2010). Accordingly, value is perceived and determined by the consumer when they beneficially apply provided resources during use. Value, according to SDL, is determined based on ‘value-in-use’ rather than ‘value-in-exchange’ (Vargo and Lusch 2004; 2008). This definition of value

suggests that companies can only make value propositions to their customers since real value is only realised for the customer if the provided resources fulfil the initial value proposition. Thus, the GDL can be viewed as a more linear concept compared to SDL, which can be explained by the different scope between tangible goods and intangible services as elements of exchange.

SDL reshapes the overall business logic, but it also provides a new approach to service innovation and highlights the importance of networks of actors in service development. According to the principles of SDL, innovations can no longer be developed from within the confines of an organisation, but instead, they should result from the actions of a shared network of actors ranging from suppliers and partners to customers and independent inventors (Chesbrough 2003; Nambisan and Sawhney 2007). It can be argued, that this approach, together with the 'value-in-use' model challenges companies to change their previous mindset when it comes to forming their service offering.

Therefore, instead of following the traditional method of developing services around existing processes, companies should instead evaluate their offering from outside in and innovate new processes based on these findings. The service-centred view of marketing is both customer-centric (Seth, Sisodia and Sharma 2000) and market-driven (Day 1999). This also transfers to the value creation process, as companies should continuously search for possibilities to understand and support their customers' value creation process (Grönroos and Ravald 2011). SDL views the customer as a resource and a collaborative partner that co-creates value with the company (Vargo and Lusch 2004). Companies can gain a competitive advantage by engaging customers and value network partners in co-creation and co-production activities. Therefore, companies should adjust their dominant business logic accordingly in order to be able to respond to shifts in customer demand and develop their value proposition through customer-oriented approaches suggested by the service-dominant logic.

4.3. Value co-creation and the co-production of the value proposition

The traditional product-centric manufacturer-consumer logic has been challenged by SDL, in which a more active role of customers is emphasized in all value co-creation processes. This logic also extends to the co-production of value propositions, where the customer is recognized as an essential contributor to the development of a service offering (Vargo and Lusch 2011). In this approach, the customers are seen as actors that can be incorporated into the service process, and they can promote value creation. Consequently,

when industries are branding and developing service quality and striving towards improving customer experiences, they should be focusing on customer-centricity. This customer-centric approach is referred to as the outside-in perspective, where the company actively makes use of its customer's point of view and incorporates this outside information into its service development (Miettinen 2017). According to Kohtamäki and Rajala (2016), the collaborative development of new service offerings and the co-production of value propositions are becoming an increasingly common practice also in the B2B context.

The concepts of value co-creation and co-production of value propositions help to further explain what value is and how it is generated through the interactions among different actors in a diverse B2B business environment. Furthermore, by understanding the concepts of value co-creation and the co-production of value propositions a company is more capable in comprehending the organisational, dynamic, and systems-oriented influences on value creation (Kohtamäki and Rajala 2016). This additional knowledge can then be utilised inside the organisation and directed towards providing better services. In a B2B context, customers experience value as an outcome of a value co-creation process, in which value propositions act as transporters of potential value in the exchange processes among the supplier, the service provider and the customer (Kohtamäki and Rajala 2016).

However, customers only make use of a company's offering when they view it as a vital part of a solution they need or want to integrate with other resources (Lusch and Nambisan 2015). Thus, services that cannot fill these requirements are experienced as less of value by the customers and have a lower success rate in the market. Therefore, it is highly important for a company to be able to develop service offerings that match the needs of their customers and create actual value for them. Instead of developing services from within the confines of the organisation, companies should focus on finding ways to include this external customer information into their development processes. Customers should be viewed as an essential resource in the development of service offerings as they can significantly contribute to the creation of ideal value propositions (Vargo and Lusch 2011).

Customers are an inseparable part of the value creation process as they are the end-users who determine the actual value through user experience as value-in-use. Service literature also agrees that this user experience is primarily co-created by the customer and the service provider (Vargo and Lusch, 2004; 2008) and according to service-dominant logic

value creation is a co-creational process that includes actions by both the service provider and the customer (Grönroos and Voima 2013). The customer appears in two roles in the service production process. First, they have the role of a consumer and they perceive the quality of service and then, based on these perceptions, they indicate their willingness to buy, thus determining the level of revenues the service provider ultimately gets. Secondly, the customers act as production resources, and alongside service employees and other resources co-produce the service. Therefore, the customers can be seen as influencing the service that is produced, and also the quality of the service they will receive (Kim et al. 2014). Consequently, as the customer's role is becoming increasingly important in the process of creating successful services, companies need tools and methods that give them abilities to actively participate in these increasingly important service-related co-creational activities.

The customer value experience as in 'value-in-use' can be co-created in the interaction among the actors that participate in the process. The process of value co-creation takes place when customers and providers engage in dialogue and interaction during design, production, delivery, and consumption of the service (Yazdanparast et al. 2010). During this process of value co-creation, the objective of the company is to actively influence the customer's value-creating process and support their value fulfilment (Grönroos 2017). Value co-creation and the co-production of value proposition should not be treated as similar processes since the service-dominant logic framework considers coproduction as a sub-process of value co-creation (Kohtamäki and Rajala 2016). Value co-creation covers all collaborative processes of value creation in service, particularly in the context of use, whereas coproduction of value propositions is limited to the process of developing the resources that will be exchanged (Kohtamäki and Rajala 2016). More precisely, co-creation of value is linked to the outcome that is realized through interaction, and co-production is about designing and developing the value proposition that can be exchanged between the service provider and customer. The methods for value co-creation are based on the collaborative creation of customer experiences, which also includes the service provider's value proposition (Kohtamäki and Rajala 2016).

Value propositions can generally be understood as marketing offers or as promises of value that are developed and communicated by a company to their customers with the intention that these value propositions are then accepted and bought (Ballantyne et al. 2011). Furthermore, value proposition provides an informative link between the activities and outcomes of the offered service (Skålén et al. 2015). In conclusion, the value proposition that the service provider has developed and displayed for their customers acts

as the primary platform for transferring value to the customer. This also correlates with the service-dominant logic perspective on value creation, as a service provider cannot deliver value alone but instead can offer value propositions for the customer (Vargo and Lusch 2004; 2008). Thus, value propositions can only display the potential value as true value is always determined and experienced by the customer through 'value-in-use' (Vargo and Lusch 2011).

The level of customer information utilised in the value proposition that a company has created can vary, as it can be entirely created by the company itself or coproduced with its customers (Ballantyne et al. 2011). These coproduced value propositions are more in line with the service-dominant views on value creation as the components of a value proposition are a result of a dialogue between the service provider and its customers.

According to Macdonald et al. (2016), value propositions should be jointly designed with the customer, as this will contribute to the desired value later experienced through 'value-in-use'. Coproduction of value propositions includes a variety of terms but when simplified this concept can be described as a collaborative process where the customer contributes to the service design, process development or to the service providers brand development activities (Kohtamäki and Rajala 2016). The exact methods of coproduction of value proposition consist from practices which enable a customer to influence on a service provider's resources, processes, products, services or solutions, which are then coproduced in the interaction between the service provider and the customer (Kohtamäki and Rajala 2016). In essence, coproduction means that the customer is integrated into the organisational processes as a resource (Figure 8). Through this collaboration, both the service provider and the customer can use their resources and competences towards developing a value proposition that will be beneficial for both parties.

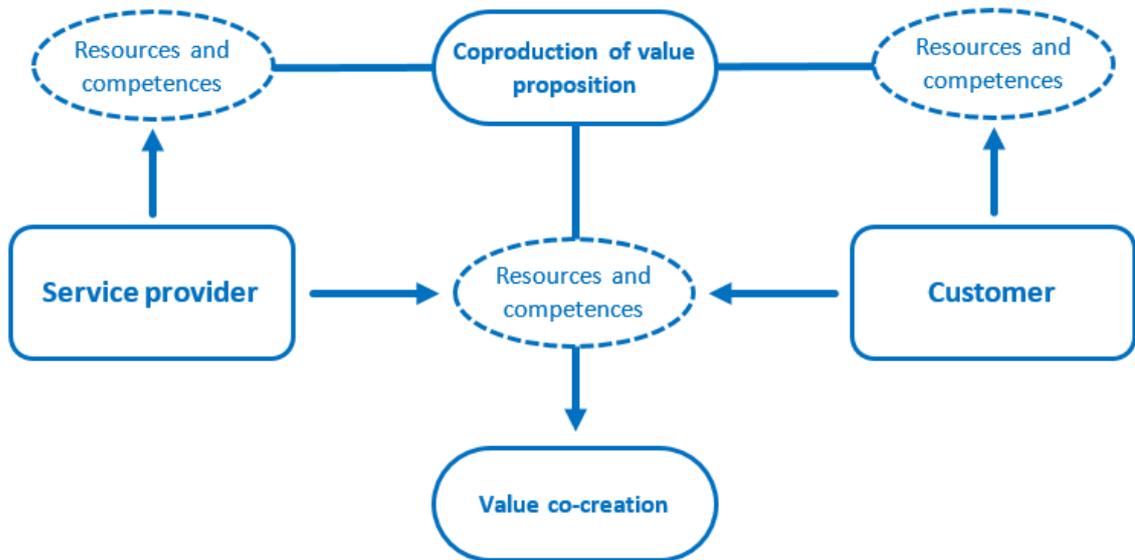


Figure 36 The process of value co-creation and coproduction of the value proposition according to service-dominant logic.

Since the service provider cannot on its own create and deliver true value, it is important that the customer can be integrated into the service development process where they participate in co-creation and co-production activities. By doing so, the service provider will be able to gain contextual and holistic understandings of user experiences, actions and processes, which can help in creating better value propositions that enhance the value experience of 'value-in-use' for the customer (Yu and Sangiorgi 2018). This network-centric approach to innovation is one of the central approaches introduced by service-dominant logic. Accordingly, innovations are created by involving a shared network of actors ranging from suppliers and partners to customers and independent inventors to the process, thus promoting the idea of co-creation on a large scale.

The nature and process of value creation have undergone significant changes because of the shift in dominant logics. To summarise, value is no longer developed only from within the boundaries of an organisation, but instead, value can be developed through co-creational processes that utilise customer involvement. The developments on the understanding of value presented by service-dominant logic emphasise the active role of customers in all value co-creation processes creates the need for companies to be able to understand these roles in order to facilitate co-creation of value (Kohtamäki and Rajala 2016). According to Lusch and Nambisan (2015), there are three general roles for customers participating in value co-creation; (1) ideator, (2) designer, and (3) intermediary (Figure 9). In short, customer role can be determined from the nature of service exchange and the type of resource integration achieved. Moreover, these three roles offer customers the opportunity to experience different types of value.

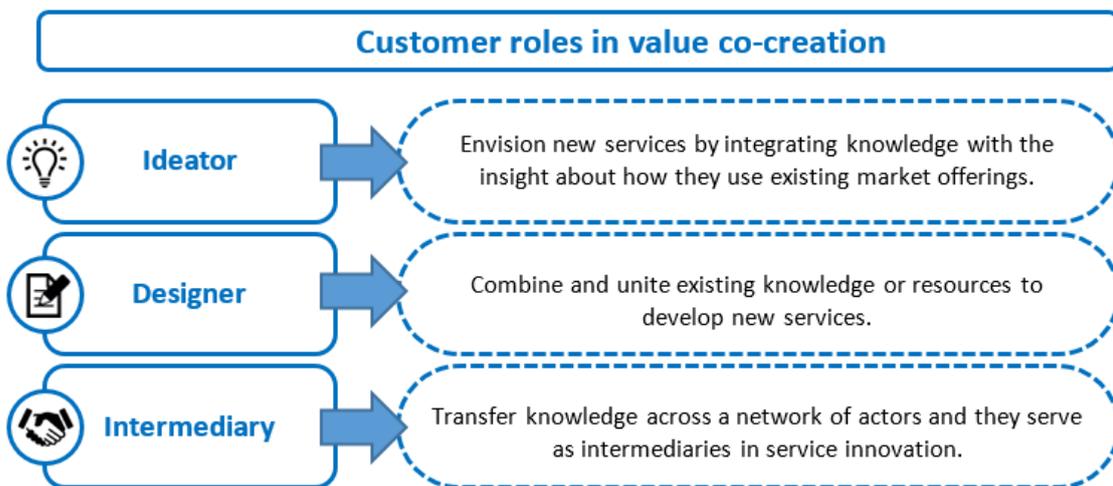


Figure 37 Customer roles in value co-creation (Lusch and Nambisan 2015)

Customers acting in the roles of idea creators have the capability of bringing useful knowledge about their needs and unique work context to the firm. Additionally, these ideators can envision new services by integrating their existing knowledge with the insight about how they use existing market offerings. However, this role is highly depended on knowledge conversion from tacit to explicit and from the capability to enable knowledge sharing with other actors in the co-creation network. The role of a designer reflects the capability of the customers of service offerings to combine and unite existing knowledge or resources to develop new services. In the designer's role, the need for other actors to present their offerings in a way that facilitates such resource integration and to allow different interpretations of existing knowledge components is highlighted. Customers in the role of intermediary have the capability of transferring knowledge

across a network of actors, and they serve as intermediaries in service innovation. In this role, customers are contributing to co-creation by identifying relevant connections across the network of actors and thus providing value for each party involved. This role is highly depended on successful facilitation of exporting and importing knowledge across network boundaries and from the ability to explore and discover valuable connections among a diverse set of resources. (Lusch and Nambisan 2015)

As participants in co-creational activities, customers integrate their knowledge resources with those obtained from other actors involved in the process, thus creating new service innovation opportunities (Lusch and Nambisan 2015). These different actors then create service ecosystems in which they co-produce service offerings, value propositions, engage in mutual service provision, and co-create value (Vargo and Lusch 2011).

To summarise, value co-creation can be seen as a process that benefits all parties involved as it gives the service provider valuable information on how they can improve their services and provide better value proposition for the end customer. Additionally, through co-creation, the customers involved in this process are able to communicate their needs to the service provider and together form services that offer the best value during use. However, it is essential to recognise that the co-creational value is dependent on the resources and competencies that exist in the customer's organisation (Ordanini and Pasini 2008).

5. THEORETICAL FRAMEWORK ON CUSTOMER-ORIENTED SERVICE PRODUCTISATION PROCESS

Service productisation has been described relatively broadly in service literature as a development process that aims towards enhancing the product-like characteristics of service with the overall objective of making the service more concrete, systematised and standardised, both internally and externally (Jaakkola 2011; Valminen and Toivonen 2012; Harkonen et al. 2015). The benefits that companies are seeking through service productisation are commonly related to increasing efficiency, profitability and competitiveness (Valtaoja and Järvi 2012). However, the exact positioning of it among service development, service design, operations, service sales and marketing has not been entirely clear as service productization has been discussed as a specific type of service innovation and productization activities have been positioned somewhere in the interface between service development and commercialisation (Harkonen et al. 2017). Furthermore, the utilisation of service productisation as a development tool also requires an applicable framework that would outline the process and also give a more detailed description of the individual phases and tasks within this process.

The circumstances for using service productisation as a solution are also necessary to outline and define. For example, Valtaoja and Järvi (2016) compared service productisation as similar to formalisation innovation, which is a type of service innovation that makes services more defined by specifying service characteristics and standardising service elements (Gallouj and Weinstein 1997). However, some level of productisation is needed in all service innovation processes as the innovation needs to be systematised before it is ready for organisation-wide implementation (Valtaoja and Järvi 2016). Moreover, according to Jaakkola et al. (2009), service productisation suits for developing both new and existing services. Overall, these current views on service productisation present it as a development method very close to existing service development processes. Thus, service productisation process is generally applicable in such scenarios where there is a need for enhancing the product-like characteristics of an existing service or a completely new service.

Another critical aspect of the existing discussion on service productisation that should be taken into account is the type of the services this process is commonly targeted. Currently, a large portion of the discussion on service productisation is focused on professional services, often referred to as knowledge-intensive business services (KIBS) such as IT services, technical consultancy, legal, financial and management consultancy, and

marketing communications services (Valminen and Toivonen 2012). These types of services are often constructed mostly around knowledge, acting as both the input and output of the service and thus the immaterial nature of the offering is further highlighted (Gallouji 2002). However, there are also services that have more tangible elements than KIBS such as product-service systems (PSS) or add-on services, which in turn are more relevant for product-centric businesses such as manufacturing companies (Lahy et al. 2018). In short, a PSS is a combination consisting from tangible products and intangible services, designed and combined so that they are jointly capable of fulfilling specific customer needs (Brandstötter et al. 2003) such as renting, leasing, or maintenance concepts where the service provider operates or controls the product (Sundin et al. 2009). Thus, service productisation can also be used for services that have different degrees of immateriality, ranging from professional services to product-related services.

The type of service and degree of immateriality can influence the structure of service productisation process as the organisational expertise and level of intangibility determine the starting point and objectives for the development process. For example, when an organisation that is traditionally production-oriented undergoes servitization or develops product-service systems, effective and efficient services delivery can present transformational challenges. This is often caused by a lack of earlier service knowledge within the organisation (Lightfoot et al. 2013). In comparison to businesses involved with knowledge-intensive professional services, that are instead often struggling with the problems created by the highly immaterial nature of their services and from personified knowledge within the organisation (Valminen and Toivonen 2012). Thus, the premises and desired objectives can be different depending on the service that is to be productized and also from the current organisational capabilities. Additionally, these factors can influence the overall scope of the service productisation process and in the required resources for completing the set objectives.

Despite the existing academic literature surrounding service productisation, the exact contents and conceptual definition are not entirely definite (Härkönen et al. 2017). Prior academic literature has developed various ideas on the contents of service productisation and many of these interpretations and proposed contents do share some similarities (Härkönen et al. 2015; 2017). However, in addition to the academic discussion, there also, numerous references of the contents of service productisation in the managerial discussion (Jaakkola 2011; Härkönen et al. 2015; Valtakoski and Järvi 2016), which indicates that service productisation activities are already used in some extent within the service industry. The currently rather dispersed academic and managerial discussion on

service productisation includes various practices and techniques but does not provide a systematic framework that would explain the exact structure and key considerations for productizing services. Thus, the practicality of utilising service productisation practices for enhancing service performance is currently somewhat limited as there is no readily available template that would cover the whole process. Thus, this chapter will construct a customer-oriented framework for service productisation by making use of existing sources on the topic.

5.1. Theoretical framework

Overall, service productisation process is described as supporting and promoting the development of a systematised, tangibilised, and formalised service offering. According to Harkonen et al. (2017), the primary focus of service productisation is on the service product and the related service processes. These activities are often associated to the internal processes of the service provider, but customer orientation has also been recognised as a central part of a service productisation process (Valminen and Toivonen 2012; Tuominen et al. 2015; Harkonen et al. 2017). Customer-oriented approach for service productisation can be applied by utilising different methods and relevant customer-oriented practices, or it can also be the dominant philosophy during all activities. For example, the principles introduced by service-dominant logic on value creation and the role of the customer give insight into the fundamental aspects of how customers can be better included in the service productisation process. Consequently, a comprehensive service productisation process should include elements for both customer-focused actions as well as detailed intra-organizational tasks. Thus, a customer-oriented service productisation process can be described with a two-fold approach with two different streams, the internal and external, that both contribute to the development of a systematised, tangibilised, and formalised service.

The suggested theoretical framework for describing the customer-oriented service productisation process is constructed using the existing information about service productisation that appears in academic literature and combining it with relevant concepts such as the customer-oriented views in service-dominant logic. The framework is based on a model by Valminen and Toivonen (2012) that has a two-fold approach to service productisation. The basic idea behind this framework is the recognition of the customer's importance as part of the service productisation process. Thus, the framework has a separate external customer-related section that gives insight on how the customer is related to the overall service productisation process. The presented theoretical framework

also uses the elements of service (Edvardsson 1997) to categorise the different tasks within the service productisation process. The customer-oriented framework presented in Figure 10 consists of a two-fold approach that is divided into the external section and the internal section, illustrating the customer-related and intra-organizational tasks separately. Additionally, this is then supplemented with more accurate descriptions of each task and the corresponding methods.

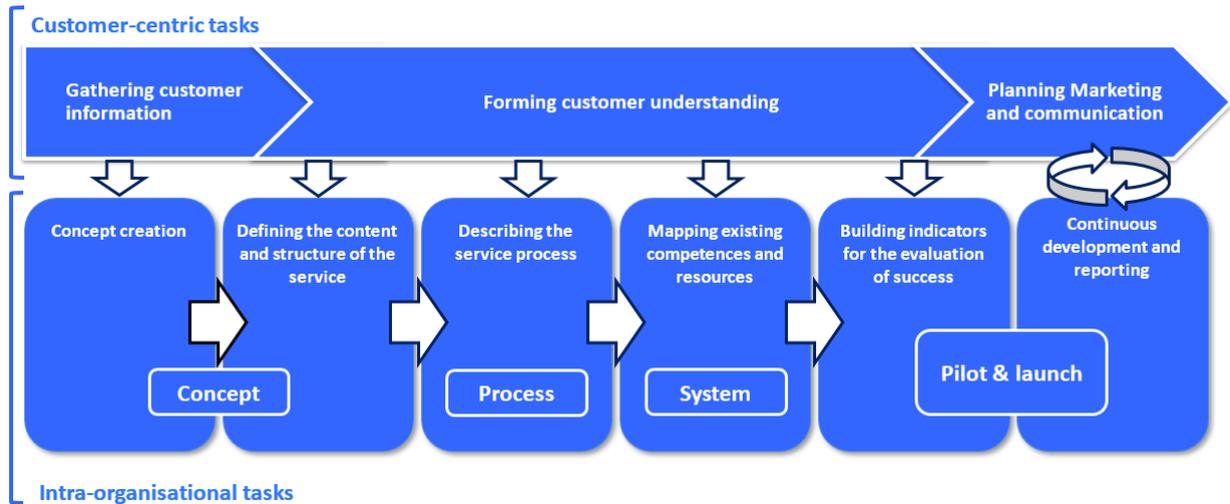


Figure 38 Framework for customer-oriented service productization. Modified from Valminen and Toivonen (2012) and Jaakkola (2011)

In addition to the steps portrayed in this framework, service productisation process also includes both the target service definition and designation of the specific objectives for the service productisation process. These are considered as the preliminary steps that precede the actual process and must be defined when preparing for the productisation process. For example, the target service can be chosen after describing and evaluating the current offering and comparing it to the company's business strategy and objectives and evaluating how the business should be developed based on this analysis (Jaakkola et al. 2009). After the target service has been chosen the objectives for the productisation process must be defined. As with many other development processes, service productisation process must have clear objectives and criteria for evaluating the achievement of these objectives (Jaakkola et al. 2009 p. 33). These objectives can be, for example, related to service quality or increased productivity. After completing these preliminary steps, service productisation process can be started by following the defined external and internal tasks of customer-oriented service productisation.

The upper section of the framework describes the customer-oriented part of the service productisation process. In this framework, the customer-oriented tasks form an essential part of the service productisation process that ensures customer involvement in the process. The customer-oriented tasks start from the gathering of customer information that is followed by forming customer understanding based on the collected information, which is then applied in every step of the service productisation. Finally, the customer-oriented tasks end in the planning of marketing and other external communication. With these steps, this framework addresses the need to apply service-dominant logic based tasks that ensure customer value creation and co-creational aspects as part of the service productisation.

The lower portion of the framework describes the intra-organizational tasks that are included in the service productisation process. In brief, the intra-organizational stream is more focused on the elements of the target service, which can be separated into the service concept, service process and the service system. Together, these three elements create the prerequisites of a service (Edvardsson 1997), which are also often mentioned as the focus areas of service productisation activities (Harkonen et al. 2015; 2017). In short, the intra-organizational tasks are as follows, concept creation, defining the content and structure of the service, describing the service process, mapping existing competences and resources, building indicators for the evaluation of success, and finally, continuous development and reporting. As highlighted in the framework, each of the service elements are targeted by the intra-organizational tasks that ultimately end with the piloting and launch of a productized service.

Together these two streams ensure that the productisation process includes both organisational and customer-related actions. Thus, the service will be developed with enough insight that it can meet the objectives set by the organisation as well as the expectations of the customers. The outcome after completing each of the tasks and their related methods is a productized service that can be communicated, sold, delivered and invoiced more effectively. In short, the service productization process, as described in the framework, can be used as a development method to enhance the implementation of service innovations (Valtaoja and Järvi 2016) and for accelerating the spread of services across the organization through replication (Den Hertog et al. 2010). Furthermore, it can also be used for improving the efficiency of service operations, and to make the service easier for customers to understand and purchase (Jaakkola 2011; Valminen and Toivonen 2012). Thus, a productized service should be ready to be replicated throughout the organisation (Den Hertog et al. 2010), easily communicated to the customer and

effectively produced and managed internally (Jaakkola 2011; Valminen and Toivonen 2012).

5.2. The proposed productisation methods within the framework

The framework introduced in figure 10 is constructed from several different internal and external tasks that should together contribute to the formation of a productized service. This framework acts as the outline for the process and thereby helps to demonstrate the structure of service productisation process. However, these individual tasks can be still broken down to a more detailed level, so that the exact methods and their relation to the overall service productisation process can be understood on a more practical level. For example, service productisation is often described with such concepts as standardisation, systematisation, tangibilisation and codification, but these are terms or concepts that give only a limited description about the actual methods on how the service will be modified or developed during the process. Thus, this chapter is focused on expanding the understanding around these repeatedly discussed concepts related to the service productisation process. This will be achieved by giving more practical context for these productisation related concepts and by connecting them to service productisation process and its tasks that are described in the presented framework.

The primary focus of service productisation tends to be on the service product and the related service processes, which also indicates that most of the methods follow this same focus. Furthermore, the proposed framework displays a connection between the different productisation tasks and service elements. Thus, service elements have an essential role in service productisation process, as they are the targets for many of the productisation activities (Harkonen et al. 2017). For example, the central productisation practices suggested by Jakkola (2011) are aimed towards the service offering, professional expertise and service processes. The service offering, in this case, can be considered as the service concept following the service elements presented by Edvardsson (1997). The service offering, or in other words the service concept, is a crucial section of service productisation as the literature on service productisation directly refers to the need to make the service offering more product-like (Valminen and Toivonen 2012; Harkonen et al. 2015).

Additionally, productisation contributes to both the effectiveness and profitability of service through systemization and routines that are implemented to the internal service processes (Valminen and Toivonen 2012; Harkonen et al. 2015). This part of service

productization can be connected to the service process, which is again one of the central service elements. Lastly, the service system is addressed during service productisation through the organisational resources and knowledge that are linked to the service. However, as service processes relate to the technical side of service, working methods, resources and the service system side does not seem to be as widely discussed even though they are considered to be related to service productisation process (Harkonen et al. 2017). Therefore, this may be an indication that the service system is given less emphasis during service productisation process compared to the service concept and service process.

In the framework, the service concept is covered by two tasks, concept creation, and with defining the content and structure of the service. These two tasks are aimed towards improving and developing the service concept during service productisation. In brief, the service concept specifies the content and structure of the service based on customer needs and includes the idea of how these needs are to be satisfied through the service (Edvardsson 1997). Moreover, an accurately formulated service concept acts as an integrative component between the organisation's business strategy and the delivery of its services (Valminen and Toivonen 2012). According to Jaakkola (2011), during service productisation, standardisation activities should be applied to the service offering, i.e. the service concept. These standardisation activities are intended to resolve the lack of clear understanding surrounding what the company could offer to their customers. More precisely, the objective of these practices is to create simple, tangible offerings that are easy to understand and evaluate (Jaakkola 2011) so in addition to standardisation and specification also tangibilisation activities are employed. As part of a service productisation process, this means that the content of a service needs to be clearly defined and standardised to some extent, and the service should be reinforced with tangible elements. However, a complete standardisation of service processes is not necessarily required, as process modularisation can also be applied (Härkönen et al. 2017). In brief, service modularisation is achieved by dividing a service into smaller components, i.e. modules, and these modules can then be combined in order to form customizable offerings (Carlborg and Kindström 2014). Thus, through modularisation, it is possible to impact on the standardisation of various sub-processes and the service product, as well as to customised offerings because modularisation enables a certain degree of standardised flexibility for addressing individual customers (Carlborg and Kindström 2014). Tangible elements can be added to the service, for example, by developing brand names, visual identities and with physical material such as brochures (Jaakkola 2011).

With the framework's customer-oriented approach in mind, the service concept should always be developed according to the customer understanding that has been formed through the collected customer information. This is important as the service concept is directly linked to the customer perspective where the customer's primary and secondary needs are translated into necessary service components (Edvardsson 2005; Edvardsson and Olsson 1996). Moreover, customer orientation focuses on the need aspect in relation to service productisation and is related to both the service concept and the processes and involves both internal and external customer perspectives (Härkönen et al. 2017). Thus, analysing the needs of current and potential customers is essential and should be done based on the external information that is then interpreted and refined internally. This analysis should then be used as the basis for creating the service concept, and for defining the content and structure of the service.

To summarise, during the first tasks of service productisation process the service needs to be named and branded, its contents need to be clearly outlined, and a description of the outcomes of the service must be constructed. Additionally, the service can be divided into smaller parts or phases, i.e. modularised to ease standardisation and communication towards the customer. Together, all these steps help in reducing the variability and ambiguity of the service and facilitate better marketability and increased sales. With an organisational view, specifying and standardising the service concept can improve sales by making the sales process more straightforward so that sales activities are made less resource-intensive (Jaakkola 2011). This means that during service productisation the service concept is modified to better serve both the customers externally and organizational personnel internally. Additionally, standardisation activities can also improve the effectiveness of marketing communication activities, as the contents and benefits of the service are clearly defined in the eyes of the customer (Härkönen et al. 2017). Service that is productized can be effectively communicated to the customer without the obstacles traditionally related to the immaterial nature of a service.

The next target after the service concept is the service process, which is described in the framework as the task of describing the service process. In brief, the service process is a more detailed description of the chain of activities on how the service is produced for the customer. More specifically, the service process usually consists of core processes, support processes and network processes which can involve suppliers, customers and partners, and management processes that consist of the company's tools or processes for planning, organising and controlling the available resources (Edvardsson 1997). During service productisation, the standardisation activities are applied to the service process and

the related sub-processes (Jaakkola 2011; Järvi 2016). In short, this service process standardisation can be achieved by creating or modifying all necessary processes related to the productized service. The result should be a process chain that can be performed with the desired level of performance defined in the objectives of the productisation process. Moreover, with systematically and precisely defined and planned service processes, an organisation can potentially improve resource allocation, planning and measurement (Jaakkola 2011).

Another method that can be utilized as a part of describing the service process is service blueprinting. Service blueprinting is a method used to visualise service processes and to clarify the roles, responsibilities, and the interaction between, the customer and the service provider (Valminen and Toivonen 2012). Thus, through service blueprinting a service provider is able to make sure when, where and in what way customer interaction takes place so that the service can be produced efficiently without overlooking customer satisfaction. In addition to standardisation activities, the service process is also systematized during service productisation process. Service process systematisation is understood as influencing on the capability to make the process more controllable (Jaakkola 2011) and as the ability to reproduce services more effectively (Harkonen et al. 2017). Systematisation can be achieved through methods that help predefine internal processes so that some of the service-related routines could be performed more straightforward and faster inside the organisation. Furthermore, according to Härkönen et al. (2017), clarifying and documenting the service processes and sub-processes is essential for service productisation as this exposes the processes interrelation. This comprehensive process view is necessary for identifying the relevant linkages to required resources, systems, skills, materials and facilities further down the service productisation process.

In addition to the process-focused approach, service productisation also includes elements that underline the importance of knowledge and promote the use of frontline employee participation and cross-unit collaboration during service productisation. In the framework, the service system is developed through a task of mapping existing competencies and resources related to the service (Jaakkola 2011). In short, the service system is constructed from all the resources and other subsystems that are required for producing the service. Furthermore, these subsystems and the resource structure of a service system consist of customers, organisation structure and system, management and staff, and from the available physical and technical resources (Edvardsson 1997). In essence, the service system should be developed accordingly after mapping the existing

competencies and resources as this will help to overcome potential weaknesses or gaps that can affect negatively in the service. Organisational knowledge and expertise are an essential component of the service system, and according to Järvi (2016), service productisation process also includes a process of knowledge transformation. This is done through two dimensions: from scattered and tacit information to explicit and codified knowledge, and from individual employee knowledge to organisational knowledge. A critical aspect of a service system is that internal expertise and experience should be tangibilised first and foremost at the organisational level (Jaakkola 2011). For example, organisational performance can be restricted if a service that is being sold is strongly identified with the expertise of an individual person. Thus, in addition to conventional resource mapping methods, organisational knowledge sharing and codification of this knowledge into well-documented form are also essential methods in developing the service system during service productisation.

While clarifying and understanding the service concept, process structure and service system are given particular emphasis, recognising customer-specific activities, resources and competencies are also understood as critical during service productisation (Harkonen et al. 2017). The framework takes this into account with the external customer-related tasks, which are aimed towards constructing customer understanding by involving the customer into the service productisation process. This customer-oriented process starts with the gathering of customer information and ends with the planning of marketing activities. Together with the internal tasks, the intention is to develop this customer information into genuine customer understanding and incorporate and utilise it during the internal tasks. This type of customer orientation as part of service productisation is often connected to the service concept development and customer value creation process (Harkonen et al. 2017).

Furthermore, analysing the needs of current and potential customers is considered essential as the customer perspective is necessary in order for a company to translate customer needs better into the right service components (Harkonen et al. 2017). Thus, the service productisation process should start from the gathering of customer information, and end with the planning of marketing activities (Valminen and Toivonen 2012), which also reflects the service-dominant logic approach of customer's role in value creation. However, this initial customer information can be further enriched during the service productisation process as the co-creational activities between the service provider and customer continue (Valminen and Toivonen 2012). This gathered customer information is then transformed into genuine customer understanding and then utilised by embedding

it into the service concept during the service productisation activities carried out within the organisation.

When observing the customer-related part of the framework, the first task of a service productisation process is to gather the necessary customer information that will be then used in forming customer understanding within the organisation. According to Härkönen et al. (2017), the basic principles of customer orientation involve the use of customer contact employees who act as the link between the customers and the organisation. However, this ability is greatly affected by the employees' capability in capturing this customer information as well as integrating it into the company's operations and marketing functions. The main methods for capturing and creating customer information as part of the service productisation process is by involving customers in the process through questionnaires, customer research and by collecting customer feedback (Härkönen et al. 2017). In brief, the primary method is always active communication between the customer and the organisation. After collecting the necessary customer information, the potential value of service will be constructed around this information as it takes into account all of the customers' needs and the value creation. With the use of customer understanding, a company is able to impact significantly on the positive outcome of the service productisation process. After collecting customer information and defining the value creation logic, the service productisation process can advance into the internal tasks that are mostly centred on the service elements. During this part of the productisation process, most of the work is carried out inside the organisation as it is focused on internal tasks. However, as the service productisation process continues, customer-centricity is not excluded, as the intention is to use the gathered customer information during all of the phases in the process.

Before initiating the service productization process, it is necessary for the organization and its management to clarify collectively what is the objective and what will be achieved through the productization process, as this will be critical for the cooperation of different organizational stakeholders during the process and the evaluation of success (Tuominen et al. 2015 p. 14). The success of service innovation is traditionally measured with various financial, competitive, and quality measures (Menor et al. 2002). However, as these measures are external and mostly related to market performance, additional internally oriented measures are also needed (Valtaoja and Järvi 2016). Service quality, productivity and employee satisfaction and competence development are examples of such additional dimensions that can be used to measure the success of a service productisation process within a company (Jaakola et al. 2009). Additionally, for an organisation to utilise service

productisation they first need to describe and outline the service productisation process they will undertake and also define the service that will be the target of this process (Valminen and Toivonen 2012).

Furthermore, Tuominen et al. (2015) suggest that before initiating a service productisation process, companies should first define what and how they are going to productize, what resources they need and in what order they will productize the service. Thus, the preliminary measures of service productisation can be described as defining the service productisation process and the individual tasks that will be used and set the objectives for the service productisation. This is critical for the overall success of the productisation process, as this will ensure that the organisation and all of the stakeholders involved are fully aware of the objectives and upcoming procedures that will be executed. Additionally, this will also enable the organisation to evaluate the success of the productisation process afterwards. For example, the success of service productisation process can be determined by the achieved internal and external goals set for productisation, and by the fulfilment of primary objectives for service productisation (Jaakkola 2011; Valtaoja and Järvi 2016).

Service productisation is a multi-phased process that involves both external and internal actors that participate in several different tasks. It is the process of analysing a need and then defining and combining suitable elements of a service into a product-like object, which is more repeatable and comprehensible than the first service. Service productisation tasks cover customer-oriented, process-related and commercial activities that enable improvements in communicating, selling, producing and delivering, using and invoicing the service. The objective of many of the methods is to systematise, standardise, tangible or codify the service and its contents in a customer-oriented way. This process is used first and foremost for services that are identified as too abstract and intangible, which are then clarified by developing service elements, creating replicability and enhancing understanding of the offering (Härkönen et al. 2017). These tasks and the corresponding methods are illustrated in Table 1. The benefits that companies seek through service productisation and with a productized service are first and foremost an increase in efficiency, profitability and competitiveness (Valminen and Toivonen 2012).

Table 1 Illustration of the different service productisation tasks, their related concepts and the suggested methods.

Service productisation task	Related concept	Suggested methods
Gathering customer information	<i>Customer orientation</i>	Market analysis Questionnaires Customer research Customer feedback
Utilising customer understanding	<i>Value co-creation</i>	Customer need assessment
Planning marketing and communication	<i>Tangibilisation</i>	Marketing practices
Concept creation	<i>Standardization</i> <i>Tangibilization</i>	Service concept development
Defining the content and structure of the service	<i>Standardisation</i> <i>Systematisation</i>	Defining the service offering Modularisation
Describing the service process	<i>Standardisation</i> <i>Systematisation</i>	Clarifying and documenting the service process Service blueprinting
Mapping existing competences and resources	<i>Codification</i>	Resource mapping Knowledge sharing Documentation
Continuous development and reporting	<i>Customer orientation</i> <i>Value co-creation</i>	Piloting and testing Assessing customer benefit before and after productisation Service development

6. METHODOLOGY

In this thesis, previous literature on service productisation is examined and supplemented with relevant customer value concepts in order to create a preliminary theoretical framework (Figure 10), which is then utilized in the empirical analysis based on the interviews conducted in the case company. The applicability of the theoretical framework is then evaluated based on the empirical findings for suggesting further development possibilities. Hence, this thesis presents a theory-initiated single case study with a qualitative approach based on personal semi-structured interviews.

The objective of the empirical part of this study is to examine the potential of service productisation for developing the characteristics of service by exploring service business and role customers in the case company. In the empirical part of the study, the focus is on exposing the motives and objectives for service productisation by exploring the problems related to services inside a company. Information on these problems can be then used in identifying the critical vital activities and processes to achieve the presumed benefits of a service productisation process. Furthermore, the empirical part also explores customer role in service productisation by reflecting on how customers and their roles are seen inside an organisation involved in the service business.

The research problem and the research questions were approached with the help of a preliminary theoretical framework on service productisation, which was constructed from the existing academic service marketing literature with a particular focus on service productisation, and customer value creation. The research questions are also used in constructing the questions for the semi-structured interviews.

6.1. Research philosophy

This study used a qualitative interview method with a single case company approach. A case study is an empirical approach to investigate a contemporary phenomenon in-depth within its real-life context, when the boundaries between the phenomenon and the context are not evident, and in which multiple sources of evidence are used (Yin 2009). According to the three conditions set for using the case study as a research method by Yin (2009), the case study is best suited when ‘‘how’’ and ‘‘why’’ type of research questions are used about a contemporary set of events, over which the investigator has little or no control. Furthermore, the case(s) within a case study can be explained as the unit of analysis, which has been defined for the study, mainly by the selected research questions (Yin

2009). The unit of analysis or the ‘‘case’’ can be for example individuals, organisations, communities or projects and a case study can have either a single case or multiple cases.

In order to answer the research problem of this thesis through the predefined ‘‘how’’ and ‘‘what’’ research questions, this study employs an in-depth single case study design based on qualitative interviews done in a professional wholesale company, i.e. ‘case company’. The main aim is to understand and explore the selected case from the inside and develop an understanding from the perspectives of the people involved in the case which is then integrated with the theories presented in the literature review. This kind of a research process can be described as interplay or dialogue between theory and empirical data where theory is integrated with the investigation of empirical data (Eriksson and Kovalainen 2016).

The in-depth or intensive nature of this particular case study comes from the fact that only one case is being explored. More precisely, an intensive case study draws on qualitative and ethnographic research traditions and emphasises the interpretation and understanding of the selected case as well as the elaboration of cultural meanings and sense-making processes in the specific context (Eriksson and Kovalainen 2016). The primary purpose of this type of intensive case study is to construct a narrative of the particular case based on its economic, social, cultural, technological, historical and physical setting (Eriksson and Kovalainen 2016). Thus, giving depth and a high level of conceptual validity over the phenomenon found within the case and linking causes and outcomes.

For case studies, theory development as part of the design phase is essential, whether the ensuing case study’s purpose is to develop or test theory (Yin 2009). Therefore, this case study was prepared by reviewing related literature and by creating a preliminary framework based on the existing theories. This framework is then used in facilitating the empirical data collection phase of this case study. Furthermore, the empirical findings are also integrated with the theories presented as part of the literature review. As a result of this dialogue between theory and empirical data, the structure of the preliminary framework is subjected to the empirical findings and developed accordingly.

This gives a deductive approach for this thesis as existing theories found in the academic literature were used to form a hypothesis based on the preliminary framework of productisation. This was tested with the appropriate qualitative methods, and the outcome was later examined, and the theory was finally modified accordingly to form the conclusions of the study. The purpose of qualitative interviews are to produce the

necessary research data that will be analysed. A qualitative interview can be performed in different ways, and in this study a semi-structured interview type was chosen. Semi structured interviews can be used to study both ‘what’ and ‘how’ questions and are based on a pre-designated outline of topics (Eriksson and Kovalainen 2016). The advantage of a semi-structured interview is that the materials are systematic and comprehensive but the interviews can still be performed with a relatively conversational and informal way. Thus, giving way for gaining deeper expert insights from different perspectives and not limiting the interviews too much.

One common challenge for performing qualitative research is the quality and trustworthiness of the study. Qualitative research can be evaluated by using classic criteria for good qualitative research. The three criteria, reliability, validity and generalizability provide a basic framework for the evaluation of research in business research (Eriksson and Kovalainen 2016). Reliability is commonly used in qualitative research and it tells how a measure, procedure or instrument provides the same result on repeated occasions. Thus, reliability is related to the consistency in the research and how well other researchers can replicate the study and find similar results. The reliability of this study relies on the expertise of the selected interviewees as they have the necessary experience and relevant positions within the case company.

Validity evaluates how accurately the conclusions drawn in the study manage to describe and explain the observed phenomenon or the findings (Eriksson and Kovalainen 2016). In short, the study findings should accurately represent the referred phenomenon in a such way that they are backed by evidence. In qualitative research ‘validity’ is often used differently, and the aim is to provide research with a guarantee that the report or description is correct. Standard procedures for establishing validity in qualitative research are thorough analytic induction, triangulation and member check (Eriksson and Kovalainen 2016). In short, analytic induction combines the analysis of the data after the coding process with the process when the data are integrated with theory. Triangulation is the process of using multiple perspectives for refining and clarifying the finding of this study. The validity of this study relies on triangulation of theories as the literature review acts as the basis for the theory on service productisation.

Generalisability is connected to the research results and their application in one way or another into a broader context. In qualitative research, generalisability indicates how well-grounded and well-argued the selection of cases or people is (Eriksson and Kovalainen 2016). Moreover, in analytic generalisation, empirical results of the case

study are compared with a previously developed theory (Yin 2009). Thus, if two or more cases support the same theory, generalisation i.e. replication can be confirmed. The generalisability of this study relies on analytic generalisation that draws from the previous studies that are also used as the basis for the theories presented within this thesis.

6.2. Data collection and analysis

The data for this study was collected through semi-structured interviews within the case company. The interviews were implemented at different hierarchical levels within the case company and included personnel from different organisational levels of the sales organisation and also from business development. The interviews were executed at the case company's office, and they lasted from 45 minutes to an hour. The interview questions were based on previously determined themes (Table 2), but each interview did vary depending on the role of the interviewee in the company and their level of involvement with services and service business. Although the results are reported in this thesis in English, the interviews were all conducted in Finnish since all of the participants were native Finnish speakers.

Before data gathering, the selection of the interviewees was based on their involvement and experience in the case company's operations. All of the selected interviewees had past experience in either selling services or being part of their development process within the case company. Each interviewee also had several years of experience in the technical wholesale business and working in the case company. Before the interviews, the interviewees were sent a short description of the research and the selected main themes. The interviews were first recorded with a digital recorder, and after the interview, each interview recording was transcribed into written form. These transcribed records were then used in the qualitative analysis. Additionally, the interviews were treated anonymously for confidential reasons and the names of the interviewees and exact references to the case company were not used.

Table 2 Summary of the interview themes and included initial questions.

Interview theme	Main interview questions under each theme
Theme 1 Services and their significance to business	How would you define the term 'service'? How services differ from products? What are the typical services in technical wholesale business? What is the role of services in the case company's business?
Theme 2 Organisational requirements for service business	From what parts are a service constructed? What resources do services require from a company? What are the central challenges in the services business? What ways there are to combat these challenges? What are the qualities of a good service?
Theme 3 Different stakeholders and customer value	What are the different stakeholders involved in providing a service? How would you define the concept of 'customer value'? How does customer value translate to the customer? What ways there are in identifying customer needs?

Table 3 Interviewee information.

	Job title	Years of experience	Date of interview	Interview duration
Interviewee 1 (KP)	Sales director	15	1 st of April 2019	1h 5 min
Interviewee 2 (JK)	Area sales director	20	3 rd of April 2019	53 min
Interviewee 3 (MN)	Development manager	6	4 th of April 2019	45 min
Interviewee 4 (KE)	Sales manager	9	17 th of April 2019	58 min

7. RESULTS

The results of the interviews are categorised in a way that each section of this chapter relates to one of the three research questions of this study.

1. Why service productisation is necessary – what are the main motives pushing organisations towards service productisation?
2. How can a B2B service be productised – what are the key activities and processes?
3. How are customers integrated into the productisation process – how customer value creation and co-creational aspects of a service can be approached?

Section 7.1 focuses on the first theme about the reasons why service productisation is necessary and what are the motives behind this. Section 7.2 reports on the second theme and how a service can be productized and what are the necessary steps that can be found in service productisation process. The last section 7.3 is centred on the third interview theme and discusses customer value and how customers can be integrated as part of the productisation process.

7.1. Motivation for service productisation

This section focuses on the reasons behind service productisation by drawing from the interviewees' perspectives on services and their role in in the case company. This will bring answers to the first research question of the study, which is focused around the reasons and motives that push organisations towards improving their services and making them more product like with the use of service productisation activities. This topic was approached with the first interview theme that was structured around uncovering the basics of services and their significance as part of the case company's business perceived by the interviewees. This first interview theme laid the foundation for the rest of the interview as it acted as a preparatory introduction for discussing service business in more detail.

In service literature, the motives for service productisation are often connected to the immaterial and abstract nature of services. This same conclusion can be made based on the interviews, as all interviewees recognised the immaterial nature of services as one of the characteristics for services when asked to define service as a concept. The interviewees all work in a traditionally product-centric business and are more familiar with working with traditional concrete products. Thus, the immaterial nature was seen as

the main difference between products and services, which also was seen translating to other aspects of services such as pricing and communication within the organisation and towards the customers.

Interviewee 3: ‘‘Service is an immaterial commodity as opposed to a physical product.’’

Interviewee 2: ‘‘Services are immaterial and theory-based objects of exchange.’’

Moreover, services were characterised by the interviewees as more complicated in their structure and in the way they create value for the customers as opposed to physical products. According to the interview results, a product has its specific technical specifications and physical properties that a customer can more easily compare and evaluate based on their needs. Also, the immaterial nature requires extra effort from both parties to be able to clearly define the contents and value of a service, as it is not embedded in physical form that could be evaluated based on exact facts and figures. Additionally, this immaterial challenge was seen affecting both internally and externally, as the immateriality affect both the organisational personnel and the customers.

Interviewee 2: ‘‘I would argue that service is always more unknown for the customer than the products they are buying. This is very much caused by the immaterial nature of services as they are not concrete such as products are.’’

Interviewee 2: ‘‘Services are more difficult to sell compared to products. Services are much larger components than products, which are also very often connected to a product.’’

Interviewee 4: ‘‘Services are characterised by the pre-requisites they require because both parties need to clarify the conditions required by the service and the perceived benefits. For example, electronic invoicing services often involve the process of mapping system requirements and compatibilities between the organisations.’’

Services and their content were also seen as being dependent on the company’s service proficiency and organisational competences. In the technical wholesale business, products are manufactured by different suppliers and these premade objects of exchange are then sold to customers. However, services are provided by the technical wholesaler and are based on their service process that is dependent on the different processes, resources and intangible capital within the company.

Interviewee 4: "One key difference lies in the production of services which is dependent on the company's intangible capital. Whereas in the case of a product, it is based on technical qualifications and physical properties."

Technical wholesale is traditionally very product-oriented, and the role of services was described as more complementary according to all of the interviewees. The interviewees saw services to be used in combination with products, but in some cases, services were considered as the determining factor, securing the whole deal that includes both products and services. However, according to the interviewees, in the technical wholesale business, it was seen as less likely that the customer would only purchase services from a wholesaler as the industry is very product-centric. Based on these views, in technical wholesale service has its role as a complementary element that is somewhat connected to the available products.

Interviewee 2: "It is very common for technical wholesale that first you have to sell a product before you can sell a service. Rarely, a customer would only purchase services from us; instead they go hand in hand."

Interviewee 4: "Services are primarily aimed at supporting customer loyalty and improving customer experience. With the combination of products and services, we are able to provide our customers with the best overall solution, thus creating such customer value that strengthens our position as the best choice in the market."

Interviewee 1: "In our technical wholesale business, the significance of services is definite as the ability to provide our customers with personalised and flexible services is often such matter that determines the whole deal."

Services were seen among respondents as beneficial to both parties as they provide added value to the customers, but also contribute positively to the sales and profitability of the company. Services can be seen as a distinguishing factor in an otherwise highly product-centric industry. It is common in the technical wholesale industry that the products and technical solutions are very similar and even identical, as all technical wholesalers sell products from the same suppliers that have significant market shares. Thus, it was recognised by the interviewees that with services a technical wholesaler is able to improve their position and differentiate themselves among the competitors in an otherwise highly competitive industry.

Interviewee 2: "Our company has an extensive range of products, but in order for the customer to concentrate most of their purchases on one supplier, there is a need to be able to offer services. By doing so, it is possible for us to provide our customer with the best possible customer value that consists of combination products and services."

Interviewee 4: "Services are primarily aimed at supporting customer loyalty and improving customer experience. With the combination of products and services, we are able to provide our customers with the best overall solution, thus creating such customer value that strengthens our position as the best choice in the market."

Interviewee 2: "Services can also help to moderate price monitoring. As customers are only willing to pay according to the value they evaluate gaining from the offered products and solutions, it can affect the profit margins negatively. However, by providing high-quality services we can generate such value for the customer that justifies higher prices in the eyes of the customer. Thus, services also add value from the perspective of the company."

The interviewees recognised the changing role of services in the traditionally product-centric technical wholesale sector. This change was described by the interviewees as being caused by the increased competition in the market and from the development of the customers business and in their needs. Services were seen as an additional tool for increasing revenue and also as a way of securing essential customers and deals.

Moreover, services are also recognized as a way to react to the changing need of the customers. Traditionally most of the trade has been made with products, but the interviewees noted that the current development in their customers' businesses is also affecting technical wholesale. As customers are developing their businesses, these developments and trends are reflected by changes in customer needs, and thus in the solutions the customers desire and need from the wholesalers.

Interviewee 4: "Currently the role of services is changing in the technical wholesale sector. Traditionally, the industry has been heavily focused on products and technical solutions, but at the moment the market is developing in a direction where we need to provide our customers with services that make their business easier and more efficient so that they can concentrate on their core competences."

Interviewee 2: "Traditionally our expertise has been very concentrated around the physical products that we sell, but it can be recognized that this is starting to change and we also have to expand our business to services."

Interviewee 1: "With services we are able to increase and maximise cooperation with our customers."

In general, services were strongly connected to adding value to the customer relation according to the interviewees. Services are understood as immaterial value-adding elements that are part of the business. However, what is important to note is that despite the immaterial nature, they do have concrete benefits and should also create income for the company.

Interviewee 1: "Service is strongly connected into creating added value and securing customer relations."

Interviewee 2: "Service is based on the added value it brings to the company. Also, as such, a service should always be something with a price as opposed to being a free favour."

Interviewee 3: "Services are always immaterial and theory-based objects of exchange."

Interviewee 4: "Service is an immaterial commodity that is provided for the customer as opposed to physical products."

The central difference between products and services was stated as the immaterial nature, but this characteristic was seen translating to some other aspects of a business. For example, one such aspect discussed by the interviewees was pricing and the relationship between added value and additional income.

Interviewee 3: "Services are more difficult to sell compared to products. Services are much larger components than products, which are also very often connected to a product."

Interviewee 2: "I would say that a service is always more unknown for the customer than the products they are buying. This is very much caused by the immaterial nature of services as they are not concrete such as products are."

Interviewee 4: "One key difference lies in the production of services which is dependent on the company's intangible capital. Whereas in the case of a product, it is based on technical qualifications and physical properties."

Interviewee 4: "One central difference in products and services in the technical wholesale sector is the difference of the supply chain."

The role of services in traditionally product-centric technical wholesale business was described as necessary by the interviewees. Generally speaking, services are viewed as complementary compared to products, but despite this complementary role services are also regarded as necessities. Services are described as the additional component in a deal that is otherwise product related, and with services, a company is able to differentiate their offering and react to different customer needs. According to the interviewees, with services, a company is also able to further develop their cooperation with customers.

Interviewee 1: "In technical B2B wholesale business, the significance of services is definite. The ability to provide our customers with personalised and flexible services is often such matter that it determines the whole deal."

Interviewee 1: "The deals or contracts that are negotiated with our customers are not always won by simply the prices of the products being sold, but often by the additional service that can be provided. For example, additional logistical service can be a determinative factor."

Interviewee 2: "The role of services is complementary as they are aimed towards committing the customer to do business with us for a longer period. However, products are the first thing and services come after them as a complementary component of the deal."

Interviewee 4: "Despite their the complementary role, the importance of services in technical wholesale is significant. With services, we are able to increase and maximise cooperation with our customers."

The product-centric nature of B2B technical wholesale was also discussed during the interviews, as the interviewees recognised that their product offering can be enhanced by combining it with value-adding services that work together with the products. For technical wholesaler, expanding the product offering with the addition of services can be

a way to differentiate themselves from competitors who are dealing with similar or completely identical products from same suppliers, which is very typical in the wholesale business. In short, services complement the broad product range and offer a way to differentiate from other actors in the market.

Interviewee 2: "Our company has an extensive range of products, but in order for the customer to concentrate most of their purchases on one supplier, there is a need to be able to offer services. By doing so, it is possible for us to provide our customer with the best possible customer value that consists of combination products and services."

Interviewee 4: "Currently the role of services is changing in the technical wholesale sector. Traditionally, the industry has been heavily focused on products and technical solutions, but at the moment the market is developing in a direction where we need to provide our customers with services that make their business easier and more efficient so that they can concentrate on their core competences."

Interviewee 4 "Services are primarily aimed at supporting customer loyalty and improving customer experience. With the combination of products and services, we are able to provide our customers with the best overall solution, thus creating such customer value that strengthens our position as the best choice in the market."

Interviewee 4 "Services can also help to moderate price monitoring. As customers are only willing to pay according to the value, they evaluate gaining from the offered products and solutions it can affect the profit margins negatively. However, by providing high-quality services we can generate such value for the customer that justifies higher prices in the eyes of the customer. Thus services also add value from the perspective of the company."

7.2. Methods for productising services

This next section reports on how a service can be productized and what are the basic steps that can be found in service productisation process. This will bring answers to the second research question of the study of how a service can be productized. To get a better idea of the underlying prerequisites that are motivating companies to productize their services, the interviewees were first asked about how they see the structure of services. As a result,

the interviewees gave descriptions of services by the perceived structure, required resources and of the different processes that are included.

The interviewees were also asked to describe in more detail what are the different components that do service and what components of a service they see as crucial in creating successful services. In general, service was described as constructing from the different stakeholders and processes within the company. According to the interviewees, a service is the end-result of a process and the cooperation of different stakeholders. Moreover, the interviewees generally saw that this process chain should be a uniform entity towards the customer. Most importantly, all of the interviewees shared the view that there are multiple stakeholders and different processes involved when a service is provided to a customer. When it comes to the offering, services can function as separate objects or they can be connected to a product or several products within the offering.

Interviewee 1: "Service consists of the service process, customer encounter and from the measurement of these two processes together. Additionally, a product is also often associated with the service process."

Interviewee 2: "From a company's perspective, a service consists of different parts, but from the customer's point of view, a service should always be one clear entity."

Interviewee 4: "Service is constructed from the different stakeholders within the company that are necessary for producing the service."

From the different service components discussed, the service process was identified as a central part of a service. According to the interviewees, the service process is executed by the company with the resources and skill that are invested in the service or are otherwise available. The interviewees also recognised that this process and very much the whole service is highly depended on the outcome and quality of this process and the different resources and stakeholders connected to it.

Interviewee 4: "The service process must be clearly described so that it can be supported by the required systems and solutions. Without a clear service process, the company's staff is not able to execute the service process with high quality and the service will not be uniform."

During the interviews, the service process emerged as a very central and critical part of a service as the interviewees highlighted the dependency between resources and the success of the overall service process. In general, it was recognized that services require different internal and external stakeholders, intangible capital, skills, resources and commitment to function.

Interviewee 1: "In short, services require the necessary professional skills, human resources, enterprise commitment and management support."

Interviewee 2: "Services require intangible capital from the company, which consists of staff competence, service expertise and additional know-how that must be reflected at every organisational level that is connected to the service process."

Interviewee 3: "Services require multi-stakeholder involvement in both service design and production. In technical wholesale, these stakeholders include sales organisation, eCommerce and IT experts, logistics experts, product managers and logistics development resources."

After going through the composition and the necessary prerequisites of services, the interviewees were asked to describe the key challenges related to services and service business within the technical wholesale sector. The preliminary questions about the composition and prerequisites acted as a basis for this discussion as the interviewees could reflect upon the earlier discussion. One of these recognised challenges was the product-centric operating model that has traditionally been at the centre of technical wholesale. The interviewees saw that their industry is mainly focused and build upon physical products that are different in nature compared to services. This product-oriented approach was seen reflecting on the company's dominant business logic, which for example affected the sales organisations alignment and capabilities.

Interviewee 2: "This industry is highly product-oriented, and therefore the traditional operating model may not be sufficiently refined for service sales. Thus, a company's operating model must be developed accordingly to fit the service business to support service business alongside product sales."

Interviewee 4: "One big challenge is that our sales organisation is traditionally very product-oriented. Thus, without adequate training, a product-oriented sales organisation will not be able to sell services efficiently."

In addition to the challenges that are originating from the product-centric business logic, services were characterized as being harder to sell than physical products. One interviewee described this as a two-fold problem as it could originate from the inability to provide better service than a competitor or from the fact that the company is unable to effectively communicate the contents and value of service to the customer.

Interviewee 2: ‘‘Selling services is one of the key challenges. In some cases, this is because the customer already has a service provider that produces the same services that we are trying to sell to the customer. In such a situation, it is challenging to pull out the competitor and make the customer switch a service provider. Moreover, in some cases, the customer may not recognise the value in service and assumes that the service is free. In such cases, providing the service to the customer is no longer profitable for the company.’’

The difficulties related to the sales of services was further described as a challenge that is reflecting on the different way services create value for the customer. According to the interviewees, communicating the value of a service is understood as more complicated than it is for manufactured goods, and this makes it challenging to offer services to customers in a profitable way. In addition to the external challenges, the ambiguity of service can also affect negatively on the internal processes related to the services. The intangible nature of services can be seen affecting both externally and internally with different consequences.

Interviewee 2: ‘‘Technical wholesale sector is characterized with a way of thinking that does not recognise the value and the benefits of services and integrate this with prices but rather focuses solely on the products and the final price of the offer. Thus, customers may compare different offers, even if the offers are not directly comparable, as they might contain the same products but with different service solutions.’’

Interviewee 4: ‘‘The description of the different services is often challenging, and the services offered are often not sufficiently clear for the customer or even for the company itself. Thus, services must be described clearly to both internal stakeholders and customers.’’

After going through services and services business in more detail, the interviewees were asked how they see these challenges and what ways there are to overcome service-related obstacles. This laid the foundation for service productisation activities as these comments

gave insight on how the particular service-related challenges could be mitigated and overcome in a company. Some of the interviewees used the term productisation when talking about how services could be made more better in their organisation.

Interviewee 2: ‘I believe that clear productized service products can deliver better results. The service must consist of clear individual components that the customer can combine according to their needs to construct a combination that serves them best. In this way, the customer can make their calculations that can be compared with the potential savings that can be achieved.’

Interviewee 2: ‘Through productisation, services are made into different modules with explicit content. For an individual service, this means that the service has clear areas of what it contains. The customer can thus be provided with the most suitable unit by combining the necessary modules.’

The value of service was recognized as one of the problematic areas influencing how lucrative and useful a customer sees the provided services. According to the interviewees, this very same problem was also connected to the pricing of services, as the perceived value is a tradeoff of money. Thus, pricing was recognized as a factor that affects both the service provider and the customer, as the company must also be able to put a price on their services that is visibly connected to the perceived value within the service.

Interviewee 2: ‘Although the customer is the one that determines the value of a service and willingness to pay for it, the company still has to strive to properly define and price the services it produces.’

Interviewee 4: ‘The customer should be made to understand the value of the service provided. With the help of good sales material, we could better communicate the particular features and benefits of our service to the customer.’

In addition to the challenges encountered in pricing, it was also seen that the sales personnel must also be able to sell the service in a required manner that might be different from a traditional product sales process. This organisational challenge was also discussed earlier during the interviews as services sales, and traditional product sales were compared.

Interviewee 1: ‘‘The sales of services also require certain know-how from the company, because the services must be sold to the customer in such a way that their embedded value and importance can be communicated to the customer in a comprehensible manner.’’

Interviewee 2: ‘‘The price of the product should always be treated as the price of the product and the price of the service as the price of the service. This makes it possible to communicate a clear price image to the customer by means of a price list. In this way, the customer can make their comparisons and calculations that they can combine with the savings and other benefits that can potentially be achieved.’’

Following the discussion about the challenges related to services and service business, the interviewees were asked to describe the attributes of a good service that they would see as successful in technical wholesale sector. First of all, the interviewees acknowledged that the success of a service is dependent on how successful it is in the eyes of the customer, but also related on how it contributes to the company’s business objectives. This topic also proved as containing both the external and internal perspectives that were dependent on the internal service process, knowledge and resources but also on how the company could communicate towards the customer.

Interviewee 1: ‘‘For a service to be successful in the market it must be clearly communicated, measurable and financially profitable.’’

Interviewee 1: ‘‘Additionally, a service must also be productive by itself, which requires efficiency and profitability from the service process.’’

Interviewee 2: ‘‘From the customer’s point of view, a good service is a distinct package that is beneficial to them businesswise.’’

First and foremost, the interviewees saw that the concrete benefits that a good service creates are merely monetary, but other benefits can also be recognised. These were, for example, positive development of customer relationships, which in turn secures sales in the future.

Interviewee 2: ‘‘From a company’s point of view, a good service secures the customer for a longer period. In this way, competition can be transferred from the price of the products to the services and the added benefit they offer.’’

Interviewee 4: ‘‘A good service promotes positive customer experience and at the same time improves customer satisfaction and loyalty, thus supporting a future purchase decision. Additionally, a good service is carefully controlled, and systematically conceptualized package that also has required resources and its productivity is managed.’’

Additionally, the interviewees also recognised service quality as an attribute that can make a service good or successful. According to the interviewees, service quality was connected to the internal service process and on how the service provider is able to produce the developed service and how effectively the promised benefits are realized to the customer. Additionally, as the importance of service quality was recognised internally, the interviewees stated that the service process and each service-related task must be designed, developed and performed with an adequate level of quality. Accordingly, true service quality is formed during each of the individual tasks related to producing the service for the customer.

Interviewee 4: ‘‘The quality of service is influenced by the service concept, which must be a clearly constructed for the various stakeholders, both external and internal. At the same time, high-quality service is always sufficiently standardised, but simultaneously allows a degree of customisation to meet different customer needs.’’

Interviewees also recognised that service quality must be consistent the entire length of the service, which includes all service-related processes and sub-processes. The potential variation in the length of service encounters was also discussed, as services can be either short exchanges or longer encounters. Thus, as service encounters can endure a long period of time, this requires commitment and stable performance from the service provider.

Interviewee 2: ‘‘When a service is sold to a customer, the beginning, upkeep and termination of the service process are all processes that should be performed with high quality to ensure value for the customer. The length of the overall service process can, of course, vary from one encounter to a multi-year service product.’’

7.3. Integrating customer into the productisation process

This section discusses the views the interviewees had on customer value and on how customers can be integrated as part of the service productisation process. Services cover

a large section of different stakeholders, both internal and external and customers are one of these external stakeholders. Service marketing theory has pointed out the importance of customer-orientation, and this has also been discussed in relation to service productisation. The framework of this thesis is also based on a two-fold approach on service productisation that includes the customers as one crucial source that must be incorporated into the service productisation process.

Based on these interviews within the case company, the interviewees described these different service-related stakeholders to include sales personnel and back-office support functions, including IT and logistics. Additionally, in the technical wholesale sector, the different product suppliers or external service providers are also recognised as essential stakeholders, when it comes to producing services for the end-customers.

Interviewee 2: "The different stakeholders include the customer, sales personnel, company's internal and external support functions such as logistics and IT. These stakeholders may also include manufacturers and suppliers of products in the technical wholesale sector."

Additionally, one of the most important external stakeholders was considered to be the customers, as they are the ones that the service is being provided to. This was because the customers and their business are seen as being very much in the centre of the service and customer actions dictates a large portion of the service content and its value. Customer information is one starting point for developing and productizing services as they are intended to solve customers' problems or offer other benefits for their business.

Interviewee 4: "The customer is the most important stakeholder in providing and selling services. A company needs to know their customer's world and their business to be able to develop their service offering accordingly. Other stakeholders include sales, purchasing, logistics, financial management, IT and the suppliers of sub-services or service related products."

When it came to the customer value within services, the interviewees were first asked to define and describe this term in more detail. Moreover, interviewees were also asked to give their views on how this relatively immaterial value concretises for the customer in consequence of the service process. Customer value in services was defined in different ways, but with some unifying resemblances and overall, each interviewee shared similar views about this concept. In general, customer value was described by the interviewees

as something beneficial that the customer gains from using the provided service or services. These benefits could be financial, technical, emotional or connected to intangible capital. More precisely, in the technical wholesale business, customer value can also be translated as an additional margin that can be gained from a deal.

Interviewee 1: "Customer value includes financial value, technical value, i.e. intangible capital related to professional skills, in addition to these customer value can be associated with emotional value that is related to customer experience and marketing brand value."

Interviewee 2: "In the field of technical wholesale, 'customer value' translates to the additional margin gained. This margin is embedded either on the product the customer is willing to pay or in the additional service. In short, 'customer value' means that from the customer's point of view, the company has provided something additional and beneficial for their own business."

As a concept, customer value is relatively abstract, and it can translate into different components depending on the customer. Thus, one important aspect of customer value is the ability to recognise what is the more concrete evidence on customer value, as these can offer a more comprehensible way to evaluate customer value and its creation. According to the interviewees, customer value can concretise for the customer only as cost savings. Moreover, the cost-savings is created by the service that is provided to the customer, which in some way, helps the customer to do their business more effective and profitable. According to the interviewees, this can be the result of increased efficiency that is gained through better use of their own resources or additional resources from the service.

Interviewee 1: "The most visible part of customer value is the effect on the customer's overall savings. Thus, financial advantages are the most tangible value that the customer can get from a service."

Interviewee 2: "In the end, customer value concretises as some form of cost-savings. Thus, the customer can gain more value either through lowered expenses or additional income. Simplified, a customer benefits more than they have paid for the service, or the customer gets better use of their resources or is able to better make use of a product through a service."

Interviewee 4: ‘‘With a good service that has real value to the customer, they are able to focus on their main business, allowing the customer more time to run their own business, thus freeing the customer’s resources and improving efficiency.’’

The way customer value is formed through services is different compared to products as the value of a manufactured good is already embedded into the physical features of the product. However, when it comes to services, the customer might not gain the full benefits immediately, instead these are gained along the service process that can vary in length. For example, one such example was logistic services that can be either one-time or span a more extended project. One interviewee also recognised this aspect of the customer value of services during the interviews and brought up how some services can be tied to extended projects, thus forming the real value along this long timeline.

Interviewee 1: ‘‘In some cases, the value in services will be realized immediately, or in some cases, it will take longer if the service is for example tied to a long project. As an example, logistics services can respond to unexpected needs or to a long-term project-like operating model.’’

In addition to the value gained by the customer, services are also beneficial for the service providers. In short, a service must be beneficial for the customers, but additionally, it must create added value for the service provider as well. The interviewees were asked how the value in services is reflected towards the case company and what are some examples of this in the technical wholesale sector. First of all, the interviewees all agreed upon the fact that a service must somehow benefit the company commercially. According to the interviewees, this business value could be increased margins from additional services or from the fact that services increase customer satisfaction, and thus secure longer customer relationships.

Interviewee 1: ‘‘The price level of products in the technical wholesale sector is consistent. However, services are one way for both the company and customers to achieve additional benefits.’’

Interviewee 2: ‘‘The value of a service for the company is, of course, related to the fact that the service must bring the additional margin to the business. Good and efficient service is aimed towards improving the profit margin. Additionally, good service also keeps the customer satisfied and thus improving and fortifying the customer relationship.’’

Customers are an external stakeholder and as such their role in the internal service processes is different compared to internal stakeholders. However, customers' role is often discussed in service marketing theory as part of the customer-related concept such as service-dominant logic. Thus, the interviewees were asked how they see the customer's role reflecting to the sales processes or service development processes within the case company. Generally, all of the interviewees did recognise that the customer does have an essential role in services that also affects the organisational activities within the company. One central role that was discussed was the customers' role in defining the desired service contents. According to the interviewees, customers are in an important role when it comes to the contents of the service, as their desires much determine what should be the value within a service.

Interviewee 1: "The customer plays a big role in both selling and developing services. Initially, when a company starts designing and developing a service, the customer must be involved in this process to identify the customer's real needs. In principle, there should be no services that customers do not find useful."

Interviewee 2: "One of the key roles of the customer in the service business is to define and interpret the true value and quality of a provided service."

Interviewee 4: "In their role the customer defines their needs and desires, as well as their capabilities. Therefore, in this context, the role of the customer is significant, as all these factors are central to the company's efforts towards providing good services to its customers."

This central role in defining the contents and value of service makes customers valuable resources for the company. Customers can provide such information that can be utilised during service development activities within the organisation. Thus, it is important for the company to be able to utilise this resource in an effective manner. The interviewees were asked about how customers can be integrated into internal processes.

Interviewee 4: "If the customer is closely involved in the service development process, it is possible to better understand the real background of the customer's needs and possibly even focus the service to be developed based on the underlying customer needs."

Interviewee 1: "If the service has been first piloted with a certain customer and then further developed based on the experience gained, we can get testimony from the actual benefits of the service and its real value."

Interviewee 3: "The customer may be involved either in the development of the service or at the time the service is produced, and feedback is being collected. This customer feedback can be used to build references that sales can use to sell the service to similar customers and customer needs."

Interviewee 4: "Close contact between the customer and the service provider plays a key role in successfully identifying customer needs. Thus, the service business requires much cooperation between the customer and the company."

The importance of these customer needs in relation to the contents of services was further discussed with the interviewees. According to the interviewees, customer needs can impact significantly on the actual content of a service, as it was also stated that this has a direct impact on how well the service will be received in the market. The larger the business value a customer has for the service provider, the more likely it is for the organisation to include these customer needs into the service. However, customer needs are also evaluated by the organisation based on the business strategy and set objectives. Accordingly, a service that has no real benefits in the eyes of the customer will likely fail in the market. This same fate can happen for a service that has no real business value for the service provider.

Interviewee 1: "Developing services without any contact with the customer would be very difficult and unlikely to achieve a successful outcome compared to a situation where the customer is involved in this process."

Interviewee 1: "First, when the service is being designed and developed, the customer has a tremendous influence. However, after the customer needs have been collected the initial service content is then evaluated from a business perspective."

Interviewee 3: "Some services have been made directly to meet the needs of certain customers and the customer has been an essential part of developing the service. In general, the larger the customer is, the greater their importance is in service development."

Interviewee 4: ‘‘The customer has the wallet and therefore if the customer is not satisfied and does not see the services beneficial, then there is no business around these offered services.’’

In addition to these shared views on customer’s role in the contents of the service offering, one interviewee also pointed out that a company cannot solely rely on customer information. Organisation also needs the capabilities to create new innovations that the customers have not yet anticipated. These can be aimed, for example, according to the market development and future customer needs. In short, customers might not always know precisely what are the best options or solutions for them, and this is where innovation can make a difference.

Interviewee 2: ‘‘While the role of the customer is clearly at the heart of the value and quality of service, it is also important to note that the technical wholesaler must also proactively provide its new services, solutions and products to its customers.’’

Organisations can recognise customer needs as necessary in their service productisation process or other service development related activities. However, organisations must also be able to identify these needs adequately, as only then this information can be analysed and further utilised internally. The interviewees were asked about how an organisation like a technical wholesaler is able to perform this. According to the interviewees, this requires an active role in the organisation. An organisation must be active towards their customers and gather information by engaging customer with surveys, meetings and other such activities. Additionally, organisations can use piloting and testing as a method to gain valuable insight into customers’ expectations and needs. Moreover, customer-oriented approaches, such as service design and value co-creation were also suggested during the interviews.

Interviewee 1: ‘‘Identifying customer need requires active participation from the company by asking and surveying the different customers. In addition, testing different services and simulating the service are also beneficial ways for gaining insight about customer needs.’’

Interviewee 2: ‘‘Another important way of interpreting customer needs and transforming them into services is service design and customer involvement or co-creation in service development.’’

Interviewee 2: ‘‘Collaboration between the customer and the company can be achieved, for example, through joint working groups and organised meetings, which are used to build a common approach between the customer and the company. Through these activities, a customer-oriented service solution can be designed and developed.’’

Interviewee 4: ‘‘In our business customer information can be collected by using customer interactions such as customer surveys, customer meetings and other such joint activities.’’

Interviewee 4: ‘‘Other important customer-oriented measures that can be utilised with services are service design and deeper customer involvement in service development through value co-creation.’’

Organisations can also take a more pro-active approach to customer orientation, as the customer needs can be analysed with the help of existing data that the organisation might have collected more actively or accumulated passively. According to one interviewee, this kind of approach can prove beneficial as it can lead to the development of innovative new services.

Interviewee 1: ‘‘Most of the services we offer have come from the customer's stated needs, but for us, a more systematic approach towards the development of services should be based on the tremendous amount of customer data we had previously collected. This would mean that we could provide services pro-actively, thus creating completely new services with a competitive edge.’’

7.4. Summary of the interview results

Table 3 summarises the findings from the empirical data. The findings are divided according to the research questions that also follow the main themes of the interview. The organisational motives for service productisation revolved around the intangible nature of services that are also the most evident difference between services and manufactured goods. In short, the motives included improvement of service-related efficiency, clarification of communication, and improving the transparency of the value of a provided service.

Table 4 Summary of the empirical data from the interviews.

Organisational motives for service productisation	Methods for productising a service	Ways of integrating customers into the service productisation process
To mitigate challenges that are caused by the immaterial nature of services	Developing a clearly described service process that is standardised	In their role, customers define and interpret the true value and quality of a provided service
To improve efficiency in service delivery and sales	Creating a systematically conceptualised service concept	Customers can provide valuable information that can be collected with surveys and during customer meetings
To clarify and tangibilise communication towards customers	Assessing organisational resources and capabilities	Customer orientation through service design and co-creation of value
To improve the transparency of value within a service	Providing clear communication in every customer encounter	Customers can be involved in piloting and testing of a service
	Ensuring adequate and consistent service quality throughout the service	
	Creating tools for reporting and measurement of the service	

The methods that were suggested for overcoming the challenges related to services were discussed as productisation methods. These included development of the service concept, process and evaluation of the service system, i.e. the organisational resources and capabilities. Additionally, these methods also included tools for reporting and measurement and attention towards consistent service quality.

Customer-orientation as part of service productisation emerged from the customer's central role as the interpreter of true value of a service. Thus, customers were seen as important stakeholders for the service provider. The ways in which customers could be integrated into the internal service processes of the organisation included customer

surveys and organised meetings. Additionally, customers could also be engaged through customer-oriented development methods such as service design or by co-creational approaches to value creation. To summarise, the integration of customers to the internal processes requires active participation from the organisation that should be focused on collecting customer information.

8. FINDINGS AND CONCLUSIONS

In this thesis, service productisation was approached from a theoretical standpoint, which was supplemented with an empirical study. The objectives of the thesis were to provide clarification to the concept and practical aspects of service productisation in the B2B sector. These objectives were approached by studying the organisational motives behind productisation, reviewing existing service marketing theory in order to form a more clarified understanding of service productisation and also by focusing on the customer-oriented elements in service productisation. The findings and conclusions of this study will be presented in this chapter.

This study brought together the theory surrounding the concept of service productisation and supplements this with empirical research from a case company operating in the technical wholesale business. In this thesis, the origins, characteristics and methods along with the potential benefits of service productisation, were discussed and analysed. Additionally, the theories related to the productisation of services were supplemented with the customer-oriented theories of service-dominant logic. Based on this theoretical analysis, a customer-oriented framework for service productisation was constructed. This framework summarises the central elements for customer-oriented productisation of services and presents a two-fold approach that highlights the need for both external and internal tasks.

The empirical study describes organisational motives for service productisation, methods for productising a service and the perceived ways of integrating customers into the service productisation process in the case company. It offers insights on how to the theoretical and managerial literature on service productisation is understood and appears in practice in the traditionally product-centric technical wholesale business. The study confirmed the arguments related to the operational and commercial challenges that are resulting from the intangible nature of service compared to concrete manufactured products. Additionally, the exact methods of how these challenges could be overcome through service productisation were also discussed. These methods were concentrated on standardising, systematising and clarifying the service in order to make it more product-like and concrete, both externally and internally. Thus, service productisation can be seen as a way for an organisation to address both internal efficiency and also the effectiveness of external communication and level of service quality in general.

From a theoretical standpoint, service productisation can be seen as a development method for service innovations that underlines the importance of intra-organizational and customer-oriented knowledge sharing. More precisely, the service productisation process is focused on the elements of the target service, which are then modified and developed in order to gain increased operational efficiency, service quality and customer value. In this thesis, service productisation is defined as a service development approach that addresses the operational and commercial challenges created by the abstract and intangible nature of services. This consists of a comprehensive development process that focuses on the service offering, service processes and professional expertise.

In practice, service productisation employs various techniques, ranging from systematisation, standardisation, tangibilisation, knowledge sharing and codification to process mapping and co-creational activities. These are described in the suggested framework as individual tasks that together contribute to the formation of a productized service. Moreover, all of these tasks contain different methods that are employed in completing the task during service productisation process. These methods help to give a more practical approach to the overall process of service productisation and complement the framework. However, for organisations to use this development tool in practice, they need to be able to define the productisation process, productized service and also set measurable objectives for the development process.

To conclude, service productisation is a development tool that can help to solve the challenges related to the intangible nature of service. Through service productisation, a service can be made more product-like, which can provide both commercial and organisational benefits. The outcome of this process is not only depended on the performed organisational tasks but also on the level of customer-orientation as part of the whole process. Thus, productized service should be based on customer understanding that can be only gained by actively engaging customers and collecting customer information.

First of all, the single case study approach of this thesis limited the study as the focus was on a single company that operated within a specific business environment. Thus, as this thesis studied the customer-centric service productisation process within the technical wholesale sector the results may not fully translate to other business areas.

Additionally, the interview population of the empirical study was relatively small, which can create further limitations for the study. However, the selected interviewees can be considered to be a highly reliable source of information because of their long expertise in

the field of technical wholesale and from their involvement with customers and other stakeholders.

Service productisation is a concept that is interlinked with several different theories, and it is applicable for different types of services within different areas of service business. Thus, the possibilities for further research concerning service productisation are abundant. The service productization theory and the proposed framework in this thesis emphasise the perspective of customers. However, the role and involvement of employees could be addressed in more detail in future research. Additionally, it would be beneficial to verify the findings and propositions of this thesis using larger samples and through quantitative methods. Further research could also be aimed towards expanding the focus on multiple different industries. In addition to the industry specifications, targeting different kinds of services could also be done in future research.

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