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SERVICE PARADOX IN A PRODUCT ORIENTED COMPANY: A SERVICE BUSINESS DEVELOPMENT CASE

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ABSTRACT

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The master´s thesis had three aims; to develop a service portfolio, to support the management of services through the developed portfolio, and evaluate effects of service differentiation strategy on the future selection of services. The product oriented case company in service paradox is Hilti (Suomi) Oy, which is entering systematic service management era, supported by the late strategic change. Low return on service business investments is referred as service paradox.

The project was carried out as a case study, where the primary information source was twenty-one conducted interviews. The theory part focuses on marketing logics, service strategies, and categorization of services. The empirical part contributes in solving the aim related research questions.

As a result of the case study a service portfolio was created, next further steps in service management were suggested, and the effect on selection of services by service differentiation strategy was evaluated. The main goal of creating service portfolio contributes to systematic management of services, which required revising at the case company.

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Työllä oli kolme tavoitetta; luoda palveluportfolio, tukea palveluiden hallintaa luodulla palveluportfoliolla, ja arvioida erilaistavan palvelustrategian vaikutuksia tulevaisuuden palvelutarjoomaan. Kohdeyritys on palveluparadoksissa oleva tuoteorientoitunut Hilti (Suomi) Oy, joka on siirtymässä palveluiden systemaattiseen hallintaan, jota tuetaan viimeaikaisella strategisella muutoksella. Vähäistä palveluliiketoimintaan sijoitetun pääoman tuottoa kutsutaan palveluparadoksiksi.

Työ toteutettiin tapaustutkimuksena, jossa pääasiallisena tiedonlähteenä olivat kaksikymmentäyksi haastattelua. Teoreettisessa osiossa keskitytään markkinoinnin logiikkoihin, palvelustrategioihin, ja palveluiden luokitteluihin. Empiirisessä osiossa ratkaistaan tavoitteisiin liittyvät tutkimuskysymykset.

Tapaustutkimuksen tuloksena luotiin palveluportfolio, ehdotettiin seuraavia askeleita palveluiden hallintaan, sekä arvioitiin erilaistavan palvelustrategian vaikutusta tulevaisuuden palvelutarjoomaan. Päätavoitteena oli palveluportfolion luominen tukemaan systemaattista palveluiden hallintaa, joka kaipasi päivittämistä kohdeyrityksessä.

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Joensuu, 15 July 2014

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ABBREVIATIONS

ASP	After-sales service provider (strategy)
B2B	Business-to-business (trade between companies)
B2C	Business-to-consumer (trade between a company and a consumer)
CRM	Customer relationship management (principle)
CS	Customer service (strategy)
CSP	Customer support provider (strategy)
C-D	Customer-dominant (marketing logic)
DP	Development partner (strategy)
G-D	Goods-dominant (marketing logic)
HSE	Health, safety, and environment
HVAC	Heating, ventilation, and air conditioning (segment)
IB	Installed base (of products)
ICT	Information communications technology
KPI	Key performance indicator
MVE	Multi-vendor environment

NPD	New product design (process)
NSD	New service design (process)
OEM	Original equipment manufacturer
OP	Outsourcing partner (strategy)
PCB	Product-centric business
SaaS	Software as a Service
S-D	Service-dominant (marketing logic)
VOC	Voice of customer (internal, or external)

1 INTRODUCTION

Marketing paradigm has transformed in the past several decades from singular exchanges to a relational view, capable of surpassing market fluctuations and turbulence in more efficient manner. Traditionally companies in business-to-business markets have been focusing on developing their products to outperform their competition. Recently the paradigm has been changing, as customers have been more focused on the overall performance of their companies, rather than just concentrating on explicit transactions. This traditional, product-centric, exchange focused view is called goods-dominant logic of marketing. The paradigm change has opened multitude of possibilities, where the overall performance of a solution has become more important, than mere products. At the other end of the spectrum is service-centric, relationship focused view on marketing, called service-dominant logic of marketing. Providing a power tool, compared to providing promised uptime of a power tool is an example of transition from goods-dominant logic to service-dominant logic.

The possibilities of such change, as motives for transition to service-dominant logic are closer customer relationships, but also collaborative problem solving with the customers. The relational aspects in service business are potentially capable of creating sustainable competitive advantage, if carefully managed. Inherently, services bring longevity to business, thus service business can enable stabilization, or promote growth of a company. When the transition is poorly orchestrated, the situation can result in unfavorable situation for the company, called service paradox. In service paradox, the service business yield is not reasonable in comparison to the investments, or the yield can be even negative.

"If one assumes that the market is uninterested in the company´s history, that the company´s operations must reflect market requirements, and that the latter are subject to continuous change, attention naturally becomes focused on the future and the company´s role in a changed environment" (Gummesson 1991, p. 95).

The previous citation is about strategic approaches to a transition. In this thesis the focus is on constructing a service portfolio to support strategic differentiation of the product-oriented case company. In addition overall service management guidelines are provided, and the effects on the service portfolio of the strategic differentiation are assessed to avoid pitfalls in service business.

1.1 Background information

Master´s thesis topic is provided by Hilti (Suomi) Oy (as the case company), Finland´s country organization of Hilti group. The country organization in Finland have two specific business areas; *power tools and accessories*, and *fastening and protection*. These two business areas also reflect to the product-service offering. The group has initiated a strategic change, where one focal point is on service business development, implementation and differentiation through it. The case company currently has a large number of services provided and managed in unstructured manner. These two topics (strategic initiation, and managing services holistically) are the *motive* for this study. Organic growth in services, mainly from group direction due to centralization, and focusing on individual services has led to the current situation. *Research gap* in this study can be thus specified to management of service portfolio, developing such portfolio (categorization issue), and to future of strategic differentiation through services.

The study follows a linear-analytic structure of the report. The report starts with introduction chapter indicating the research problem and questions. Theory chapter (strategy, and service categorization related chapters) is followed by the methodology chapter (research method). Findings are presented, and conclusions are drawn from the collected data. (Yin 2009, pp. 152-153) The selected research method is *single case study*, as the case will be explained as is, in its own environment truthfully. The purpose of the study is to provide a holistic view on the topic under study, where multiple information sources are exploited (primary data from twenty-one interviews).

Connecting the motive, research gap, and the report structure results in a rigid frame for the study. This contributes to the overall quality of the report, experienced by the reader as *reliability* (where other researcher would end up with similar solution), validated continuously by theoretical and empirical fit to the context (Gummesson 1991, pp. 80-82). The frame also supports readability, and understandability of the report. Following this path provides interesting insights, analytical and critical findings, but also a vantage point in understanding the case, and its perimeter. Construction industry in the context of this study (service business development), per se, is a challenging environment as the product-service offering itself often has relatively narrow life span.

1.2 Research framework

As mentioned earlier, the management of great number of services is lagging behind although differentiation through services is seen as a strategic goal set by the group. The unstructured management of services cause loss of sight on the general view of service business per se, which on the other hand can result in loss of strategic focus, unless managed. The management of great number of unstructured services, and achieving the strategic differentiation goals in service business context is the *research problem*.

The main goal of this master´s thesis is to provide a clear categorization of services, *a service portfolio* (research question 1). The service portfolio contributions to the overall management of services is studied likewise (research question 2). In addition the effects of differentiation via service strategy on the selection of services is evaluated (research question 3). Suggestions are provided to promote long-term orientation of service business management at the case company. Hence the research questions are as follows:

1. *How to develop the management of current service portfolio?*

2. *How categorization of services promote the management of services?*

3. *How does the service business differentiation strategy affect the future selection of services?*

The case study thus focuses on development and management of service business, where the principal focus is on creating a service portfolio for the company´s internal use. The secondary objective on differentiation strategy affecting the future decisions regarding service portfolio addresses company´s internal goals, but also takes external environment into account. Thus the voice of current customer´s affect the shape of the selection of services which affects future goals. The construction industry per se is expanding its service business, where supporting services, such as tool repair service has dominated in the past (as in the two previously mentioned business areas of the case company). Product-oriented companies that provide services mainly as add-ins for their products, are in the brink of service-era, where well documented product-service packages, and standalone services provide even more value for the end-customer. The theoretical part is divided and limited in relation with the research questions (chapters related to strategy, and categorization of services) to a practical level. The empirical part focuses on the development of service business of the product-oriented, sales and marketing organization.

1.3 Research logic

The study focuses on service business development on strategic, operational, and functional levels at the case company. The research implementation process begins with extensive literature review, which continues with the familiarization on the gathered material for the study. The learning process continues throughout the research implementation both on empirical and theoretical aspects. The mapping study provides a new perspective to the subjects under scrutiny with a qualitative study approach. The research setting is presented in Figure 1.

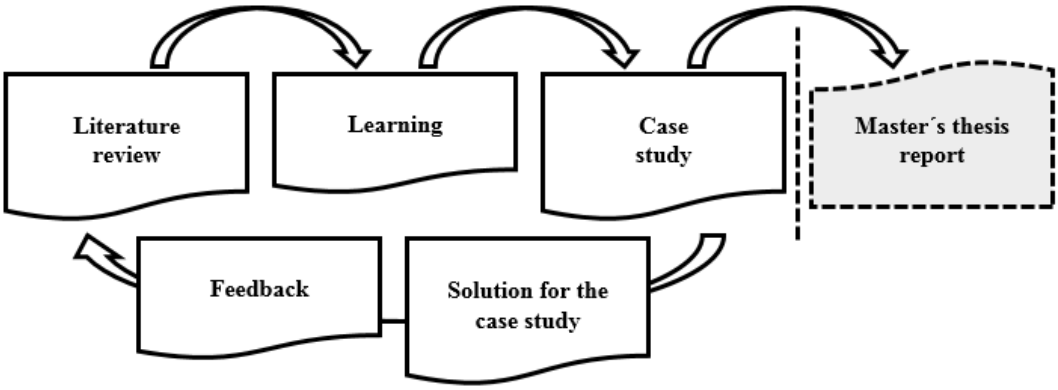

Figure 1. Research setting of the case study.

Literature review establishes the foundation for research success. Learning and case study implementation are iterative processes, with feedback loops. Case study results cannot often be generalized, but they provide exclusive and even surprising perspectives on the subject in its own context. The resolution of the case study is thus derived with abductive reasoning logic, where the main focus is on the material, and gathered information. The purpose is not to test hypotheses or theories, but rather move from single observations towards more general arguments. Research methodology related topics are further assessed in respective chapter.

The case company represents high product-orientation in sales, and in marketing, but in addition the distribution channels are vertically integrated. A product-oriented company often derives its competitive advantage through products, that are superior in some sense when comparison to competition. A successful service-oriented company derives its competitive advantage through product-service bundles, where services create primary demand. Often the strategic transitioning from product- to service-orientation is carefully managed. Thus the thesis subject is limited to the industry, the context of the company, and to service business development in the mentioned context.

The study is carried out between February and July of 2014. Initial secondary material (e.g. service concepts, and summary of services) were provided in the beginning of the study, whereas interviews were held in May-June timespan. The case study is constructed in the empirical part of the thesis, and the selected literature is

reviewed against it. Feedback, guidance, and directions for the research were provided by the company and university instructors.

1.4 Report structure and study framework

The report is divided in to four distinctive, but interconnected parts; introduction, theoretical part, methodology, and case study (with discussion and conclusion). Report structure and study framework is presented in Figure 2. The upper part represents the purpose of scientific research, the phenomena and its researching; methodology, theory and empirical data contributing to each other. The phenomena under study lies inside the triangle. Lower part of the figure has inputs and outputs for each of the stage of the research process, and it is constructed on the report structure. The output presents the result of each chapter, e.g. the result of chapters 2 and 3 is the theoretical framework.

Introduction as chapter 1 is followed by the theoretical part, which has a top-down principle; the theory is constituted to begin from greater holistic views, followed by topics in increasing details. Marketing logics are followed by service strategies in chapter 2. Categorization of services in chapter 3 provide a continuum from strategic level to operational, and to functional levels. Terminology such as *customer relationship*, *value*, *transition*, and *offering* provide passage between theoretical chapters, but also a passage from theoretical part to the empirical part (service business lexicon is presented in Appendix 1). Existing literature about the topics provide overview on the theoretical background. Theoretical framework used in this study will be announced at the end of theoretical part. The theoretical part contributes constructing a mental paradigm of the subject, but also contributes in solving the research problem through case study.

Methodology chapter 4 provides insights to scientific research, in this case to qualitative case study methodology. Methodology chapter contributes to the research setting, and is the logic continuum for the theoretical framework, proposes meth-

odological choices, data description and analysis method. Case study chapter 5 provides insights to the environment of the case, but also critically analyzes the topic, and provides solutions for the study. Discussion chapter 6 provides the reasoning of the case study, and presents answers to the research questions. Conclusions chapter 7 provides the conclusion, summary, contributions to study (theoretical and managerial) of the research.

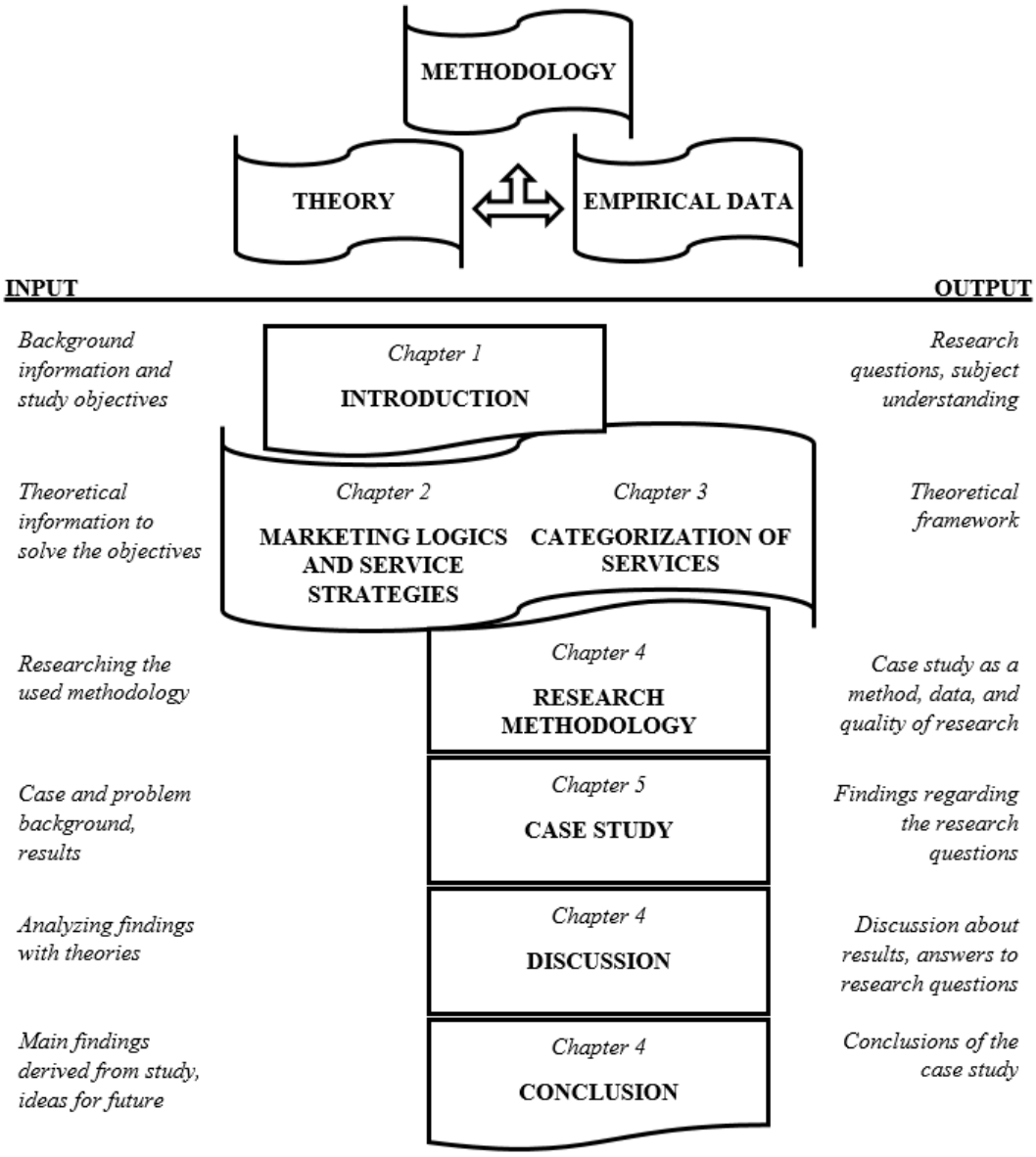

Figure 2. Report structure and study framework.

2 MARKETING LOGICS AND SERVICE STRATEGIES

The purpose of this chapter is to give the reader a broad view on marketing logics and service strategies, and how they can affect the transition to service business. The marketing logics, and service strategies have gain significant interest in the past decade. The logics describe how providers should perceive their service business regarding value realization. The converging perspectives on logics can have positive impact on a company in transition towards services, whereas service strategies provide a broader view on the pathway to follow. Service paradox is an unfavorable situation caused by a poor transition to service business. The fundamental question in this chapter is, how much does the provider interact with their customers in service provision?

2.1 Service business logics

Economies exchange more services than physical goods (Vargo & Lusch 2004, p. 10), suggesting the redirection of production and marketing strategies (Vargo & Lusch 2008, p. 254). The strategic change is towards the characteristics of services, where the logic from focusing on tangible outputs changes to services as processes (Vargo & Lusch 2008, p. 254). The core marketing perspectives establish the foundation for the new service- and value-centric logics. The logics provide an insight to the *servitization of manufacturing* (Ng et al. 2012, p. 417) where the focal point is not anymore the pure transactions (Kowalkowski 2010, p. 286). The logics have evolved in the past decade (see Heinonen, Strandvik & Voima 2013, p. 104; Vargo & Lusch 2004, p. 1), and they nurture the service and value doctrines from different angles (see Heinonen et al. 2010, p. 535; Vargo & Lusch 2008, p. 258). The three different logics are called *goods-dominant logic* (G-D), *service-dominant logic* (S-D), and *customer-dominant logic* (C-D). The logics stress on the concept on value; How the value emerges? Who experiences the value? When the value is experienced? The logics are a prelude to service business strategies as they tie resources,

explain aspects regarding value, and how companies structure their service operations. Figure 3 presents the three logics and the respective fundamental concepts about resources and value aspects, and their relation to each other.

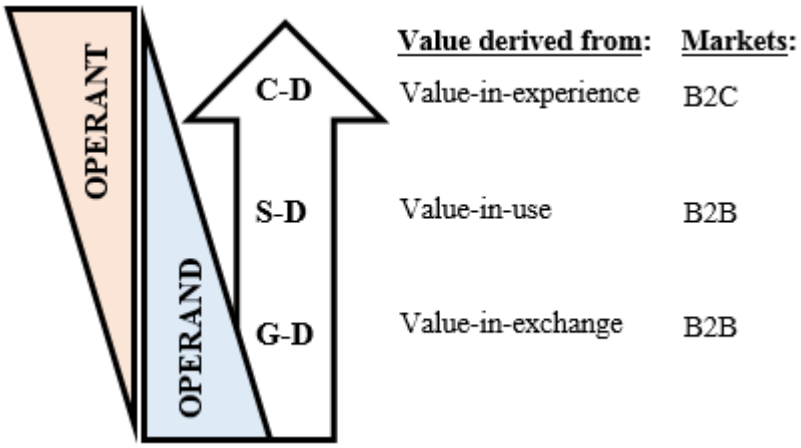

Figure 3. Resources and value aspects related to service business logics (adapted from Vargo & Lusch 2004, pp. 2-3; Vargo & Lusch 2008, p. 256; Heinonen et al. 2010, p. 533; Heinonen, Strandvik & Voima 2013, p. 113).

Operant resources are resources that are capable of purposefully acting on other resources (e.g. intangible resources, such as knowledge, skills, and competencies) (Vargo & Lusch 2004, p. 2; Vargo & Lusch 2008, p. 256). *Operand resources* are resources that require an operation or act to produce an effect (e.g. tangible, and natural resources). (Vargo & Lusch 2004, p.3; Vargo & Lusch 2008, p. 256). *Value-in-exchange;* in G-D logic the value is embedded in the goods and activities that can be separated from each other (Vargo & Lusch 2004, p. 11), and the value is experienced in the exchange process (Ng et al. 2012, p. 422). *Value-in-use;* in S-D logic tangible goods are considered as the vehicles for service provision, and the value of goods is based on value-in-use (determined by the customer) (Kowalkowski 2010, p. 286). *Value-in-experience;* in C-D logic the value creation is not always active process, value is experienced longitudinally and it accumulates over time (Heinonen, Strandvik & Voima 2013, p. 113).

Grönroos & Ravald (2011, p. 5) propose that *value creation* occurs when provider´s resources are used by a customer, who turns them into value. *Value* emerges thus

during usage of resources in the customer´s process of value creation, and often goods are *value enablers* (Grönroos & Ravald 2011, p. 8). Following example highlights the differences:

Driving a motorcycle (i.e. value enabler) with a friend to increase trust (i.e. value) between the friends

Value co-creation has a narrow timeframe, and causes confusion in terms of roles (i.e. provider, and customer roles). *Value co-creation* occurs when a customer uses provider´s resources to gain value. (Grönroos & Ravald 2011, pp. 6-7) Following example highlights the differences:

Letting your friend to drive your motorcycle (i.e. customer using provider´s resources) to increase trust (i.e. value) between the friends

From marketing perspective the provider (according to S-D logic) can only make value propositions, thus cannot directly influence the customer´s value creation process (Grönroos & Ravald 2011, p. 13). Value propositions should be constructed around value-creating attributes (contributing value-in-use, e.g. time saving) (Ng et al. 2012, p. 418). During interaction (between provider and customer) the proposition can be fulfilled (*value fulfilment*) via reciprocal interactions (Grönroos & Ravald 2011, p. 14). Thus frontline employees play a significant role in achieving high performance outcome (Neu & Brown 2005, p. 9; Ulaga & Loveland 2014, p. 118).

2.1.1 Goods-dominant logic

There are many distinctive elements in G-D logic, of which the most differentiating is the *service management* element, and its focus on the service itself (e.g. on blueprinting, and on *new service design* (NSD) process) as Heinonen et al. (2010, p. 534) argue. Service management element refers to a doctrine, where goods are distribution mechanisms for services and services, per se, are seen as add-ons to physical goods (Vargo & Lusch 2004, p. 9). The notion that services enhance goods in

G-D logic (Vargo & Lusch 2004, p. 2) explains the higher need for operand resources (as in Figure 3) (Edvardsson et al. 2011, p. 544), as value is realized in the exchange (Ng et al. 2012, p. 422). Thus value-in-exchange supports G-D logic, as the exchange process creates value (Vargo & Lusch 2008, p. 258).

In G-D logic the value is not linked to any context, and the value is realized in the exchange process (Ng et al. 2012, p. 422), or in later use, as Grönroos & Ravald (2011, p. 8) explain. Other four distinctive elements in G-D logic are; (1) *economic activity is seen as production, and selling of goods* (Vargo & Lusch 2004, p. 5), (2) *the produced value should be over competitor´s value* (Vargo & Lusch 2008, p. 258), (3) *transactions are in focus of sales* (Vargo & Lusch 2004, p. 5), and (4) *production efficiency and standardization are important* (Vargo & Lusch 2004, p. 5; Vargo & Lusch 2008, p. 258). The G-D logic thus focuses on the exchanges of resources (Ng et al. 2012, p. 427), where the exchanged resource needs an action on it to make it valuable (Kowalkowski 2010, p. 286). Services are seen as units of output or exchange in G-D logic (Vargo & Lusch 2008, p. 256), although their ubiquitous characteristics (e.g. heterogeneity) and quality control issues (Ojasalo & Ojasalo 2010, p. 26). The G-D logic thus is a provider-dominant logic, where value is initiated by the provider (Heinonen, Strandvik & Voima 2013, p. 105). Due to the narrow focus of G-D logic (e.g. transaction of services as add-ons) it has lost its ground to broader concepts (Vargo & Lusch 2008, p. 255), where value and transactional elements have more longevity to outperform G-D logic´s functionality (Edvardsson et al. 2011, p. 545).

2.1.2 Service-dominant logic

The distinction of being provider-dominant (as G-D logic) transforms into being customer-dominant in the S-D logic as the customer is involved in-depth in the elements (Edvardsson et al. 2011, p. 544). Main goal is to use skills and knowledge of the provider to enhance processes, and performance of another company (Jacob & Ulaga 2008, p. 248). S-D logic perceives operant resources (e.g. knowledge) as primary because they produce an effect (Vargo & Lusch 2004, p. 3), thus the value

is experienced in use (i.e. value-in-use) (Kowalkowski 2010, p. 286). As the tangible goods are not in the focus of S-D logic, the interactions between supplier and customer become important (Vargo & Lusch 2008, p. 255). Because of the interactions, relational elements are considered more in S-D than in G-D logic (Ulaga & Loveland 2014, p. 118). In S-D logic value is always co-created when provider and customer interact in the service provision process (Ng et al. 2012, p. 417; Vargo & Lusch 2004, p. 11). Vargo & Lusch (2004, p. 8) also argue that providing services is often complex, and the process takes more time than just exchanging goods.

In short, S-D logic is useful for understanding the system for value creation by services (Ng et al. 2012, p. 432). The longevity in the elements of S-D logic (compared to G-D logic) are expressed in the following four; (1) *core competences (i.e. operant resources) represent potential competitive advantage* (Kowalkowski 2010, p. 291; Vargo & Lusch 2004, p. 5), (2) *cultivating relationships to meet customer´s needs (proactive approach)* (Edvardsson et al. 2011, p. 544; Vargo & Lusch 2004, p. 5), (3) *value is co-created* (Vargo & Lusch 2008, p. 258; Vega-Vazquez, Revilla-Camacho & Cossío-Silva 2013, p. 1946), (4*) assisting customer in their value-creation processes, in their own context* (Vargo & Lusch 2008, p. 258). The services should not be seen as discrete functions, but rather as integrated parts in S-D logic (Kowalkowski 2010, p. 291). S-D logic facilitates understanding the process of value creation (Jacob & Ulaga 2008, p. 249), because the change is from “creating for” to “creating with” and “creating by” the user (Edvardsson et al. 2011, p. 554). Thus S-D logic contributes to customer-centered service design and provision (Edvardsson et al. 2011, p. 554), and value co-creation (Kowalkowski 2010, p. 286).

2.1.3 Customer-dominant logic

The C-D logic establishes its foundation on the notion, that G-D and S-D logics are missing how the value emerges, without emphasizing provider perspective (Heinonen, Strandvik & Voima 2013, p. 105). In C-D logic value emerges from customers (i.e. how they experience value in own context), and during interaction with the service provider (Heinonen et al. 2010, p. 533). Thus moving away from value-

in-exchange, and value-in-use to value-in-experience, as the value creation process is not always active, and the value accumulates over time (Heinonen, Strandvik & Voima 2013, p. 113). It should be noted that C-D logic focuses more on *business-to-consumer* (B2C) (Heinonen et al. 2010, pp. 531-532), than in *business-to-business* (B2B). Basically C-D logic extends the provider and customer involvement scope over the other logics (Heinonen et al. 2010, p. 531). Grönroos & Voima (2013, p. 146) tackle the issue of "experiencing value" in S-D logic with their provider-, joint-, and customer-spheres (introduced in next chapter).

2.1.4 Convergence of marketing logics

Marketing paradigm has changed away from mere exchange of tangible goods towards intangible elements, such as specialized skills, knowledge, and processes (Vargo & Lusch 2004, pp. 1-2). The three presented logics (goods-dominant, service-dominant, and customer-dominant) express a continuum to support the transition of the marketing paradigm. The logics stress on the *value creation* and *value co-creation* themes (Grönroos & Voima 2013, p. 144; Kowalkowski 2010, p. 286). Table 1 presents the differences between the logics.

Table 1. Differences of marketing logics (adapted from Edvardsson et al. 2011, p. 554; Heinonen et al. 2010, p. 543; Heinonen, Strandvik & Voima 2013, p. 113, 115; Kowalkowski 2010, p. 286; Vargo & Lusch 2004, p. 2, 9, 11; Vargo & Lusch 2008, p. 255, 258; Ng et al. 2012, p. 422).

Logic	Markets	Perspective	Value	Primary resources	Example
Goods-dominant logic	B2B	Provider	Value realized in the exchange process (*value-in-exchange*)	Operand	Goods are seen as distribution mechanisms for services. Transactions are in focus of sales.
Service-dominant logic	B2B	Customer	Value realized in use (*value-in-use*), and always co-created	Operant	Skills and knowledge are used to enhance customer´s processes. Cultivating relationships important.
Customer-dominant logic	B2C	Customer	Value emerges from customers (*value-in-experience*), not an active process, accumulates over time.	Operant	Focus on how customer´s live their lives, not how they consume a service. Broader perspective on customer than in S-D logic.

The *perspective* (as in Table 1) refers to the value realization view. In G-D logic the main focus is on exchange of goods and services (i.e. transactions), thus it is a provider perspective (i.e. value-in-exchange). Whereas in S-D logic the perspective promotes the customer as skills and knowledge are needed to enhance customer´s processes (i.e. value-in-use), while cultivating the ongoing relationship. See Appendix 2 for further comparison of G-D, and S-D logics, and transition examples for practitioners. C-D logic is not further considered in this thesis due to the focus on consumer markets.

Instead Grönroos & Voima (2013, p. 133) accept that customers do ultimately experience the services, even though the limited value-in-use, and co-creation terminology. The definition of value by Grönroos & Ravald (2011, p. 8) goes hand-in-hand with Grönroos & Voima (2013, pp. 135-136) notion, that value-in-use an ongoing process that emphasize customer´s experiences, logic, and ability to extract value out of bundles (i.e. resources) – an extent of how customer´s feel their experiences through consumption.

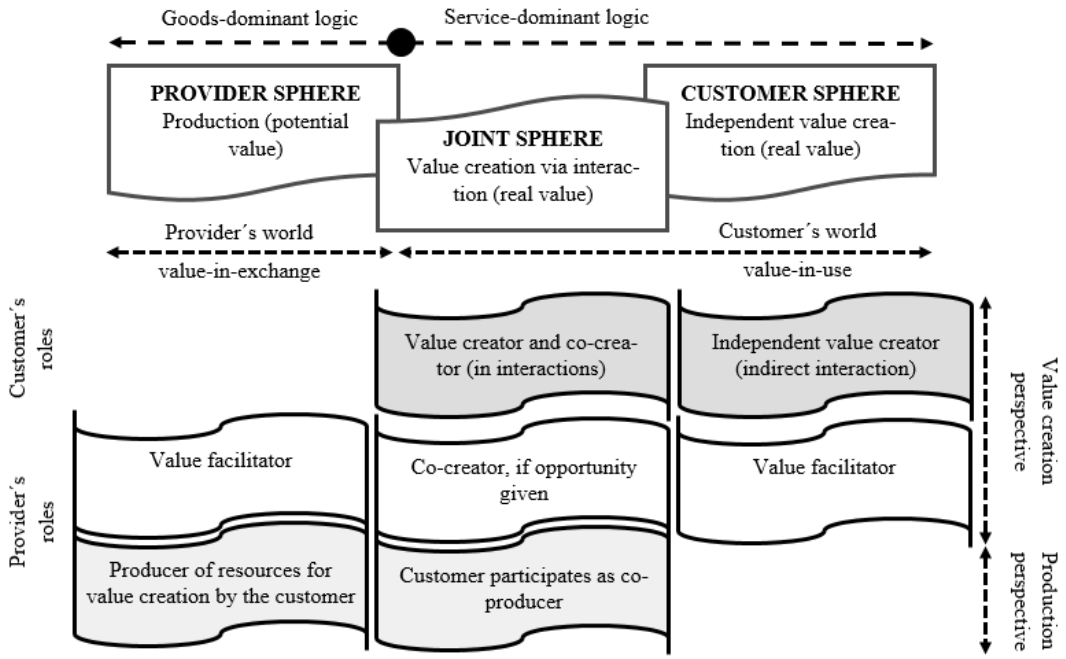

Figure 4. Value realization in different spheres (adapted from Grönroos & Voima 2013, p. 141).

Value creation spheres (provider, joint, and customer spheres, clarified in Figure 4) explain the value realization (as in Table 1) according to S-D logic (also as in C-D logic). The spheres reshape the value-in-use to have more holistic view (comparable to value-in-experience), also describing roles and interactions (Grönroos & Voima 2013, p. 144) as in Figure 4. Grönroos & Voima (2013, p. 142) argue that joint-sphere (i.e. co-creation) is over emphasized as customer sphere is where true value emerges. G-D logic (value-in-exchange) and S-D logic (value-in-use) are separated, although Grönroos & Voima (2013, p. 136) do not separate them.

In Figure 4 the notion of provider´s world, and customer´s world are adapted from Heinonen et al. (2010, p. 535), but also the G-D and S-D logic turning point. According to Grönroos & Voima (2013, p. 143) the interactions are either direct (i.e. buyer-supplier), or indirect (e.g. buyer and his friends in customer sphere). The indirect interactions (as in *value co-creation* example) are often out of provider´s reach (Grönroos & Voima 2013, p. 144; Heinonen et al. 2010, p. 534; Heinonen, Strandvik & Voima 2013, p. 116). S-D and C-D logic converge via spheres. Löbler

(2013, p. 421) has also noted that in S-D logic the interactions are often indirect in nature (i.e. in service-dominant network), where actors are carriers of resources.

2.2 Service business strategies

What are the fundamental reasons for repositioning strategically for service business? The purpose of the transition can be in strategic, financial or marketing related advantages as Gebauer, Gustafsson & Witell (2011, p. 1270) explains, or to position company via offering, and via customer relationships as Penttinen & Palmer (2007, p. 552) note. Companies reposition themselves to (1) *keep up with competition* (Kowalkowski, Kindström & Gebauer 2013, p. 506), (2) *keep up with eroding product margins* (Gebauer, Bravo-Sanchez & Fleisch 2007, p. 12), (3) *market environment is changing due to the multi-channel (information) era* (Bask, Tinnilä & Rajahonka 2010, p. 154), (4) *provide steadier revenue streams* (Oliva & Kallenberg 2003, p. 166), and (5) *to meet customer needs better* (Penttinen & Palmer 2007, p. 553).

Companies in transition are pursuing a balance between services and products (Salonen 2011, p. 683) in order to reposition themselves strategically to address changing customer needs (Nordin et al. 2011, p. 390). In the transition the strategic choice on offering (on standardization versus customization) (Bask, Tinnilä & Rajahonka 2010, p. 175) affects the depth of customer interaction (Gebauer 2008, p. 280). The transition process offers variety of challenges, frequently related to past and current way of conducting business (e.g. improper data collection) (Heikkinen 2012, p. 11). Often changes are implemented to gain competitive advantage (e.g. differentiated services or cost leadership) and increased co-creation of value for the customer, (Edvardsson et al. 2013, p. 36; Gebauer 2008, p. 279; Kowalkowski, Kindström & Gebauer 2013, p. 506). The transition is often contingent upon trade-off between transaction and production costs (Bask, Tinnilä & Rajahonka 2010, p. 155). Thus service business strategy answers to distinct questions; how deep is the buyer-seller relationship, and to what extent services are provided (Lightfoot & Gebauer 2011, p. 666)? The questions provide a smooth continuum from service business logics to

strategies. The questions are also the successors of *external environment* affecting the strategy formulation (Gebauer 2008, p. 280); (1) *competitive intensity the product, or service field*, (2) *customer´s price sensitivity, and market growth*, and (3) *customer´s strategic option for operating the product*.

The product-service continuum express fundamental strategic choice; should a company focus more on products, or more on services (but not solely on either) (Oliva & Kallenberg 2003, p. 162). The notion of standardization versus customization (Jaakkola, Orava & Varjonen 2009, p. 19) adds the complexity, as the depth of customer interaction (*value creation*) should be considered (Kowalkowski 2011, p. 277). Tukker (2003, p. 9) points out that value is derived mainly from the product itself if services are seen as add-ons – and vice versa. The fundamental choice in product-service continuum, and standardization versus customization is presented in Figure 5. The triangles represent the relative importance on goods or services, and they should be considered as separate (e.g. even if services are seen as an add-ons, a single service could be extremely customized).

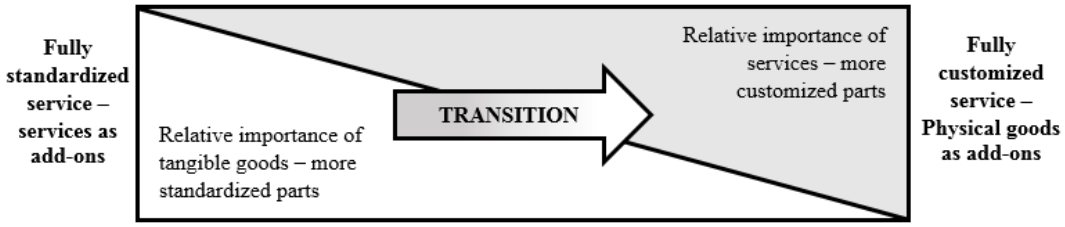

Figure 5. Product-service continuum and standardization levels (adapted from Jaakkola, Orava & Varjonen 2009, p. 19; Oliva & Kallenberg 2003, p. 162; Tukker 2003, p. 9).

The extent of service provision (meeting customer needs) thus explains that the more customized the service is, the more knowledge is needed from customer´s business (Grönroos et al. 2007, p.37), such as what the customer values (Pekkarinen & Salminen 2013, p. 165). Companies must strategically consider their standardization levels in their offerings, as often high customization level results in higher costs (Nordin et al. 2011, p. 392).

2.2.1 Bundling as a service strategy

A strategic choice (e.g. positioning) can be based on combinations between offering and the depth of customer relationship. The focus on offering is related to the completeness of offering; how products and services are bundled. Relationship management is based on the nature of buyer-seller relationship (i.e. transactional versus relational). Authors´ studied four case companies in industrial companies (turnover of two case companies over 4 billion EUR annually, and two less than 20 million EUR). (Penttinen & Palmer 2007, p. 522, 555, 557) Bundling is often referred to the *completeness of offering*, explained as; *to which extent provider is able to solve buyer´s issues* (Pekkarinen & Salminen 2013, p. 162), or *how well the bundle meets customer´s needs* (Penttinen & Palmer 2007, p. 554).

Penttinen & Palmer (2007, pp. 554-555) implicitly explain that completeness of offering relate to either use of external resources (e.g. 3rd party providers), or the use of only internal resources for having a complete offering. Whereas Pekkarinen & Salminen (2013, p. 161) found in their study that the more complete the offering is (i.e. how well the issues are solved) the greater the need for e.g. planning, financing, owning, and operating is, thus suggesting also the use of external resources to create complete offering. Completeness of offering thus has two views to it:

- *Provider view* (e.g. offering can be more complete if customer issues are solved with using only internal resources of the company).
- *Customer view* (e.g. offering can be more complete if customer´s issue is solved from single point of contact, even if it requires multiple providers).

Relational aspects relate to risk-aversion (e.g. commitment, and trust), information exchange, cooperation, and adaptation by the providers – to name a few (Penttinen & Palmer 2007, pp. 554-555). Penttinen & Palmer (2007, p. 554) use completeness of offering, and nature of buyer-seller relationship as a framework for the different offering related service strategies (Figure 6).

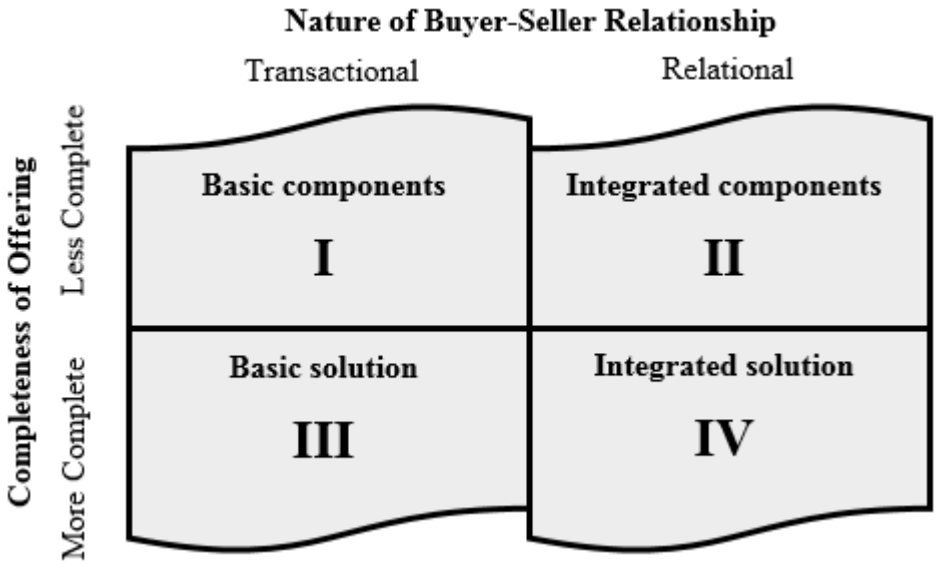

Figure 6. Strategic positioning through bundling strategies (Penttinen & Palmer 2007, p. 559).

Figure 6 supports the strategic positioning, where the *basic component strategy* is the simplest and having clear costs, but has limited differentiation and relationship abilities (basic offering with limited service, e.g. components). The *basic solution strategy* on the other hand has more differentiated product, but incurs greater bundling and coordination costs (offering includes service, but relationship is transactional, e.g. bundling of software and hardware). The first two strategies are inherently transactional. In the *integrated components strategy* relationship is deeper (e.g. product R&D) resulting in higher relationship management costs and possible conflict situations (e.g. due innovations), and value of sub-components might be limited (basic product as a part of more important system, e.g. sub-assembly). *Integrated solution strategy* often results in strong relationship with customer, possible innovations (e.g. co-development) and value-addition, but the relationships management costs are high and lock-in factor is present (complete offering and close relationship with customer, e.g. full-service contract). (Penttinen & Palmer 2007, p. 555) Appendix 3 provides detailed information about the four different service strategies (*I*, *II*, *III*, and *IV*).

2.2.2 Service strategies of product manufacturing companies

Gebauer, Bravo-Sanchez & Fleisch (2008, p. 12) studied manufacturing companies (Western-European), and found distinctively different service strategies. Gebauer (2008, p. 280) notes that strategies can be divided in relation to offering (e.g. differentiation, or cost leadership), or according to depth of customer interaction. The ability to augment core offering results from increased breadth of services (Gebauer 2008, p. 281), and often the product-centricity changes to customer-centricity when the strategy is changed to another one (Gebauer 2009, p. 80; Lightfoot & Gebauer 2011, p. 680).

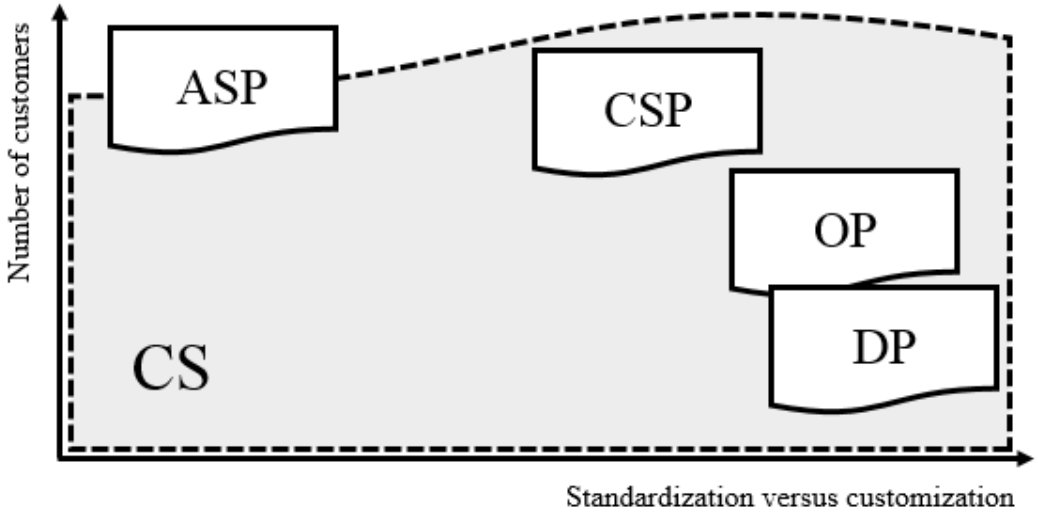

Figure 7. Service strategies in comparison (adapted from Gebauer 2008, p. 288; Gebauer, Fischer & Fleisch 2010, p. 106; Lightfoot & Gebauer 2011, p. 669).

The identified distinctive strategies (Figure 7) correlate with Oliva & Kallenberg (2003, p. 162) product-service continuum; other strategies favor standardization, and others customization. The proposed service strategies (as different types of service offering) are a*fter-sales service providers* (ASP); after-sales services and cost leadership are the drivers of this direction. *Customer support providers* (CSP); unique value propositions, and differentiation through products and services. *Outsourcing partners* (OP); provide and push operational services, often having broad service and product portfolio. *Development partners* (DP); services intended for

superior process development goals. (Gebauer 2008, pp. 287-288) *Customer service* (CS); addresses general quality of interaction in buyer-seller relationship, and proper functioning of a product (Gebauer, Fischer & Fleisch 2010, p. 106).

CS strategy being general strategic direction, and not consistent with the other offering related strategies (as ASP, CSP, OP, and DP) it will not be considered further. The offering related strategies are presented (as in Figure 7) in comparison with the product-service continuum, and number of customers.

Companies having ASP strategic direction often compete on low prices (i.e. customer are price sensitive). Services are offered to overcome general issues. Cost leadership often leads to erosion of quality on products and services. Services and products are often unbundled. (Gebauer 2008, p. 287)

High quality, performance, and reliable products are related to CSP strategy as customers often demand optimization of processes, and preventive services. Due to the nature of needs, the services are often customized, resulting in issues with globalization and salesforce skills. Promotion of service culture in the company is essential for value creation. (Gebauer, Bravo-Sanchez & Fleisch 2008, pp. 16-18)

Having high appreciation on services and products (over ASP strategy) is typical for companies with large service portfolio as in OP strategy. Companies having OP strategy often have cost leadership, high service differentiation, and they take full responsibility over customer´s processes. DP strategy often results in competitive advantage due to the buyer-seller partnership; created competencies act as entry barrier for competition. Services offered include similar services as ASP, and CSP strategies have. (Gebauer 2008, p. 288)

The service strategies are presented below environment first, and strategy in brackets. The figures are results of such (environment-strategy configuration) study, which consisted of 195 different strategic business units (including well-known companies, e.g. ABB, Festo, and *Hilti*). ASP´s environment is highly competitive

and price sensitive (the strategy configuration is cost leadership and after-sales services). CSP´s environment is low in competition and concentrated in optimizing customer´s processes (the strategy configuration is offering differentiation, and process-oriented services). OP´s environment is highly competitive, where strong interest lays in reducing initial investments (the strategy configuration is cost leadership, and operational services). DP´s environment is low in competition and concentrate on collaborative innovations (the strategy configuration is differentiation, and R&D services). (Gebauer 2008, p. 281, 287-288) Discovered figures (e.g. overall profitability) of different service strategies according the study in Table 2. The figures in brackets represent standard deviation of the study. Customer loyalty is measured in terms of repurchase rate. OP´s *overall profitability* and *direct service profitability* (gray area) are the same, as the *share of service revenue* is 100% (i.e. pure service company). (Gebauer 2008, pp. 287-288).

Table 2. Service strategies in figures (Gebauer 2008, pp. 287-288).

	ASP	**CSP**	**OP**	**DP**
Overall profitability	**5,1%** (1,1%)	**6,5%** (2,7%)	**5,7%** (1,3%)	**7,5%** (1,2%)
Direct service profitability	**14,2%** (4,5%)	**10,0%** (2,6%)	**5,7%** (1,3%)	**8,4%** (1,3%)
Share of service revenue	**15,6%** (3,7%)	**26,4%** (4,3%)	**100%** (-)	**21,1%** (2,3%)
Customer satisfaction	**72,2%** (16,4%)	**82,1%** (16,5%)	**89,0%** (12,7%)	**94,1%** (7,9%)
Customer loyalty	**67,5%** (11,3%)	**75,8%** (12,0%)	**95,1%** (12,1%)	**93,0%** (8,1%)

2.2.3 Relational expansion in service strategies

Raddats & Easingwood (2010, p. 1334) base their categorization of *product-centric business* (PCB) service (PCB´s as focus companies of the study) strategies according to two dimensions; services focused on customers´ on products or operational activities, and whether the focus is on own, or on own and 3rd party products. The customer operations (i.e. focus on own and 3rd party products, or solely on own products) and servitization level (i.e. orientation towards customers or products) result in four service strategies (Raddats & Burton 2011, p. 525). Raddats (2011, p. 337) note that the differentiation via strategies occur due to resources linked of own products, through relational resources with other *original equipment manufacturers* (OEM´s), or through relational resources with customers.

The strategies are distinct from each other, and the research by Raddats & Easingwood (2010, p. 1338) found, that any given company has one particular strategy as dominant (e.g. a company selling construction equipment favor services related to their own products). The service strategies (Raddats & Easingwood 2010, p. 1341; Raddats 2011, p. 333) are s*ervices engagement* (A); product-attached services for own products, e.g. training; s*ervices extension* (B); product-attached services for own, and 3rd party products, e.g. support; s*ervices penetration* (C); operations services for own products, e.g. asset availability; and s*ervices transformation* (D); operations services for own, and 3rd party products, e.g. systems integration.

The service strategies from services engagement to services transformation provide a clue about the required depth of buyer-seller relationship. The same path also reflect the need for operant, and operand resources. The service strategies are presented in Figure 8, where primary resources and depth of relationship are presented.

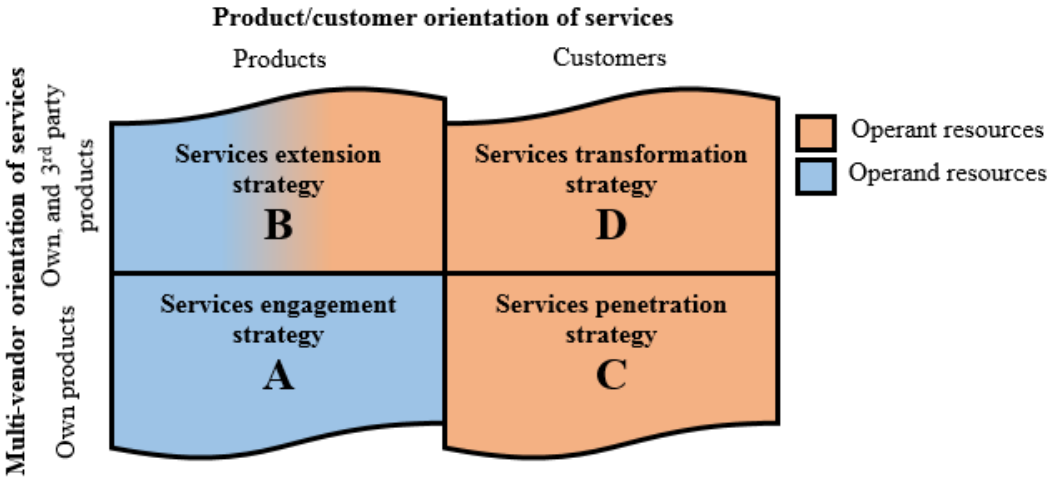

Figure 8. Product-centric business service strategy options (adapted from Raddats & Easingwood 2010, pp. 1338-1341, 1335; Raddats 2011, p. 333; Vargo & Lusch 2004, p. 2; Vargo & Lusch 2008, p. 256).

Services engagement strategy (A) is often the first step towards providing services. Providing *services engagement* type of services have the focus on maintaining the functionality of a product. The goal is to differentiate from competition, and encourage customers to re-purchase. This strategy requires operand (main resource)

and operant resources, and has similarity to G-D logic (i.e. product centricity). (Raddats & Easingwood 2010, p. 1338) On-time delivery, technical testing, and modular assembly services are examples of this service strategy services (Raddats 2011, p. 336).

Services extension strategy (B) is similar to *services engagement strategy* (A), but the differentiating factor is that services are also provided for 3rd party products. This strategy also requires more operant resources (e.g. to build relationship with other OEM´s) than *services engagement strategy* (A). The strategy might cause conflict with the company´s own product business, and lead to superficial relationships with other OEM´s, and thus *services extension strategy* (B) is also parallel to G-D logic. (Raddats & Easingwood 2010, p. 1339) The services provided are similar to *service engagement strategy* (A), but with wider spectrum of services offered, e.g. pre-sales planning and design, installation, commissioning, maintenance, and retrofitting as upgrades (Raddats 2011, p. 336).

In *services engagement strategy* (A) supplier is seen only as a supplier of product, whereas in *services penetration strategy* (C) operational issues of the product are addresses by the supplier. In *services penetration strategy* (C) supplier manages operational activities for customers. (Raddats & Easingwood 2010, p. 1339) For example a telecommunications company does not anymore tell where it wants a base station to be located at, but rather explains how much coverage it needs (Raddats & Easingwood 2010, p. 1339), thus requiring a strong relationship (Raddats 2011, p. 336). S-D logic is related to *services penetration strategy* (C), as the relational aspects are important in value creation (Raddats & Easingwood 2010, p. 1340).

The most customer-centric strategy is *service transformation strategy* (D), due to close proximity of customer´s operations in a *multi-vendor environment* (MVE). Asset availability, managed services, systems integration in MVE often results in this strategy to a consultancy need (e.g. lifecycle services in MVE). Often the tran-

sition from *services penetration* to *services transformation strategy* (D) is seen difficult due to the required operant resources. This strategy is aligned with S-D logic, as the supplier brings operant (and operand) resources together for delivering customer value. (Raddats & Easingwood 2010, p. 1340) The widest range of services is found in this strategy, for example maintaining company´s entire desktop infrastructure (versus providing sole maintenance) (Raddats 2011, pp. 336-337). Figure 9 presents the relationship between sources of differentiation, service strategies, and related categories – and differences between vendor orientations related to the service strategies (BC in Figure 9 is abbreviation for backward compatibility).

The three main sources of differentiation are physical resources (linked to own products), relational resources as relationships with other OEMs, and relational resources as relationships with customers. Discrete services are explained as modular processes, where part of the service (e.g. installation), could be performed for example by the customer. Product lifecycle services are services for *installed base* (IB); companies outsource responsibilities and share risks. Output-based solutions are the most valuable category of service offerings; outsourcing more holistic, and often in MVE. (Raddats 2011, p. 337)

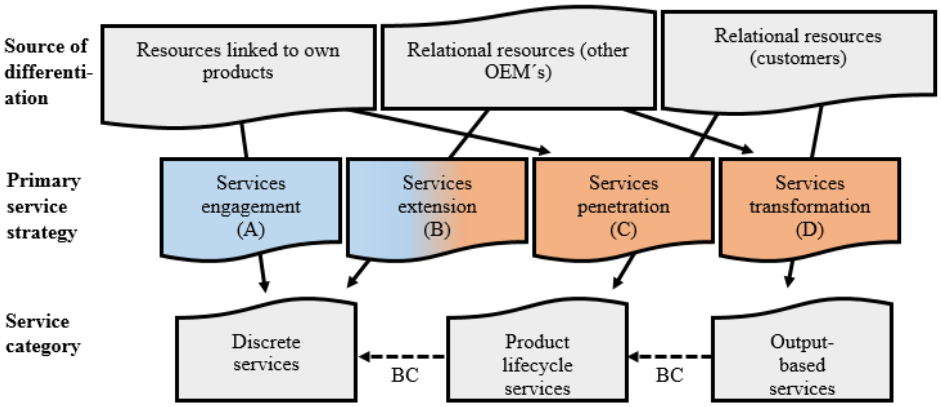

Figure 9. Linking sources of differentiation, service strategies and related categories (Raddats 2011, p. 337).

Single-vendor solution providers focus on their own products and services (following strategies *services engagement*, and/or *services penetration*). *Multi-vendor so-*

lution providers integrate products from multiple OEMs, and provide post-deployment services for their, and own products (following strategies *services extension*, and/or *services transformation*). Both provide product lifecycle services, bundle offerings, are compensated based on achieved performance. The differences are:

- *Single-vendor solution provider*; provides partial solutions exclusively focusing on own products. Limited knowledge of other OEMs´ products, and unlikely develops solutions with other OEMs. Wishes to be prime contractor whenever possible.
- *Multi-vendor solution provider*; provides impartial solutions including multi-vendor products. Strong knowledge of other OEMs´ products (potential parts of solution), thus provides more comprehensive solutions. Develops solutions with other OEMs, satisfies being either prime, or sub-contractor. (Raddats & Burton 2014, p. 133, 135, 139)

2.2.4 Convergence of service strategies

The strategic repositioning in service business is contributed by meeting customer needs better (Nordin et al. 2011, p. 390), due to decreasing product margins (Gebauer 2008, p. 278; Gebauer 2009, p. 79), services being less imitable than tangible products (Salonen 2011, p. 684), to contribute to customer value (Raddats & Burton 2011, p. 523), achieve higher business performance through customer centricity (Gebauer, Gustafsson & Witell 2011, p. 1278) – to name a few. The presented service strategies are related to service offering, and as Lightfoot & Gebauer (2011, p. 666) noted; service strategies are conceptualized through service offerings. Penttinen & Palmer (2007, p. 559) service strategies were highly related to offering (focusing on completeness of offering, and on relational aspects). Gebauer (2008, pp. 287-288) service strategies also focus on depth of customer interaction, and to type of offering. Raddats & Easingwood (2010, p. 1341) service strategies make clear distinction between own and 3rd party products, and relational aspects (through G-D, and S-D logics).

Service strategies are thus often related to Oliva & Kallenberg (2003, p. 162) product-service continuum; what part of the offering space the services occupy? This does not mean that companies should forget their core business (e.g. physical products), but instead enhance long-term competitiveness by adding services (Salonen 2011, p. 688). The depth of buyer-seller relationship is another important concept in service strategies, as relational capabilities mobilize other actors (Gebauer, Paiola & Edvardsson 2012, p. 324). The relationships become paramount when the provided services are not related to company´s own products (Raddats 2011, p. 338). *Information communications technology* (ICT) contributes in handling customer relationships (Kowalkowski, Kindström & Gebauer 2013, p. 509), but often customer relationship management activities are not aligned with strategic goals (Saarijärvi, Karjaluoto & Kuusela 2013, p. 584). Contemporary service business focuses on *network capability* (capability to exploit inter-organizational relationships) (Kohtamäki et al. 2013, p. 1376), bringing more complexity to relationship management.

The service strategies are presented in Figure 10 (having provider view) in comparison with completeness of offering, and with the G-D, and S-D logics. Justifications were done in order to complete Figure 10 as follows. Completeness of offering was selected as the other comparison, as it correlates with the number of customers (Figure 7, Cf. provider view), and with multi-vendor orientation of services (Figure 8, i.e. more complete offering if services provided for own products, and 3rd party products). The G-D, and S-D logics reflect the standardization versus customization (Figure 7), and product/customer orientation of services (Figure 8) correlate with the nature of buyer-seller relationship (Figure 6).

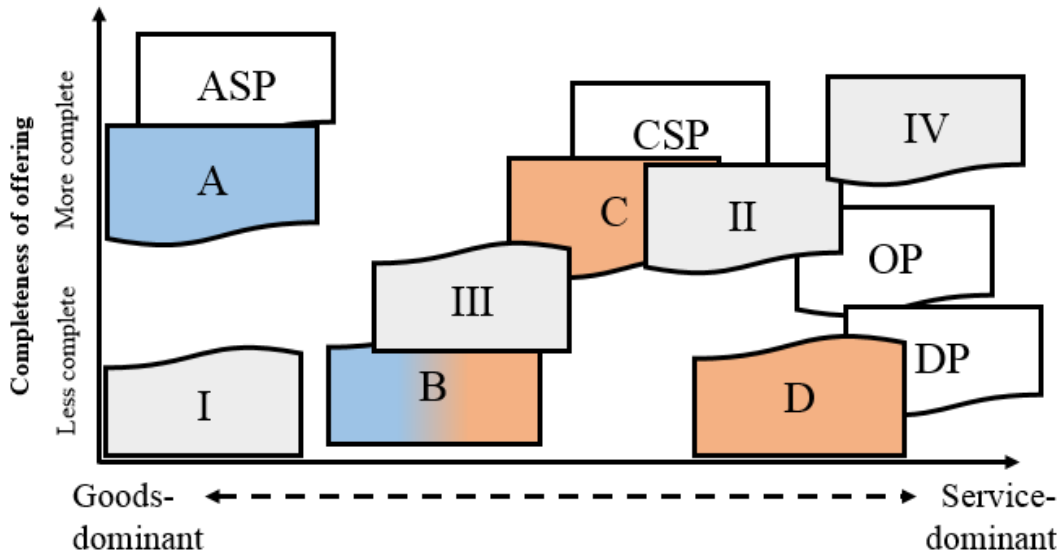

Figure 10. Service strategies map (adapted from Gebauer 2008, pp. 287-288; Penttinen & Palmer 2007, p. 559; Raddats & Easingwood 2010, pp. 1338-1341, 1335; Raddats 2011, p. 333)

Penttinen & Palmer (2007, p. 559) strategies (*I*, *II*, *III*, and *IV*) follow rather linear path, although strategy III is before strategy II due to the relational aspects, but the completeness of offering increases towards the end. Gebauer (2008, p. 287-288) strategies (*ASP*, *CSP*, *OP*, and *DP*) follow decreasing exponential trend, as the completeness of offering decreases, and relational aspects (i.e. S-D) and customization of offering are more intensive towards the end (e.g. DP requires external resources, provider view). Raddats & Easingwood (2010, p. 1341) strategies (*A*, *B*, *C*, and *D*) follow zigzag pattern as the completeness of offering is high for strategies A and C, but low for strategies B and D. Interestingly strategies A and B are more G-D logic related, whereas C and D are S-D logic related. Also when moving towards the S-D end, the need for operant resources increases, while the importance of operand resources decrease, this is true for all of the strategies. Penttinen & Palmer (2007, p. 559) service strategies are selected to be part of the theory framework, as the stages follow a linear path, and provide clear examples. The selected service strategies also suits the case company, and its current situation (on behalf of offering, and nature of buyer-seller relationship), and has similarity with the article firms.

2.3 Service paradox

Transition from product-centric to service-centric company has many paths. The ultimate goal often is to be a *service provider* (major part of value creation stems from services) (Gebauer, Fleisch & Friedli 2005, p. 15). A successful transition to service-centricity has occurred when value creation through services is high, and products are seen as add-ons (as in Figure 5) (Gebauer & Friedli 2005, p. 71). An unsuccessful transition (called *service paradox*, as in Figure 11) occurs when transition leads to high cumulative investments in the service business (e.g. increased service offering), but share of service revenue stays relatively low (Gebauer, Fleisch & Friedli 2005, p. 15). Transition path 1 (in Figure 11) represents the successful exploitation of financial potential of service business, and path 2 the struggle to exploit such potential (Gebauer, Fleisch & Friedli 2005, p. 15). The successful transition line has also resemblance to the product-service continuum, where the value is mainly derived from services.

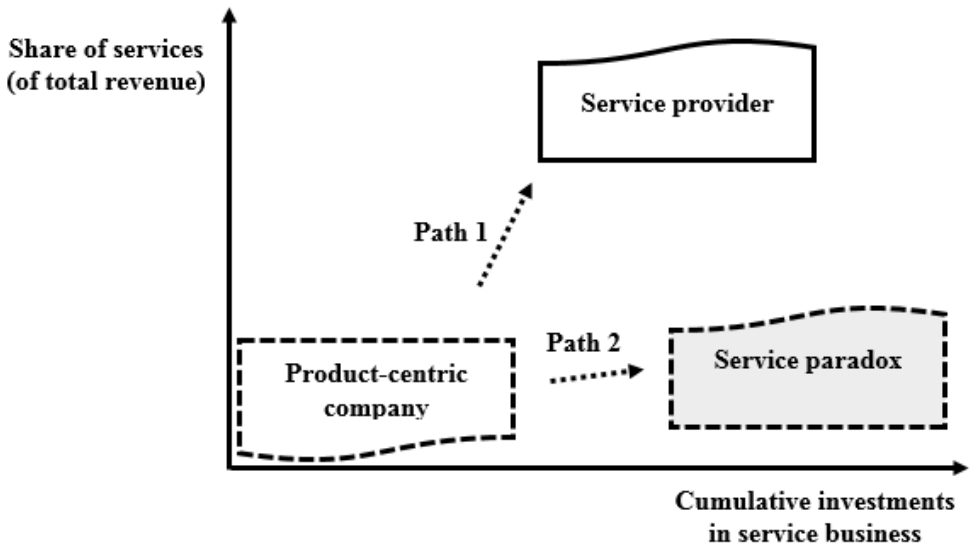

Figure 11. Service paradox (Gebauer, Fleisch & Friedli 2005, p. 15).

In many cases service strategies are inherent parts, or future parts of the holistic service offering. Service offering (Gebauer 2008, p. 280) strategies are often conceptualized via service offerings (Lightfoot & Gebauer 2011, p. 666). This can be witnessed (to name a few) via product-service continuum (Oliva & Kallenberg

2003, p. 162), via customer-support service strategy (Gebauer, Fischer & Fleisch 2010, p. 119), and via systems integrator strategy (Salonen 2011, p. 683). Not all of the service strategies (e.g. after-sales service) lead to sustainable advantage (Gebauer, Fischer & Fleisch 2010, p. 124), and thus can lead to service paradox.

3 CATEGORIZATION OF SERVICES

This chapter promotes the understanding of a reader in the categorization of services context. The chapter follows a path from general aspects of categorization towards more in-depth presentation of different service offering categories. The service offering categories resemble the marketing logics, and service strategies transitions as they are manifestations of such choices. Service offering related frameworks are presented to sum up various service categorization methods. The goals is to provide a broad view on how services are categorized, and how these choices might affect a company in transition? The used theoretical framework is presented at the end of this chapter that has elements from chapters 2 and 3.

3.1 Offering and transition

What is an *offering*? Often engaging in close relationship the providers are required to understand the needs, and values of their organizational customers with production (Brax 2005, p. 143; Pekkarinen & Salminen 2013, p. 145), as e.g. S-D logic promotes. Service offering consists often of tangible, and intangible element, where knowledge intensiveness varies as Pekkarinen & Ulkuniemi (2008, p. 86) note. Thus offering is a product-service bundle, as Kindström & Kowalkowski (2009, p. 158) put it. Pekkarinen & Salminen (2013, p. 143) say that “an offering describes the elements through which a company can provide value for its customers”. Pekkarinen (2013, p. 54) revisited the term offering to “an industrial solution offering is an entity comprising customized products, services, collaboration, and finance needed to fulfill the industrial solution”. The completeness of offering explains the extent to which the provider is able to solve buyer´s issues (Penttinen & Palmer 2007, p. 553) as noted earlier. Often customizable offering is valued more than a standardized one as it corresponds to the needs (Jaakkola, Orava & Varjonen 2009, p. 20), where customized offerings can give rise to business opportunities (Mathieu 2001, p. 51). Thus the level of standardization in the offering (differentiation), and completeness of offering is based on the chosen service strategy.

As noted earlier, the service offerings are the realizations of service strategies as Lightfoot & Gebauer (2011, p. 666) noted. The offerings themselves occupy a space in the product-service continuum by Oliva & Kallenberg (2003, p. 162), that has traditionally referred to tangible products, rather than on intangible services in manufacturing companies (Kindström & Kowalkowski 2009, p. 157). The issue has been low differentiation in the industry (e.g. focus only on guarantees, and other basic services), that can be reached by focusing on more advanced services proactively (Mathieu 2001, pp. 39-40). Barry & Terry (2008, p. 234) propose a simple classification of services, presented in Figure 12.

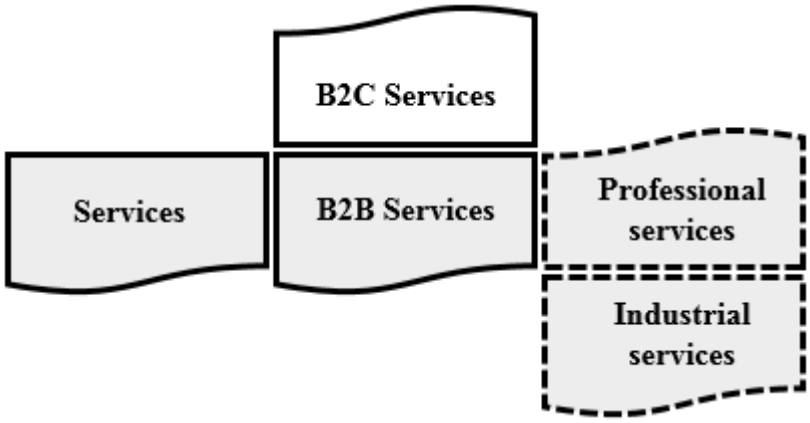

Figure 12. A simple classification of services.

The simple classification of services (Figure 12) does not propose, that only services should be considered in the product-service transition. There are multiple indicators in favor of transition towards more service based, and service oriented business (in *to-for-via* order). In order *to*; (1) *exploit new opportunities* (Martinez et al. 2010, p. 450), (2) *exploit unrealized potential* (Paloheimo, Miettinen & Brax 2004, p. 12), (3) *increase volume of sales* (Gremyr, Löfberg & Witell 2010, p. 161), and (4) *to offer more complete solutions* (Davies, Brady & Hobday 2006, p. 39). *For*; (1) *creating competitive advantage in ever-changing environment* (Neu & Brown 2005, p. 4), (2) *attracting new customers, and retaining old ones* (Hsieh et al. 2013, p.371), (3) *increasing company performance* (Fang, Palmatier & Steenkamp 2008, p. 1), and (4) *for increasing the value experienced by the customer* (Strandvik, Holmlund & Edvardsson 2012, p. 132). *Via*; (1) *service business innovations* (Amit

& Zott 2012, p. 41), (2) *finding more efficient compromise between standardization and customization of services offered* (Böttcher & Klingner 2011, p. 325), (3) *infusing services in value propositions* (Witell & Löfgren 2013, p. 520), and (4) *via understanding value creation process better* (Gustafsson, Kristensson & Witell 2012, p. 321).

How the transition should be implemented? A transition process from product to service orientation (adapted from Gremyr, Löfberg & Witell 2010, p. 163; Oliva & Kallenberg 2003, p. 165; Reinartz & Ulaga 2008, p. 93) as through (1) *unifying product-related services, and recognition of being a service company*, (2) *entering IB market with services, and having flexible service platform*, (3) *expansion to relationship- or process-centric services, and creating service oriented salesforce*, and (4) *taking over customer´s operations, and having performance oriented indicators*.

This paradigm transition is often referred as *service infusion of manufacturing* (Kowalkowski et al. 2012, p. 765), or as *servitization of manufacturing* (Ng et al. 2012, p. 416; Turunen & Toivonen 2011, p. 74). The transition from products to services have resemblance to transition from G-D logic to S-D logic; customer´s needs are satisfied via solutions (Cova & Salle 2008, p. 270). Thus the transition does not only focus in the objects of exchange (product, or service) but rather on customer´s processes (Turunen & Toivonen 2011, p. 74), as buyers often seek long-term partnership in service business (Barry & Terry 2008, p. 228). The transition often leads to a service paradox (introduced in chapter 2.3, service paradox), where a company has significant amount of services that do not create substantial revenue (Gebauer, Fleisch & Friedli 2005, p. 15), and thus the portfolio management becomes challenging (Böttcher & Klingner 2011, p. 320).

During transition companies should have clear focus on the goal, and own resources and capabilities. The strategic competitive advantage is often gain through unique resources and distinctive capabilities (Ulaga & Reinartz 2011, p. 6). The unique resources (e.g. IB usage data, or distribution network) and distinctive capabilities

(e.g. hybrid offering sales and deployment capability) (Ulaga & Reinartz 2011, p. 9) resemble operand and operant resources (Vargo & Lusch 2008, p. 258) respectively. Kindström & Kowalkowski (2014, p. 100) note also that resources and capabilities of a company foster service innovation. The strategic goals through successful offerings (i.e. related to the actual services) by Ulaga & Reinartz (2011, p. 9) are *differentiation advantage*, or *cost leadership advantage*.

Gebauer, Gustafsson & Witell (2011, p. 1270, 1277) found that service differentiation reduces the sensitivity of strategies towards customer centricity, and result often in good business performance (e.g. due to the need to understand customer´s needs and businesses more thoroughly). Thus the strategic choices drive the transition, whereas the offering(s) represent the operational, and functional levels of companies.

3.2 General offering categorization

Companies position themselves in relation to depth of customer relationship, and their own competencies (upper and lower parts in Figure 13 respectively). These buyer-supplier positions have their own business models, and mindset of how business is conducted. The different positions also require different type of technical and business competencies, which is a strategic choice. The supplier positions (supplier involvement in expanding order, as in Figure 13) are explained in the following paragraph.

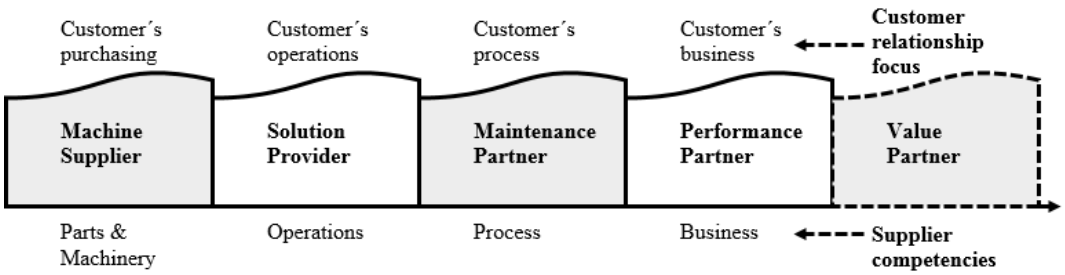

Figure 13. Supplier´s roles, competencies, and customer relationship focus (adapted Kalliokoski et al. 2003, p. 20).

Machine supplier; focus on supplying tangible products that meet customer needs, e.g. installation, training, warranty, spare parts. *Solution provider*; also referred as system supplier, focus on delivery of systems that enhance customer´s processes (not just piece of equipment), e.g. project engineering, turnkey deliveries, rebuilds, consultation. *Maintenance partner*; continued supplier involvement during lifecycle of delivery, e.g. maintenance contracts and outsourcing, spare parts (consumables) contracts. *Performance partner*; responsible for performance of a system (secures operation of process), requires continuous on-site presence, e.g. performance contracts and planning. *Value partner*; involved in customer´s business, customer pays for output, supplier has responsibility over operations. (Kalliokoski et al. 2003, pp. 18-20)

Thus the selection of services is affected by a strategic choice (Kalliokoski et al. 2003, p. 19), which affects the general categorization of services. The general categorization of services explain how potential customers expect, see, and experience services at the functional level. For this purpose providers create service package´s in order to communicate the content, and benefits of a single service – that in numbers constitute a service portfolio (see more in Appendix 4). The holistic categorization can provide a clue how a portfolio can be structured (e.g. based on lifecycle), or provide strategic momentum for differentiation in services. General categorization of services found in literature review is provided in Table 3. These categories represent similarity to the categories that companies use in their daily businesses (e.g. performance services being the core services, which are supported by after-sales services).

Table 3. General categorization of services.

Offering category	Description	Example(s)	Reference(s)
Core services	The definitive reason why a customer buys the service.	Advertising being the core service of a marketing company.	Jaakkola, Orava & Varjonen (2009, p. 11)
Supporting services	Services that are necessities for the use of core service.	A billing service for the sold service is a supporting service.	
Complementary services	Optional services, that are often billed.	A recovery service is an example of a complementary service.	
Pre-purchased services (beginning of life)	Services provided before the exchange occurs.	Engineering, and design services.	Barry & Terry (2008, p. 238), Grönroos et al. (2007, p. 91)
Delivered at purchase services (middle of life)	Services provided as the exchange occurs.	Training of operations staff.	
After-sales services (end of life)	Services provided after the exchange has occurred.	Technical maintenance services.	
Spare parts & warehousing services	Value based on customer´s needs and provider´s ability to respond to those.	Spare parts, modular parts, and software updates.	Grönroos et al. (2007, pp. 92-95)
On-request services	Value basis as in previous.	Technical support, and retrofitting services.	
Maintenance services	Value based on the ability to recognize customer´s needs and provider´s ability to respond to those.	Service programs, preventive maintenance, and expert services.	
Availability services	Value based on relationship commitment and provider´s ability to help the customer in forecasting in order to maintain availability.	Cost efficiency services, and usability trainings.	
Performance services	Value based on relationship commitmend and understanding, and provider´s promise to enhance customer´s processes.	Capacity services, and intelligent services and technologies.	
Lifecycle cost insurance services	Value based on relationship commitment and understanding, and provider´s promise to manage lifecycle costs.	Leasing services, and lifecycle cost services.	
Business outcome share services	Value based on relationship commitment and understanding, and provider´s promise to actively participate in managing selected business with the customer.	Externalization services, and value chain management activities.	

Jaakkola, Orava & Varjonen (2009, p. 11) categorize services into three categories, having provider perspective. The categorization approach can also be related to a lifecycle, e.g. product´s lifecycle. Barry & Terry (2008, p. 238) present their categorization (pre-purchased, delivered at purchase, and after-sales) of services on lifecycle. Grönroos et al. (2007, p. 91) present similar categorization of service on lifecycle (beginning-, middle-, and end of lifecycle). Although both authors provide similar categorization of services on lifecycle, they do not fully blend with each other (e.g. delivered at purchase and middle of life services). But Grönroos et al. (2007, p. 92) note that for example beginning of life services include engineering services, thus it is justified categorize them in the same category, as they resemble each other at a reasonable level.

Services can thus be categorized to correspond different categorization methods, resembling different hierarchical levels. Grönroos et al. (2007, p. 92) note that the service levels create the holistic service offering, that has a particular order how they are arranged. Jaakkola, Orava & Varjonen (2009, p. 9) propose that the categorization should be constructed on the basis of the value the customer seeks. Grönroos et al. (2007, pp. 92-95) express a service offering categorization, where the hierarchical order is related to depth of relationships. Grönroos et al. (2007, pp. 92-95) categorization of services is similar to Oliva & Kallenberg (2003, p. 168) that has; *basic installed base services* (e.g. spare parts), *professional services* (e.g. technical support), *maintenance services* (e.g. preventive maintenance), and *operational services* (e.g. managing operations). The first two categories are more transaction-based, whereas the two latter are more relationship-based services (Oliva & Kallenberg 2003, p. 168) – following the same principle as the previous categorization. Kohtamäki et al. (2013, p. 1375) studied different types of service offerings in their literature review (articles from 1974 to 2010) in industrial firms, and found six different dimensions, that consisted of thirty-three different services. The service dimensions (categorizations) as follows in Table 4 by Kohtamäki et al. (2013, pp. 1375-1377).

Table 4. Service categorization dimensions.

Offering category	Example(s)	Reference
Maintenance services	Repair, and upgrade.	Kohtamäki et al. (2013, p. 1375-1377)
Research and development services	Feasibility studies, and problem analyses.	
Customer services	Product demonstrations, customer seminars, technical user training, and customer consulting.	
Finance and insurance services	Product leasing, or renting.	
Performance services	Product warranty and demonstration, total care solution, and guaranteed availability.	
Procurement services	-	

Services (offering) can be thus categorized in multiple ways, depending on the use (external, or internal). Presented categorizations provide clue of how services can be categorized internally in a company. Some categorization principles were used in a company context (core, supporting, and complementary service), some in the offering lifecycle context (beginning-, middle-, and end of life services), and some in the customer value context (spare parts, on-request, maintenance services, and so on). All of the individual services fall under Kohtamäki et al. (2013, p. 1375) categorization, that has six dimensions.

3.3 Service strategy related categorization principles

This chapter presents service offering categorization principles. The categories are related to the presented service strategies and logics, which explain the value realization, and depth of buyer-seller relationship, amongst other things. Some of the categorization principles (e.g. service supporting the supplier´s product) are sometimes called service strategies (Raddats & Burton 2011, p. 524), but here they are explicitly addressed as categories. Service strategy related service categories are presented Table 5.

Product-service system (PSS) can be defined as system that consist of integrated tangible, and intangible elements that fulfil specific customer needs. The elements intend to help business to focus on a product-service strategy. (Tukker 2003, p. 9) Tukker (2003, p. 2) introduced three categorization principles to PSS, that follow the product-service continuum by Oliva & Kallenberg (2003, p. 162). Tukker (2003, p. 4, 8) also note, that the types (under the three categories) resemble business models, thus having different characteristics in economic potential. For example leasing, renting, and pooling services might lead to irresponsible use of products. Issues in operationalizing functional result are also seen problematic (e.g. over promising). Often product-oriented services are seen as the least problematic. (Tukker 2003, p. 25)

Mathieu (2001, p. 39) propose that typical product related services (e.g. after-sales services, financial services, training services, and so on) were a source of competitive advantage. The more advanced services, related to customer´s action in relation supplier´s product, require more elaborate perspective on the service offer (Mathieu 2001, p. 40).

Table 5. Strategy related service categories.

	Offering category (strategy related)	Used abbreviation	Description	Example(s)	Reference(s)
Part of product-service system	Product-oriented services	PSS-POS	Simple product related services. Advice and consultancy services.	Maintenance, financing, spare parts, end-of-lifecycle return. Performance advice related services.	Tukker (2004, pp. 248-249)
	Use-oriented services	PSS-UOS	Product lease, renting, and pooling services (differentiating responsibilities and sequence of use).	-	
	Result-oriented services	PSS-ROS	Activity management and outsourcing services. Pay-per-service units. Functional result services.	Outsourcing of activities with quality control. Buy an outcome - service. Services that deliver results (not necessarily technology related).	
	Service supporting the supplier´s product	SSP	The purpose is to ensure proper functioning of the product, and to facilitate access to the product.	After-sale service.	Mathieu (2001, pp. 39-40)
	Service supporting the client´s action in relation with the supplier´s product	SSC	The purpose is to support client´s initiatives, requiring intimate knowledge of the client´s operations and processes, and how the service will support their core activities.	Training service.	
Part of SSC	Services supporting the customer´s processes	SSCP	The purpose is to ensure optimal usage of product in its own operation environment, and to minimize shutdowns.	Preventive maintenance, scheduled inspections, availability contracts, and modernizations.	Turunen & Toivonen (2011, pp. 76-77)
	Services supporting the customer´s business	SSCB	The purpose is to enable growth and success in customer´s business.	Consultancy, training, financial solutions, business optimization, and integrated solutions.	
	Service supporting customer network action	SSCN	The purpose is to reveal societal side to the offer, i.e. how different actors influence on solutions.	Providing any service that provides value for customer and its network (polymorphous in nature).	Cova & Salle (2008, p. 275)
	Product lifecycle services	PLS	The purpose is to maximize the uptime of a product. Often seen as integral part of the product, thus hard to differentiate with.	Often customers have low willingness to pay for such service (e.g. warranty).	Ulaga & Reinartz (2011, pp. 15-19)
	Process support services	PSS	The purpose is to assist customers to improve their processes. PSS not often related to products (as PLS, or AES), and thus specialized competencies of supplier are leveraged.	Often customized, and the motivation to pay for such service is high (e.g. solution).	
	Asset efficiency services	AES	The purpose is to achieve productivity gains from assets by the customer.	Often related to supplier´s goods with high customization, which results in lower demand (e.g. engineering solution).	
	Process delegation services	PDS	The purpose is to perform customer´s processes. PDS is directed for customers, but they do not remain in control of it (as in PSS).	Often has goods-service combination logic, with customized services. Risks are transferred, and pricing based on indicators.	
	Services supporting mutual action	SSM	The purpose is to benefit both customer and provider, by supplier´s actions in a long-term relationship.	Provider organizes a conference, where provider receives information about customers, and customer about provider´s technology.	Pekkarinen & Salminen (2013, p. 163)

In *service supporting the supplier´s product* (SSP) the depth of buyer-seller relationship, and customization of offering are low. The focus in SSP is thus on product,

that enhances a process. In *service supporting the client´s action in relation with the supplier´s product* (SSC) the depth of buyer-seller relationship, and customization of offering are high, and the focus is on people. (Mathieu 2001, p. 40) This service categorization is rather provider dominant based on products (categories are related to supplier´s products).

Manufacturer´s expand their services due to sophistication of customer needs, and due to competition (Turunen & Toivonen 2011, p. 75). Turunen & Toivonen 2011, pp. 76-77) further divide SSC into *services supporting the customer´s processes* (SSCP) and *services supporting the customer´s business* (SSCB). The type of customer relationships focus by Kalliokoski et al. (2003, p. 20) (as in Figure 12) are also proposed by Turunen & Toivonen (2011, p. 77) in relation to the categories; SSP´s are transactional (e.g. machine supplier), SSCP´s are performance partners (e.g. performance partner), and SSCB´s are strategic partners (e.g. value partner). Also Turunen & Toivonen (2011, p. 76) focus less on the provider perspective on SSC, as they note SSC being "services supporting the customer", whereas Mathieu (2001, p. 41) notes that SSC services are related to provider´s products. Paloheimo, Miettinen & Brax (2004, p. 23) propose similar differentiation between SSCP, and SSCB, but with distinction that SSCP´s are related to *equipment use in process* (e.g. training, maintenance management, equipment availability, process optimization, and so on).

Oliva & Kallenberg (2003, p. 162) product-service continuum, and Vargo & Lusch (2008, p. 255) S-D logic are followed by Cova & Salle (2008, p. 270, 276), who argue that solutions (as transition from products to services) follow the logic inherently. Companies move downstream in value chain, and towards customer centricity in their solutions; a solution being an effective leveraging of such resources (Cova & Salle 2008, pp. 273-274). The value is co-created thus between the supplier (and its network) and the customer (and its network) as Cova & Salle (2008, p. 272) note. Thus a new element is proposed to the offering (Cova & Salle 2008, p. 275*); services supporting the customer network actions* (SSCN). SSCN´s are re-

alized via customer network value propositions; how benefits are delivered by provider (and its network) to customer (and its network). SSCN´s are difficult to integrate into value propositions as a coherent whole due to their polymorphous assemblies in nature. (Cova & Salle 2008, p. 276) Thus a SSCN can be any solution providing benefits for customer, and its network, such as complex delivery of tangibles, and intangibles in form of construction solution (a turnkey solution).

Ulaga & Reinartz (2011, p. 6) follow the transition from goods to hybrid offerings, similar to Oliva & Kallenberg (2003, p. 162) from goods to services. Hybrid offerings consist of one or more industrial service, and one or more industrial good (Ulaga & Reinartz 2011, p. 5). For successful hybrid offering, a company needs unique resources (e.g. IB product usage data, R&D assets, sales and distribution networks, and field service organization), and distinctive capabilities (e.g. data processing, risk assessment, design-to-service, and hybrid offering sales and deployment capabilities) (Ulaga & Reinartz 2011, p. 10). In the first two categories a supplier promises to perform a deed (input), whereas in the last two a supplier promises to achieve a performance (output) (as in Table 5). Example services of each category: delivery of products (*product lifecycle services*, PLS), process consulting (*process support services*, PSS), remote monitoring (*asset efficiency services*, AES), and fleet management (*process delegation services*, PDS). (Ulaga & Reinartz 2011, p. 17) This categorization is a comprehensive, and strategy related (resulting in cost, or differentiation advantage), promoting supplier perspective (resources, and capabilities of the provider).

Pekkarinen & Salminen (2013, p. 163) found a new category of services focusing on mutual benefits in buyer-seller relationship. The benefits of this category are often related to intangible elements (such as knowledge), and the category is *services supporting mutual action* (SSM). For example two companies made a service depot agreement nearby customer´s operations, which resulted in new market area for provider, and shorter downtimes for the customer. In the other case a company

organized a conference, where both provider and customer received valuable information (knowledge about customers, and knowledge about provider and new technologies, respectively). (Pekkarinen & Salminen 2013, p. 163)

3.4 Convergence of categorization, strategies and logics

Killen & Hunt (2010, p. 163, 165) found similarities between project portfolio management, and creating competitive advantage through new product, or service portfolio. Killen & Hunt (2010, pp. 163-164) propose that dynamic capabilities (e.g. knowledge via learning), similar to Ulaga & Reinartz (2011, p. 10) capabilities (e.g. processing capability) promote the offering success. The offering should be communicated to customers via dynamic portfolio, that is adaptable in meeting differing customer needs, as Kindström (2010, p. 488) notes. Previously mentioned capabilities also reflect to operant resources (Vargo & Lusch 2008, p. 256), such as human (e.g. sales capability), organizational (e.g. mindset), informational (e.g. IB data), and relational (e.g. relationship depth) (Raddats & Burton 2014, p. 135). Mathieu (2001, p. 39) noted that for being competitive the services cannot be generic (e.g. after-sale service). This notion promotes the research, and implementation of more advanced services, although Oliva & Kallenberg (2003, p. 171) note that often advantages (e.g. manufacturing) diminish quickly beyond basic services when moving towards more advanced services. Taking resources, capabilities, and the notion that more advanced services create competitive advantage into account, the trail leads to S-D logic. In S-D logic tangible goods are seen as vehicles for service provision (Kowalkowski 2010, p. 286), similar principle as in product-service continuum (Oliva & Kallenberg 2003, p. 162).

The categorization of services in a company is thus a selection. The categorizations, and categorization principles provide the means, methods, and examples for analyzing service related offering, and service portfolio. They also promote the strategic change, and contribute in understanding the versatility between competencies related to offering, and depth of customer intimacy (as in Figure 13). The general categorizations had a company, lifecycle, or customer value perspective, which

could be arranged into six different categories. The categorization principles on the other hand are less specific (cannot be used as is), represent higher level of categorizing services, but also reflect to the strategic choice for services. The principles reflect the depth of buyer-seller relationship more efficient than the categorizations themselves. The service categorizations, and categorization principles are presented in Figure 14, which follows the division of Figure 10 (service strategies map, as in chapter 2.2.4).

The G-D, and S-D logic in Figure 14 has justified similarity with Figure 13 supplier´s competencies, and the depth of customer relationship. Grönroos et al. (2007, pp. 92-95) categorization was left out of the figure due to Kohtamäki et al. (2013, pp. 1375-1377) more evolved categorization. Also the services with different perspectives were added as a lump (blue background, upper part); they exhibit all of the elements (completeness of offering, and both logics). The lower part has all of the categorization principles; SSP, SSC (with SSCP, and SSCB), SSCN, and SSM are presented as areas due to their somewhat ubiquitous, and polymorphous nature. PSS by Tukker (2003, pp. 8-9) is differentiated with the suffixes from the PSS by Ulaga & Reinartz (2011, pp. 15-17). The separation between G-D, and S-D logic represents the ability of offering to create competitive advantage. The categorizations, and categorization principles unexpectedly do not follow any clear pattern when compared (except maintenance services correlate well with PLS, and PSS-POS principles). Lightfoot & Gebauer (2011, p. 666) note about service strategy being conceptualized via offerings, that companies having ASP strategy (as in Figure 10 service strategies map, in chapter 2.2.4 convergence of service strategies) have more standardized services, less intensive customer relationships, and services are as add-ons. This explains the low correlation between the categorization, and categorization principles; the principles resemble only higher level of the actual categories, whereas strategy provides an even higher level focus on how to implement operational, and functional levels of company (e.g. service provision). Thus in Figure 14, the principles areas (e.g. PLS) should occupy more space. Figure 14 also has a *customer view* on completeness of offering (Cf. low correlation with Figure 10).

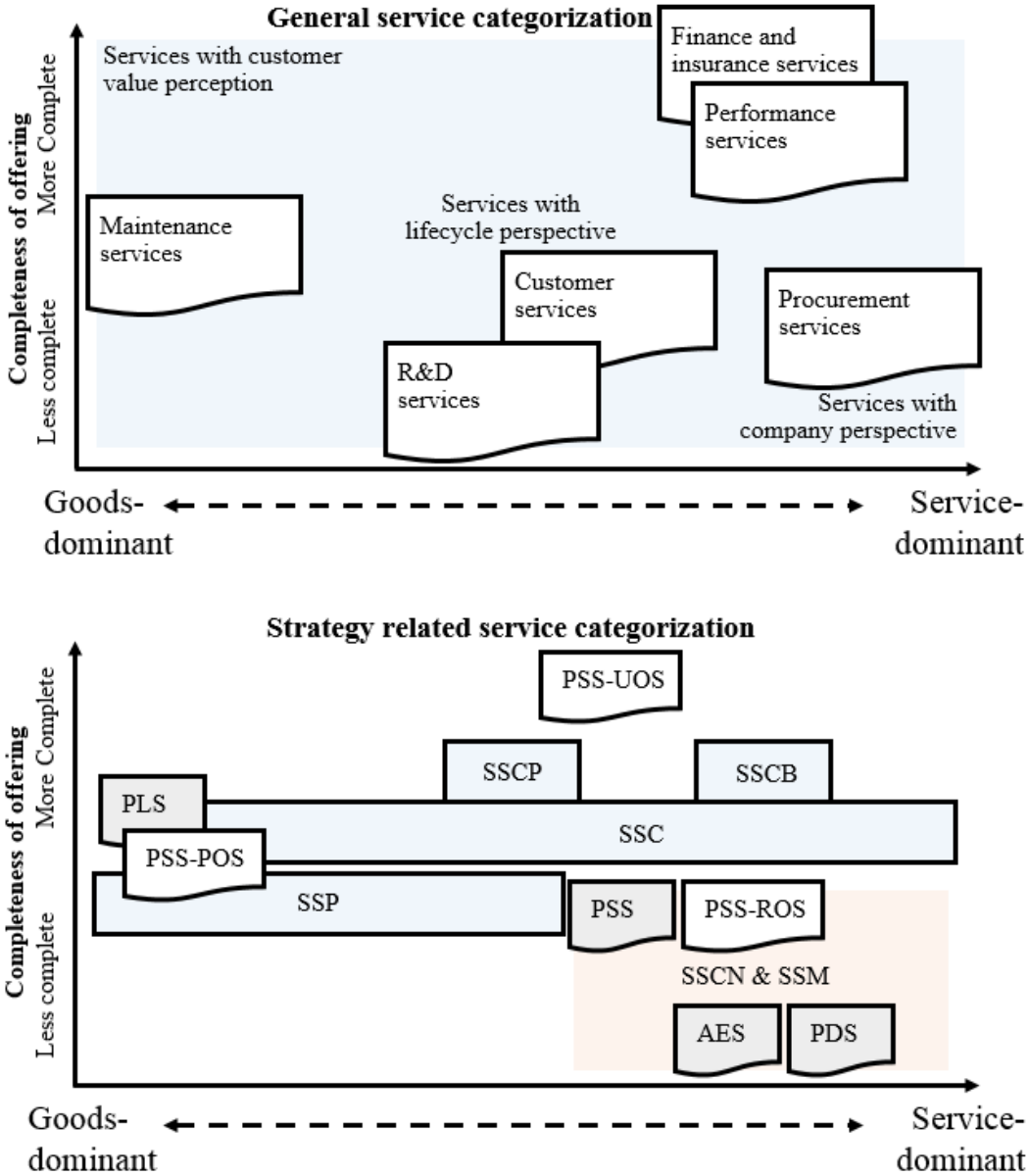

Figure 14. Comparing general and strategy related service categorizations (adapted from Barry & Terry 2008, p. 238; Cova & Salle 2008, p. 275; Jaakkola, Orava & Varjonen 2009, p. 11; Kohtamäki et al. 2013, pp. 1375-1377; Mathieu 2001, pp. 39-40; Pekkarinen & Salminen 2013, p. 163; Tukker 2003, pp. 8-9; Turunen & Toivonen 2011, pp. 76-77; Ulaga & Reinartz 2011, pp. 15, 17-19).

3.5 Offering frameworks

The frameworks chapter introduces concepts, which are capable of aligning multiple areas (e.g. logics, strategies, and categorization of services) together. The frameworks broaden the picture around a single offering (of goods, and services); what aspects do really matter in service provision? The presented *dynamic industrial solution offering* (DISO) framework is built around customer centricity (i.e. customer value). Service-based offering lifecycle framework is built around company perspective (i.e. due to development effort), and thus addresses internal and external topics.

a.) Dynamic industrial solution offering framework

Pekkarinen & Salminen (2013, p. 145) study the role of various elements in industrial solution provider´s offering; the characteristics, and the elements it should include? Offering itself has elements that provide value for customers, whereas a solution should communicate the value drivers (product-, service-, and relationship-based drivers) (Pekkarinen & Salminen 2013, pp. 147-148). Kindström (2010, p. 488) also share similar view on the value drivers, as he finds important the ability to communicate value of offering, and building relationship competences (e.g. to facilitate customer sensing). The characteristics an offering should have by Pekkarinen & Salminen (2013, p. 161) are; *dynamism* (the capability to adapt offering for each case, also noted by Kindström 2010, p. 488), and *completeness of offering* (the extent of customer´s issues solved, or controlled by the provider). The elements an offering should include are *relational*, *financial*, and *performance* elements, explained as follows (Pekkarinen & Salminen 2013, pp. 161-163);

- *Relational element*; the element considers the depth of customer relationship, differentiating between pure transactional deals to relational collaborative partnerships

- *Financial element*; the element includes price, benefits, and risk sharing. The more a provider can effect on customer´s process, the less decisive price is, thus having effect on risk and benefit sharing.
- *Performance element*; the element that develop the performance of a solution (including goods, and services).

Palmatier, Dant & Grewal (2007, p. 190) note that pure transactional deals, as in relational element, are related to opportunism that does not promote long-term relational behaviors (but relational norms are not precursors of exchange performance either). The financial element differentiate between G-D and S-D logic too, as more risk sharing promotes deeper customer relationship, which is in line with S-D logic (and vice versa). Often finding alignment (e.g. mindset) between products, and services in the transition can be challenging, as Martinez et al. (2010, p. 463) note. Thus a solution requires each of the elements coming together for providing true value for a potential customer (Pekkarinen & Salminen 2013, pp. 165-166). The framework (DISO) comprising of the elements, and characteristics is presented in Figure 15.

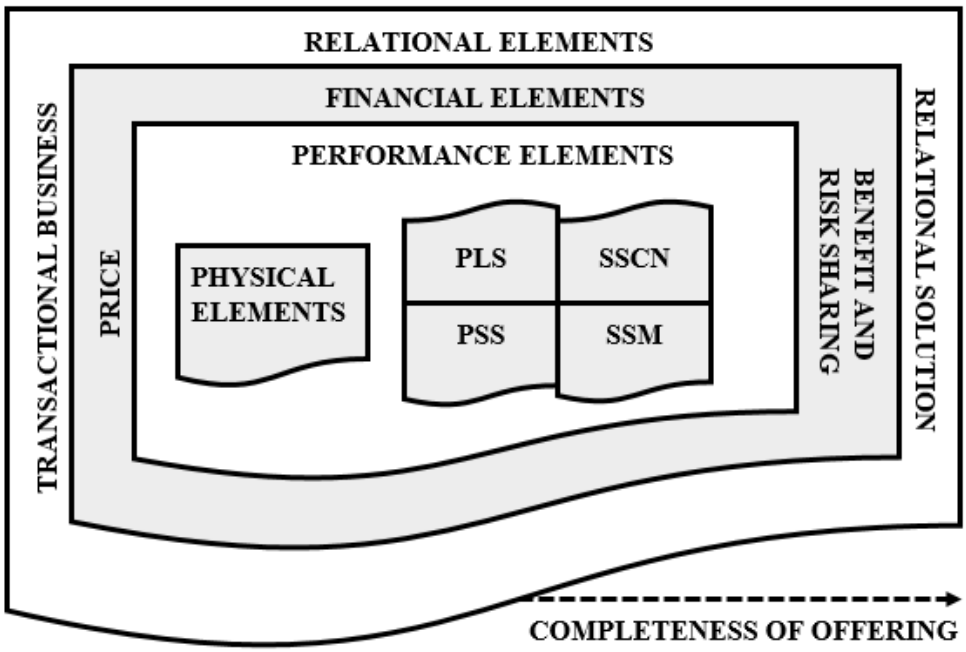

Figure 15. Dynamic industrial solution offering framework (Pekkarinen & Salminen 2013, p. 162).

The dynamism in DISO is derived from the ability to change within an offering as Pekkarinen & Salminen (2013, p. 161). The framework design (Figure 15) promotes reading it from left to right (due to offering completeness), but the three elements and completeness of offering explain it otherwise, as Pekkarinen himself noted too during discussions on 7th April 2014. Previously mentioned (as in Figure 14); complete offerings are often related to standardized offerings, that are related to G-D logic having transactional relationships (i.e. value-in-exchange), whereas in DISO offering completeness and relational solution correlate. Thus DISO should be interpreted as is, case at a time. Their research being a theory constructive, Pekkarinen & Salminen (2013, p. 166) note, that due to this fact DISO acts well as a test platform for a case study.

b.) Service-based offering lifecycle framework

Kindström & Kowalkowski (2009, p. 158) present a four-stage framework of NSD, that pursues integration between business functions, as often service development is ad hoc. The four-stage framework is also referred as the *offering lifecycle framework*, where services are in focus (Kindström, Kowalkowski & Nordin 2012, p. 540). The intangible nature of services creates discrepancies in operations, such as imbalance between different stages of offering lifecycle (Kindström & Kowalkowski 2009, p. 162), and issues in visualizing the value of service-based offering (Kindström, Kowalkowski & Nordin 2012, p. 544). The following four stages of offering lifecycle promote the product-service transition, as NSD is compared to *new product design* (NPD) in the framework (Kindström & Kowalkowski 2009, p. 162):

- *Market sensing*; sensing the markets can be a source of innovation. The innovation can arise internally or externally, but also from local (decentralized) actor.
- *Development*; in developing services, *voice of customers* (VOC´s) and customer interaction should be in focus.

- *Sales*; sales process is more customer centric, and value-in-exchange is emphasized as technical attributes are not in focus.
- *Delivery*; the delivery focuses on co-production, and is people intensive. Relational aspects are important.

Market sensing stage demands decentralization (rhetorically), as often centrally allocated resources promote standardization, and structured offerings. Also services that are provided for free (i.e. costs allocated in the product, e.g. maintenance, or technical consulting) often results in poor management of service portfolio. Service management can have impact on turnover, profitability, and on new product sales, requiring proper measurement system. The transition in *development* stage requires using similar terminology and stages in NSD, as in NPD processes for acceptance, although NSD is more people intensive (e.g. customer perspective). NSD requires more internal consensus due to number of actors, and heavy customer involvement for meeting the anticipated value requirement. The *sales* stage is complex due to intangibility (difficult to visualize), thus the success of sales rests upon knowledgeable sales force. Often sales force is ill-equipped for selling services; lack of knowledge of customer´s processes and their productivity (i.e. need understanding of operations, and revenue logic). Thus the focus in sales stage moves to value-in-use, rather than staying on value-in-exchange. *Delivery* stage is distinctly different between services and products; services are created in interactions with customers. Commitment, and trust are highlighted in the delivery, as in some cases the time span is wide. Delivery of services also require a suitable infrastructure and interface (e.g. continuous meetings, and symmetric information sharing), as e.g. attention only during failure occasion might decrease commitment. (Kindström & Kowalkowski 2009, pp. 162-166).

The service-based offering lifecycle stages are continuous and iterative, thus it should not be considered as static gate model (Kindström & Kowalkowski 2009, p. 158). Table 6 (adapted from Kindström & Kowalkowski 2009, p. 162; Kindström, Kowalkowski & Nordin 2012, p. 543) provides insights to managerial aspects, or-

ganizational challenges, and key outcomes of the four stages. Visualization of service-based offering is a capability through which new customers are gain, and old ones retained – though core product is often the main leverage (Kindström, Kowalkowski & Nordin 2012, p. 543). Kindström & Kowalkowski (2009, p. 165) also found in their case studies that internal service champions (i.e. an individual in a company) drive service business success. Kindström, Kowalkowski & Nordin (2012, p. 544) also note that during market sensing stage a champion should be created. Service related aspects (e.g. value-in-use, depth of interactions, and co-innovation) are recognized as important (Kindström & Kowalkowski 2009, p. 169).

Table 6. Insights to service-based offering lifecycle stages.

Stage	Key managerial aspects	Organizational challenges	Key outcomes
Market sensing	Adressing large scale change instead of small, balance exploration and exploitation (innovation and learning, central and local). Structure existing service portfolio. Building brand image.	Companies tend to supply unstructured services, and lack capability in sensing markets (opportunities).	Increased service understanding internally, and externally. Infusing brand image with service values.
Development	Communicating the service idea, designing NSD via involvement (not just blueprinting). Create business case (market, revenue, and customer data), and proper infrastructure.	Companies tend to have issues finding illustrative, and convincing business cases to get investment decisions, and commitment.	Create internal understanding, and/or market pull - a description of how service works.
Sales	Finding communication and sales methods (e.g. emotional levers, reference case, calculations, etc.). Develop measures, and change existing mindset and norms. Operationalize service outcome propositions.	Sales force is accustomed to product sales, thus competences and willingness to sell services is lacked.	Make customers believe in service concept (arouse interest). Give decision support for an investment.
Delivery	Relationship orientation on sales force (design interactions, and measure performance). Make service offering visible for product accustomed customer.	Companies tend to have issues with necessary service infrastructure, and related technologies.	Security and trust towards supplier increases (peace of mind). Supplier activity reports, measurements, performance, etc. reports.

How does NSD process framework contribute in understanding service portfolio? The result of NSD process (after multiple iterations) is a selection of services; a service portfolio. Also the stages provide hints for assessing related aspects, e.g. the importance of internal mindset towards services. Sales and delivery process is often neglected, as the NSD refers to internal actions, whereas delivery and sales to external actions, although them being the other half of the equation.

3.6 Theoretical framework

The theoretical framework that is presented here is a collection of selected elements gathered from the previously presented theory. The selected theoretical framework represents the empirical part (being case sensitive), but also helps to analyze the current situation. The selected strategy related service categories, and the selected service strategy are the most significant parts of the selected theoretical framework. The used theoretical framework is presented in Figure 16 (adapted from Kindström & Kowalkowski 2009, p. 162; Kindström, Kowalkowski & Nordin 2012, p. 543; Mathieu 2001, pp. 39-40; Pekkarinen & Salminen 2013, pp. 161-163; Penttinen & Palmer 2007, p. 559; Ulaga & Reinartz 2011, pp. 15-19). The theoretical framework thus has the elements of offering present (performance, financial, and relational), elements of framework (four stages), and selected service categories;

- Product lifecycle services (PLS, e.g. warranty),
- Process support services (PSS, e.g. process support),
- Process delegation services (PDS, e.g. risk transfer), and
- Services supporting the client´s action in relation with the supplier´s product (SSC, e.g. training).

The main contribution of the selected theories to the research questions can be seen from Figure 16. The strategy related service categories were selected over general service categories as to ensure the fit of case company services to each category. This also reduces inconsistency, and excess explaining in the results. The holistic service strategy view was adapted from Penttinen & Palmer (2007, p. 559) because

of its consistency between the actual strategies (I, II, III and IV). As an external part, the theoretical framework also consider the external environment (e.g. customers, and to some extent competitors), and company objectives (e.g. growth targets, and fit of service strategy to the overall strategy). The selected elements cover the research problem in order to solve it, but also has fit for the overall company description, and characteristics. Marketing logics (G-D, and S-D) are considered as well (Vargo & Lusch 2004, p. 7; Vargo & Lusch 2008, p. 258).

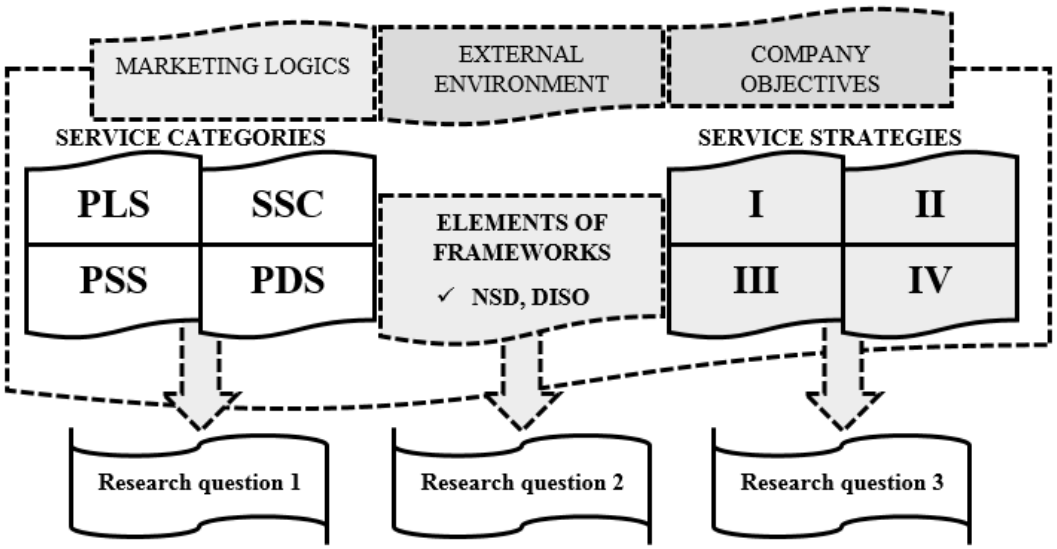

Figure 16. Used theoretical framework.

4 RESEARCH METHODOLOGY

This chapter explains the research methodology used in this thesis. The methodology has an impact on the overall research design, and the chapter contributes to the used research method, methods of data collection and analysis, and on how to assess the quality of the research. Methodology part bridges previous theoretical parts to the empirical part.

4.1 Case study as research method

A qualitative research is chosen as the *research strategy*, as it stresses over words, whereas quantitative research focuses on numbers. Features of qualitative research further distinct between these two research strategies; *inductive view on relationship between theory and research* (theory emergent), *epistemological position* (stress on understanding social worlds through an examination of the interpretation of that world by its participants), and *ontological position* (social properties are outcomes of interactions between individuals, not a separate phenomenon separate from those involved in its construction). (Bryman & Bell 2011, p. 386)

Case study is often used, when a contemporary real-life phenomenon, where the boundaries between phenomenon and the context are somewhat unclear. (Yin 2009, p. 13) The purpose of case study is to initiate change (theory emergent), which requires understanding of the organization and its actors, in order to develop case with common language that leads to consensus and understanding of the topic (Gummeson 1991, p. 75). A case study has more variables of interest than data points, results are converging (and relying) on multiple data sources via triangulation, and the result benefits from previous methodology contributing material (Yin 2009, pp. 13-14). Yin (2009, p. 1) divide the case studies to three distinct research strategies; *descriptive*, *explanatory*, and *exploratory* case studies. Eriksson & Koistinen (2005, p. 9) note, that a case study is intrinsic and valuable (per se), when the researches has special interest towards the topic, unique case providing insights, and wants to understand the case construct to the smallest detail.

An *explanatory* case study tries to describe the case as is, and to answer why the case is like it is, or why it has evolved to its current form. Theory often provides an explanation for the studied cases, as they are often complex. (Eriksson & Koistinen 2005, p. 11-14) Often *descriptive* and *exploratory* case studies have low status (due to describing nature) (Gummesson 1991, p. 75), when compared to explanatory case studies. Eriksson & Koistinen (2005, p. 14) note that case studies (e.g. exploratory) is used to summon and contribute to a larger study, but Yin (2009, p. 3, 16) note, that not all case studies are hierarchically aligned (e.g. pre-main study hierarchy).

The questions themselves explain the type of study, and suggested data retrieval method; "what", "who", and "where" (and their derivatives, e.g. "how many") suggest the usable study method; they can be used both in exploratory and descriptive case studies, with histories and surveys as data (amongst other data retrieval method). (Yin 2009, p. 6) Yin (2009, p. 9) notes, that often "how" and "why" questions are asked, when the researches tries to understand contemporary set of events, and has little of no control over it. Thus in this thesis the research strategy is *explanatory case study*, as according to Yin (2009, p. 5) the form of research questions in such are "how" and "why", and the study does not require control of behavioral events (e.g. experiments), and the study focuses on contemporary events. Explanatory case studies are used often, as the object of study has often developed over time (thus requiring *explaining*) (Yin 2009, p. 6).

Holistic case study illustrates singe unit of analysis, whereas embedded case study illustrates multiple units of analysis in a single case study (Yin 2009, p. 42). An advantage in embedded case study over the holistic one is, that the case is often studied in more detail (and not the whole nature of the case, which is often dynamic) (Yin 2009, p. 45) – although dynamism still remains in the constantly changing environment (Stuart et al. 2002, p. 421) The rationale (by Yin 2009, pp. 40-42) for using single case study here; the case is unique, and provides rather inaccessible perspectives (i.e. due to resource constraints by the company) to the context of study. But there are also some limitations to case studies. Case studies often lack

statistical validity, they can generate hypotheses but cannot test those, and generalizations cannot be done regarding the findings (Gummesson 1991, p. 75). Findings of a case study cannot be generalized to a statistically significant proportion (as stated), but rather to a modifiable (e.g. case sensitive) form (Eriksson & Koistinen 2005, p. 34). The generalization problem arises because large number of variables, appropriate sampling frame, and the rich context of B2B phenomena quickly become unmanageable via case study (Johnston, Leach & Liu 1999, p. 204). This thesis is a *holistic single case study*, and it stresses over service portfolio, and service strategy related topics. Case study as the selection of research method is thus valid, and in line with the study objectives. Case study as a research method is valid due to the nature of the subject (e.g. assessing service management principles), that would be challenging to assess with quantitative methods. To provide a rich description of the company (via documents and interviews), and sound results (e.g. the solution cannot be derived with statistical methods), a case study as a qualitative research method is suitable. The study follows *abductive* reasoning, which is fruitful for when discovering new things (e.g. variables, and relationships) – but it is also difficult, as handling of various interrelated elements and activities in the research work are often complex (Dubois & Gadde 2002, p. 555, 559). Case company is a reasonable research platform, as it (1) *has great number of unstructured services it provides*, (2) *it has been providing services for years*, (3) *there are no clear service management principles for all services*, and (4) *service differentiation strategy implementation has begun just lately*. Thus the case company has many topics, which can be studied in detail in the service business context. As the research is part of a master´s thesis, and the focus is on a single case (company), there are no specific criteria for selecting company or other detailing limits.

4.2 Data collection method and analysis

Interviews are one of the most important sources of case study information; often as guided conversations (following line of inquiry) (Yin 2009, pp. 89-90). The primary method for empirical data collection was interviews, where open-ended questions were asked (interview frameworks in Appendices 5 for internal, and 6 for

external). This allows to interact with the company internal personnel who have the most comprehensive knowledge about the case. Secondary method for collecting data are documents, reports, tables, and figures provided, but also feedbacks to queries, such as emails. Field notes were collected during the interviews in case of problems with interview data. Due to being a single case study, the applicable interviewees (sample, internal and external) were selected by the company supervisor for the thesis. The sample represent, and has the ability to provide extensive, in-depth, and high quality perspectives and information in order to solve the research problem. As case study proposes (its purpose) the study has *hermeneutic* perspective (e.g. the purpose is to understand reality) to it (Gummesson 1991, p. 152).

Many of the internal interviewee´s have comprehensive experience at the case company measured in years, but also experience in multiple positions throughout the company. The interviewee´s for the internal interview were selected according to representation of different levels at the company; strategic, operational, and functional. The participation of different level interviewee´s provide holistic view on the subject, but also provides different aspects and perspectives on the same subject. A cover letter was sent to the interviewee´s (as in Appendix 7) to give initial touch to the subject, and to prepare for the interview.

External interviewee´s were selected according to; use of all sales channels in the past two years, but also according to the size of sales to the particular company. All of the interviews were conducted as telephone interviews. Internal interviewee´s received the cover letter, after which they received a call to arrange a scheduled interview over telephone. External interviewee´s were cold called, and the interviews were scheduled according to the willingness to participate in such (not all responding customers were willing to participate). No cover letter was sent to the external interviewee´s. In Appendix 8 interview descriptions are presented, for example the interview (both internal and external) length in pages describes the length of transcribed audio of the interviews. Total interview time of both, internal and external interviews is 745 minutes, and the total length of transcribed text is 145 pages.

Content analysis was selected for the primary data analysis method. Content analysis is a useful technique, when a broad range of conditions need to be incorporated (Jauch, Osborn & Martin 1980, p. 522), and can be used for the analysis of qualitative, and quantitative material (Seuring 2008, p. 129). The interviews were recorded and transcribed carefully. The data (transcript audio as primary data) was analyzed via qualitative content analysis, where the aim is to categorize and manage qualitative data (e.g. thematizing). In content analysis frequency or volume of a word, or a context (e.g. service strategy) is measured, with a goal to create sound generalizations – as with themes the goal is to form a pattern (Wilson 2012, p. 234). Interview data was triangulated from multiple sources of information (primary, and secondary) to provide, and to contribute to appropriate results and validity – as Yin (2009, p. 99) proposes. The role of secondary data is supportive; fill gaps, provide related background information, and future goals to support understanding of the company environment.

4.3 Assessing the quality of the research

Often implementation of qualitative research is challenging due to lack of theoretical frameworks (and how it relates to the subject), unclear definition of the case, unclear or too broad definition of research questions, and poor analysis of acquired data (Eriksson & Koistinen 2005, p. 43), and the many-sided view to the context (Halinen & Törnroos 2005, p. 1286). Reliability and validity in qualitative research are important criteria in establishing and assessing the quality of research. Reliability and validity of the research can be assessed through (and often used in quantitative research) *external reliability* (the degree to which the study can be replicated), *internal reliability* (if there is more than one member of research team, do they agree or not on what they see or hear), *internal validity* (is there a good match between observations and theoretical ideas developed), and *external validity* (the extent to which the findings can be generalized). External reliability, and external validity criteria are somewhat problematic, as social settings are dynamic (i.e. unstable), and qualitative research often employ case studies (i.e. small sample) respectively. Due to the close linkages of reliability and validity (as previously) criterion

to quantitative study, some authors suggest criteria for assessing qualitative study; *trustworthiness*. Trustworthiness is made out of four criteria; credibility, transferability, dependability, and confirmability (paralleling internal validity, external validity, reliability, and objectivity respectively). (Bryman & Bell 2011, p. 394) Reliability and validity (as qualitative research quality criterion), and qualitative research trustworthiness criteria are described in Table 7.

The study follows Yin (2009, p. 97) three principles to increase study validity and reliability; using multiple sources of evidence (i.e. and data triangulate), documenting the data collected (i.e. case study notes as audio), and maintaining the chain of evidence. Data triangulation is when you collect information from multiple sources aimed to corroborate the same phenomenon (Yin 2009, p. 99), and the purpose is to increase the reliability of the results (Gummesson 1991, p. 122). Case study notes (e.g. audio) should be retrievable at any given point of time (Yin 2009, p. 102). Chain of evidence provides the reader an ability to follow the chain of evidence from top-down, or vice versa (tracing). This can be done with proper citations to relevant data in the text, the data itself should reveal the actual evidence about the phenomena, and these two should be consistent across the study and contribute to research questions. (Yin 2009, p. 105) Business research is influenced by variety of other factors as well, such as personal values of the researcher, theory, epistemology, ontology, and practical considerations of the study. *Personal values* (biases) reflect to personal beliefs or feelings of the researcher towards the study (e.g. can affect data acquisition method), that cannot be excluded totally in qualitative studies (i.e. credibility issue). (Bryman & Bell 2011, p. 29) A study is saturated, when a marginal utility or contribution of a new case approaches zero (Gummesson 1991, p. 85) – but in qualitative studies full convergence does not always occur due to individual interviewee responses in a dynamic, collective environment.

Table 7. Insights to qualitative study quality and trustworthiness criterion.

	Criteria	*Description*	*Method of addressing*	*Reference (of description)*
Qualitative research quality criterion	*Reliability*	Refers to a situation, where two (or more) researchers studying the same phenomenon with similar purposes would end up with approximately similar results.	N/A	Gummesson (1991, p. 80)
	Validity	Refers to the description of reality with good fit to the context (e.g. a map describing earth should reflect to the terrain, if not, the map is not valid). Thus validity is a continuous process of integrating and revising theory, limitations and findings.	N/A	Gummesson (1991, pp. 81-82)
Qualitative research trustworthiness criterion	*Credibility*	Stresses on significance over multiple accounts of social reality. Social reality can have multiple accounts as aspects, thus feasibility or credibility determines acceptability of that social reality to others. The findings of the study are submitted to the members of the social world (who were studied), who confirm that the researches has understood that social world.	Prolonged engagement and persistent observation (long-term orientation). Peer debriefing, triangulation, and member checking (receiving feedback and triangulating); credibility increases as a result.	Bryman & Bell (2011, p. 396)
	Transferability	Refers to the extent of detailed description of the social world under study, as often qualitative research studies a small group (or even individuals), that have certain characteristics. Thus it is important to have thick description of the social world, so that judgments about transferability to other milieu can be made.	Describe company and the case, include interviews; as a result findings can be transferred (to some extent) to another context.	Bryman & Bell (2011, p. 398)
	Dependability	Criterion that stresses over preoccupied thoughts of the researcher; in other words all records and phases of research (from problem formulation to results) should be accessible for audition by peers. Problem often is the large datasets, which results in complex and lengthy validation approach.	Transparent research process description, interviewees reflect to current and previous experiences; consistency as a result.	Bryman & Bell (2011, p. 398)
	Confirmability	Is comparable to objectivity, where it is needed to ensure as far as possible, that the results of the study are results of the experiences and ideas of the informants, and not the characteristics and preferences of the researcher.	Chain of evidence should be visible, receive case company feedback, useful results from the study.	Shenton (2004, p. 72)

5 CASE STUDY

This chapter provides information for the reader about the case company, but also insights regarding the interview responses that contribute in solving the research problem. The chapter provides the process of solving the case, and data analysis examples. The case company description and characteristics, customers, and the state of service business in the case company are described as well. The chapter allows the reader to have profound understanding of the context milieu, which helps assessing the case as a whole. The chapter thus studies the development of selection of services, and how the service portfolio should be constructed according to interviews. Also the management of services, and how the selection of services affect the future at the case company are assessed. The chapter provides findings of the single case study related to the research questions.

5.1 Process of solving the case

The process of solving the case, and the research questions follows a linear path, with iterative parts. The process starts by transcribing the interview data, after which the data is analyzed and interpreted. This followed by understanding the company description and characteristics, which is followed by customer, and subsidiary service business topics. After this the research questions are reflected upon the transcribed interview responds (VOC´s, both internal and external). In the process current service business aspects are considered (e.g. current services). The process is depicted in Figure 17, where process starts with the data analysis topic, followed by case company, and ending up with the reasoning (results regarding the research questions, Cf. market sensing, and development stages).

Solving the case is related to answering the research questions and assessing the research problem itself; how to manage a large on number of unstructured services? The goals in respect to research questions´ order are; to create a service portfolio, to answer how the portfolio affects the transition to service business and its management, and to answer what could be the future influences of such changes. As a

prerequisite and requirement, the results are constructed from the interviews (and secondary data) that are reflected upon the selected theory framework.

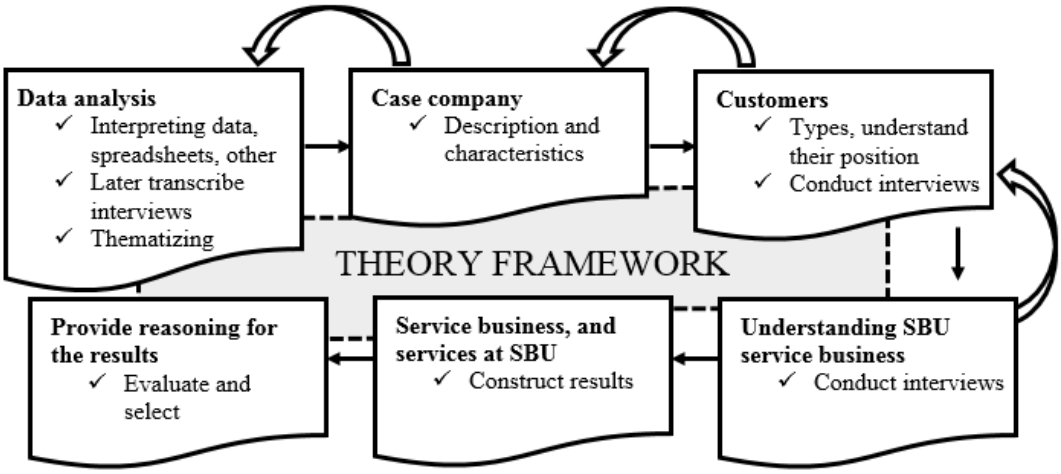

Figure 17. Process of solving the case.

5.1.1 Data analysis

The primary data collection method was interviews, with open-ended questions (e.g. from internal interview, “How do the services of your company position in comparison with your biggest competitors?”). Secondary data collection method were documents provided by the company, and field notes taken during the interviews. The documents, such as listings of current services, service concepts, service overviews, services leaflets, and so on ease the task of creating a holistic view on the services that are currently provided. Field notes were taking during interviews to support the other data recovery methods. The transcribed responds were thematized regarding the research problem, initially in respect to the interview framework questions. Thus the gathered information constructs to under specific topics, from where the answer can be derived. This type of assorting of the answers also help to find correlation between internal and external VOC´s. This promotes the management of services, but also helps understanding what customer´s value. Examples of this are provided in Table 8, where footnote *i* resembles internal answer (company personnel), and footnote *e* resembles external answer (customer). Also due to the number of interviewee´s, and type of the objective (constructing a service portfolio) not just the correlation is important, but also the number of occurrence. Also note

that sophistication of answers from external interviews is lower due to two reasons; no cover letter was sent to prepare for the interview, and the interviews were cold calls to the customer (although the subject was explained before asking the questions).

Table 8. Example of the most valued service by customers.

VOC_i	**VOC_e**	**Conclusion**
"I think it is.. It must be maintenance service."	"Maintenance and product delivery services work well with them."	Product related services are important to ensure functionality of the product.
"…I believe that engineering services are."	"...it is like the professionalism on technical subjects..."	Engineers in technical support services provice an efficient channel for contacting.
"…we figure out the solution at the site, and if necessary we ask for an engineering judgement."	"Fastening products and tools the most."	Customer values product consulting, as the issue gets resolved according to specifications.

Although the questions in interview frameworks (as in Appendices 5 and 6) are static, the interview questions were elaborated to support recovery of useful information. This was done in two different ways. First the first five questions in the internal interview “break in” the interviewee regarding the whole subject; it opens the perspective away from pure products, and only product related services. For example the question regarding the classification of services is well set up with questions regarding the most valuable services to their customers, and how the services can be placed if compared to biggest competitors. Secondly, further questions were asked in order to direct the conversation, or to have more extensive answers. For example when asked about how to describe the development of service business at the subsidiary, a further question was asked to describe it starting from a past date (e.g. start of career) to the current day.

As the subject of study can only be viewed subjectively (as service portfolio is under construction, and it cannot be compared to anything previous work), the an-

swers were gathered into a table to find the proper classification of services (portfolio) for the company. The portfolio contains upper classification categories (which is *service strategy related service categorization*), where some individual services reside (e.g. logistics services have product delivery service in it, or consultancy services have product consulting service in it). Thus the table constructs as presented example in Table 9.

Table 9. Constructing a service portfolio example.

Category (theory)	Category (empirical)	Individual services
PDS	Logistics services	Product delivery, …, n
PSS	Consultancy services	Technical consulting, …, n
…	…	…
n category	n services	n service, …, n

The service categories are derived from the internal interviews, where the definitions were laid out for the categories to be constructed. The most valued individual services by the customer are derived from external interviews. The individual services that are categorized in the categories are derived from documents (e.g. service listings) and from the interviews. The empirical service category (as in Table 9) will act as the service portfolio itself, and the individual services will be categorized under the categories respectively. Thus the thematized data compared to theory is used to derive the results, which will be the result of the business development case.

5.1.2 Case company description and characteristics

The case company is Finland´s country organization of Hilti group. The company is a marketing, and sales organization that provides products (such as drilling, direct fastening, and anchor systems) and services (such as engineering solutions, product training, and logistics) for construction industry for professional use. There are two specific business areas; first one is *power tools and accessories*, and the second one is *fastening and protection*. The foundation for the study is the late strategic change initiated by the Hilti group. One of the strategic goals focuses on service business,

more precisely on differentiation through products and services offered. An operationalized goal is to drastically increase the revenue arising from services, to a significant level of the total group revenue. For example one of Hilti Finland´s Nordic counterpart has provided initial positive indicators in favor of transition towards service business in other Nordic countries as well, such as changing free consulting services to a service for fee.

The case company has a great number of business-to-business services, where management of unstructured body of services is lagging behind. The unstructured management of services causes a chain reaction; e.g. retrieving useful information about current services from current customers, and connecting this to sales related data create challenges for service business. Some services are well documented, standardized and marketed, such as tool fleet management service. Construction industry in the provided product and service market context is undeveloped, providing economic interest for the study.

The case company conducts its business within the building and construction industry in Finland by providing tools, systems, and services for professional use. The organization is a pure sales organization that is 100% owned subsidiary by the group itself. The company differentiates itself with innovative and high quality products and services. The main customer segments are building construction, and building services trades of the construction industry, at which the case company holds globally leading position. The company operates in such areas only where it has the potential to reach such position according to the strategic outline (e.g. ability to attain top three market position). The case company characteristics are presented in Table 10 (employee number presented as in the beginning of 2013).

Table 10. Case company characteristics.

Feature	**Hilti (Suomi) Oy**
Business	Provider of *power tools and accessories , fastening and protection* products, and related services.
Employees	132
Net sales (2012, €M)	36,1
Market position	Leading company in specific industry segments.
Competition	Multiple global (e.g. OEM´s) and local competitors (e.g. wholesale companies), often product specific competition
Main customer segments	Building construction, and companies operating at building services
Special characteristic	Direct customer contacts and relations

The main customer segments vary somewhat according to the country organization, as the building methods vary (e.g. differences between North-Europe and North-America). Regardless of the segment or size of the customer company, a main goal is to have loyal customers; the choice is not who will be served, but rather how they will be served. A favorable clientele is one of which values meet with Hilti´s values; they value the way of conducting business, and are willing to grow together. A special characteristic that differentiates the case company from competition are direct customer contacts and relations. The case company has ten retail stores that cover mainly western and southern parts of Finland. Thus there is a concentration of account managers (technical sales), that visit customers at offices and at construction sites, deliver products and services, maintain the customer relationship and perform other deeds (e.g. fleet management contracts, and act as single point of contact for consultancy).

Another special characteristic is that the company has a family business background that gives opportunity for long-term business development span (a result of this is e.g. the loyalty goal with customers). Thus developing customer accounts, that have long life requires multitude of deeds, products, and services; the relational aspects of the customer relationship overcome transactional aspects. For example further

development of the accounts is currently supported by the recently announced electronic business opportunity (online shop), and the increase of number in the services offered. Customer relationship management is more reactive, than proactive, whereas in key accounts the *customer relationship management* (CRM) is more systematic. Interpersonal ties and relationships play a significant role in account management, where the length and depth of the relationship is often valued.

The competition varies heavily. In power tools there are global competitors (e.g. competitors *A*, *B*, *C*, and *D*). Similarly there are few global competitors in fastening products (e.g. competitors *E*, *F*, *G*, and *H*), but also many local wholesale competitors (e.g. competitors *I*, *J*, and *K*). In services the competition is more difficult to define (due to heterogeneity and visibility of services), but e.g. competitors *E* and *H* excel in logistics services and through vast product portfolio that is adaptable for customer´s needs. There are also direct competition in specific product segments as well (e.g. in diamond cutting, *heating, ventilation, and air conditioning* (HVAC), and in laser and measuring products). Thus the competition is numerous, and many times there are competition in a specific product segment.

As the case company is a subsidiary (a country sales organization) of the group, thus the development of services is mainly implemented by the professional services team in the headquarters. The services are developed according to regions (e.g. Finland is part of the North-Europe region). The services are also localized to cater country specific needs if necessary, where building construction and HVAC segments receive the most attention. The current services portfolio cater the current industry needs. The initiation for developing service business at the group level, but also at the region, and country levels are both internal, and external. As an internal reasons a new strategy is becoming valid, and there is a further need to differentiate away from competition. The global construction markets are in a brink of change (e.g. from transactional to relational processes), ICT has further developed and opened opportunities (e.g. online capabilities), and the working methods of different generations of workers have changed (e.g. technology acceptance) act as exter-

nal reasons for the transition. The main trigger for initiating service business development projects (or any) is customer feedback. The feedback is provided through two hundred thousand daily customer contacts at the group level. The development projects have two specific gates; in the first customer feedback is gathered regarding to a new concept, and in the second the concept is pilot tested (if passes first gate).

5.1.3 Customers

There are multiple customer segments (e.g. building construction, and HVAC) from where a general, usual, or typical customer is a difficult task to recognize regarding services. The customers can be differentiated from one another by a general factor (e.g. sales volume, number of sales channels used, and number of employees), but there are two main groups of customers:

- *Constructors, and designer*: a group of customers, which often do not buy anything from the case company.
- *Contractors*: a group of customers, which often buy from the case company.

These two customer classes can be used in the context of services, as they are enough general, but also provide a clear cut between the types of services to be provided (Cf. product consulting for designers). Constructors are often companies, which are for example responsible for a building construction project. The constructors hire individual contractors to perform the task. Designers on the other for example design the constructions to be build, and are responsible for detailed information (e.g. firestop design). Thus the customer classes are hierarchical (as in the list above), where constructors, and designers are *influencer* group, and contractors are *implementer* group. The influencer group values services such as ease of finding proper documentation (e.g. that fulfil authority requirements), whereas contractor´s value services such as reliability on product-service package (e.g. in case of product malfunction the maintenance has quick response). The two groups are thus linked, and sales from the influencer group are indirect; e.g. they use detailed Hilti firestop

documentation in drawings, which are bought by the implementing group in the construction phase.

The current service portfolio is has evolved to cater the contractor group better (i.e. product related, and consulting services), but in recent years the constructors, and designers have been getting more attention (e.g. due to tightening authority requirements). The influencer group uses services such as technical support (i.e. engineering services, or business reviews), and implementing group uses the widest variety of services by the case company (e.g. product maintenance, fastening consulting, and product training services). External interviewee´s were from both customer groups (influencers, and implementers).

5.1.4 Current state of service business

Most of the current services at the case company service portfolio are derived from Hilti´s global and regional service portfolio. The global services development undergo a process of marketing research and customer acceptance test (Cf. four stage framework of offering). The initialization of such development often happens through customer feedback (two hundred thousand direct customer contacts globally per day), where the unmet needs are discovered during sales cycle with the customer. Thus relatively great part of the services provided locally in Finland are also globally available, whereas regional (e.g. North-Europe) has even greater match (e.g. due to similarities in markets, and construction processes). The services that are transferred from the group level to local subsidiary are localized to some extent; for example marketing methods and support services (e.g. billing) are localized. There are also purely locally developed services, which are not provided on regional, or global levels. These local services are developed based on customer feedback (i.e. depending on number of feedback, or feedback from key accounts). Thus there are some chance of localization in services (Cf. localizing construction equipment), which ultimately follows the customer acceptance process after initiation. An example of local service development is FS Planner *software as a service* (SaaS, a web based firestop planning software). Initially requested by a key account,

from where on it was transformed to a spreadsheet form (acting as customer acceptance), but was sought as yet not enough uniform SaaS. Thus the proof of concept (spreadsheet form) was delivered to global services development team, which transformed it into the current web based software for customers to use. The process from feedback to an actual service remain unclear in the subsidiary; e.g. negotiation with proper personnel (e.g. marketing or management) might lead to further development. This often results in lengthy, time and resource consuming process for the initiator. With the new overall strategy season services, and service business development will be the cornerstones. Services will remain as the differentiating factor (e.g. deepen customer relationship, expand product and service portfolio for customer, understanding customer needs more thoroughly), but will be on more focus due to the goal of increased revenue through services.

The high number of services provided has been recognized as a complicating factor for efficient management of services. There are few services that are well documented, conceptualized, marketed and produced; fleet management, maintenance, warranty, and consultancy. But for example key account managers, field engineers, and account managers produce well excess of seventy different services, ranging from phone advice to health, safety and environment training. The service listing should contain for every service business transaction type (i.e. where or how service is conducted, e.g. phone call), and the objective (e.g. the value description). The service listing currently does not contain all the producers of service (i.e. per employee title, or department), nor the unit and material number for tracking, and service business development purposes. Thus due to the low tracking capability, and low focus on service business itself the service sales revenue is minuscule.

The services are mainly produced by account managers (AM), field engineers (FE) and specialists, key account managers (KAM), and ten Hilti centers (stores). For example AM´s produce product consulting services, FE´s produce system solutions in pipe supporting structures (e.g. including design and bidding services), KAM´s produce business review services, and stores produce sales, and tool trade-in services. There are also specialists for producing systems solutions in façade systems

(as an example). But also company´s in-house departments provide services to external customers. There are also supporting services, such as billing service, and related problem handling phone service, that are produced by departments (e.g. financial, or marketing department). Thus most of the services are related to products (i.e. demonstrations, systems solutions, and trade-in services) as the company is product-oriented. But there are other important categories of services recognized by company personnel, but also by the customers such as technical support, logistics services, financial services, training, SaaS, consulting, direct sales organization (as a service), maintenance, and so on.

A preliminary broad picture of the categorization of services is provided after the analysis of transcribed interview data. The preliminary categorization (Table 11) helps to build a picture of the types of services that the case company provides. The categories were selected, and screened on the basis of importance to the personnel perceptions, and compared to the perceptions of customers. The categorization of services follow a "value the customer receives" –categorization. The categorization is as is, because the subsidiary is a sales organization, and providing value (e.g. time savings, image benefits, or financial gains) to customer is the main driver of services. The current service portfolio thus is recognized as goods-dominant, as the services are often seen as add-ons in many categories (Cf. consulting and maintenance). There are exceptions, which show similarities to service-dominant trend (i.e. technical support, and *health, safety and environment* (HSE) training services). Some of the categories do have overlap, which is mainly due to the ambidexterity, where internal and external responses were recognized and processed (e.g. engineers consult as well). The preliminary categorization of services is the initial version of the service portfolio (first goal). A detailed examples of the preliminary categorization related services are also provided in the following table.

Table 11. Preliminary categorization of services.

Preliminary category	Example of service	Example description	Example of service elements	Other
Product related services	Maintenance and warranty service	After buying a tool the customer receives two year period of cost free maintenance services, lifetime warranty on material and on production defects, and a roof for maintenance costs after two years of tool age (e.g. repair of the tool cost maximum one thirds of the initial price of the tool).	Tool loan, theft security service	Main category
Consulting services	Product consulting, problem consulting	Account manager provides installing guidance for firestop products at a construction site.	Phone support	Main category
Documentation	Technical data sheets, Proofs, SaaS	SBU delivers authority requirement fulfilling data sheets to customers upon request.	Online capability	Main category
Sales services	On-site visits, pricing review	Account manager visits customer´s construction site, and provides information on new process enhancing products and services.	Availability	Main category
Training services	HSE, Product training	Key account manager provides HSE training for a large customer to reduce the number of sick-leave days.	Professionalism	Main category
Technical support	Systems solutions, strength of materials calculations	Back-office engineer selects façade and its fastening solution through calculations for the customer.	Problem solving skills	Provided only by engineers, often to designers
Logistics services	Delivery, pick-up services	Account manager delivers products on-site upon emergency request.	Emergency delivery	Often seen as a background services
Supporting services	Financial services, support	Supporting the maintenance service; a customer calls in to the helpdesk saying that a tool is broken, and the helpdesk arranges product pick-up, maintenance, and return for free for the customer.	Bill handling, reclamations	Process support services

If generalized in Table 11 context, the main category services are provided implementing group of customer (e.g. phone support, or product training), and technical support services are provided mainly for customers in influencer group (i.e. designers). Although technical support services are designated for engineers and designers (by engineers), the documentation category is also important for them (due to ambidexterity, e.g. authority requirement data online retrievability). The service elements can be real parts of individual services (e.g. theft security service is part of fleet management service), whereas availability in sales services category is a prerequisite for use.

The outlined and structured service business development (e.g. as this thesis) in the subsidiary is in its infancy. The service portfolio will be the initial step in assessing the management issues and transition towards service business at the subsidiary. The purpose of the next strategic period will be to raise the level of sales derived from services to a significant level. Thus the initial step, and the future steps will raise the subsidiary out of the service paradox. The future steps of how the service portfolio will enhance the management of services (second goal) was contributed by the interviewee´s responds; service portfolio should be created for better communication, a responsibility should be given (e.g. a service coordinator title), value of each service should be described in detail (i.e. detailed service description), concretizing and packaging should be part of an iterative marketing research process at the subsidiary. The effects of such changes on the future (third goal) are most likely realized as moving from goods-dominancy to service-dominancy; the relative meaning of products lessens. The solutions for the research questions are explained under the three following topics, following the order of the research questions. The solutions are evaluated, and further development ideas are provided under the fourth topic.

5.2 Findings on service categorization

The strategic change support differentiation through services, and in service business in general. The categorization of services promotes the differentiation strategy,

acting as the initial step towards systematic management of such concept. The suggested categorization of services is linked to the strategy related service categories later. The findings on each category (as in Table 11) of services are presented in the following paragraphs.

Consulting refers to the interaction with customers in relation to the products. Internal and external respondents appreciate this type of service. For the customer's flexibility, availability and problem solving were valuable in consulting. Consulting services were seen highly valuable when customers experienced emergencies (e.g. emergency delivery of products, or other non-standard issue). Internal respondents also noted that flexibility of providers of this type of service (mainly account managers) was differentiating factor. The flexibility often referred to a "single point of contact" problem solving ability. External respondents also thus appreciated the professionalism of consulting services, as they could be sure, that their issues are handled until they are finished. During the interviews it was noted that some internal respondents had been noticing increasing demand for testing services (e.g. tension test for anchors provided by the OEM), that was verified by an external respondent. Internal respondents also noted that consulting services are valuable for maintaining a close customer relationship, but also a valuable source of feedback.

Training services (either part of product, or requested training events) are often related to products. For example account managers provide product trainings in installation or optical systems, whereas customers can request for HSE training. Internal respondents noted that these types of services often promotes expansion to other products and services, and promote long-term CRM. Trainings were seen as building blocks for sustained relationship, as they differentiate the company from competition, but are also part of active contacting.

Documentation was seen as important part of services. Internal use of customer relationship data (e.g. product registers, and shopping history) provided value for the customer. The value was provided as better experiences when in contact with

the company personnel, and was labelled in the interviews as availability, flawlessness, speed, and reliability when interacting with the case company. Internal respondents also noted that software products (SaaS), although not providing immediate sales, was a highly differentiating factor compared to competition. SaaS increase the efficiency of processes at the influencer group of customer´s (e.g. faster planning process). Document library provides proofs (e.g. authority requirement documents), but also product data sheets, installing guides, and other technical documentation. The authority requirement fulfilling documents on products provided competitive advantage, as implementer group of customers often were likely to repurchase from the case company due to the low product related risk (as noted by internal interviewees). During the interviews, and analysis of the data it was noted that the demand for software and documentation type of services (e.g. planning, post-documentation software) is likely to increase (verified also by an external respondent).

The most important *product related services* are maintenance, warranty (as a promise), and fleet management. These services were recognized as the most important ones by internal and external respondents. The PCB history, and providing true value for customers´ philosophy has led to the development quick response and functioning product related services. The maintenance service´s three day return of a product, with the warranty promise are highly valued by the customers. Fleet management was seen as reasonable service finance-wise (e.g. no high initial investment), but its true potential was often recognized through the effective maintenance of products, as noted by the external interviewees.

Sales services refer heavily to the availability, and the mean of contacting the case company sales organization. Customer´s valued the quick response time, ease of contacting (e.g. phone, visiting shop, or online), and the availability. This was contributed by internal responses; direct sales organization (e.g. IB data, long-term relationships) and multichannel contacting ability (i.e. online, shop visit by customer, on-site visit by personnel, and phone) provides value through availability and flex-

ibility (as in *consulting services*). External respondents also noted that sales is reliable (i.e. no mistakes occur), and that required items (e.g. documents) are found in timely manner.

The *supporting services* are often in the background, supporting other services, and not visible to the end-user. These are for example billing, customer care service, and customer data management (i.e. IB data). These services are taken as granted, but during an emergency they become valuable; for example ease of contacting financial department due to a billing problem can be valuable to a customer, as it can affect their financial situation. External respondents pointed out, that supporting services become valuable when issues occur (e.g. error notification in online shop).

The *technical support services* are services often dedicated to the influencer group of customers. In this category engineers provide services such as structural design help, product training, installation and firestop systems, but also SaaS (e.g. firestop planning) in their own context. Customer´s valued these services due to their professionalism, and the ability to provide proper documentation (e.g. drawings, or authority requirement proofs). Internal respondents noted that this group of services (and department) has grown lately, and provides excellent point of differentiation. During emergencies these services were also highly valued by the customer; for example the subsidiary can provide engineering judgements for non-standard issues. Also connecting multiple areas simultaneously in technical support was valued by customers, for example project planning support eased the sales of new products.

The *logistics services* (either provided by the case company, or a third party logistics company) of the case company are valued by their customers. Customers value these services, as some have reduced size of their regional warehouses, and some rely on the promise of product delivery for the next working day morning. For example during emergencies, the emergency deliveries by account managers were highly valued by external respondents. Internal respondents also noted that logistics

services are important, but less potent for differentiating purposes. Competition differentiated from the case company by providing in-house logistics services systematically with more variety in products as well, as highlighted by an internal respondent.

5.3 Findings of steps in service management

The active development of service business will be goal of the next strategic period. The ultimate goal is to increase the amount of sales derived from service business to a significant level, thus elevating the subsidiary out of the service paradox. The current situation provides inherent issues to the management of services, and to service business as a whole; high number of services, missing service portfolio, product-centricity, reactive service management principle, and due to the fact, that service business development and management is in its infancy at the subsidiary. The general issue decelerating the development is thus related to reactiveness to market impulses, and unstructured management principles. As regarded by multiple internal respondents, the development of service business is a time consuming process, where integrating internal efforts to external requirements properly is essential. The creation of service portfolio is thus regarded as the next, and one of the initial steps in this long-term process of developing service business at the subsidiary. The initiation of the transition to service business requires (as steps) recognizing the potential of service business, having clear service categories, clear management, given responsibility, with supporting structures. These steps were perceived from the internal interviews, and the findings are from internal interviews (unless otherwise mentioned).

a.) Recognizing potential of service business

Moving from exchange of relative value in goods (goods-dominant) to cultivating customer relationships, and helping customer´s in their processes (service-dominant) is the overall transition. The transition from product- to service centricity begins with the recognition of the potentiality of service business in developing the

overall business at the case company, as noted. For example a national research center in Finland has been invoicing for testing services, which the case company provides for free to its customers upon request (as unrecognized potential). Interviewee´s had also recognized that even though there were some innovations, and higher quality in the products, the services still were seen as more potent origin for differentiation. Also they noted that service business, and services (as internal processes) are harder for competition to imitate due to their invisibility, thus introducing sustainability. Services also contributed to the satisfaction and loyalty of customers (i.e. more satisfied if used more services), which had been confirmed through customer surveys, and data. It was also pointed out by the interviewees, that the upcoming strategic change had initiated discussions and actions (e.g. service listing update) at the subsidiary. It was clearly said that services will have greater foothold in the future (e.g. services more present), thus contributing to sales figures. The potential at the case company was thus recognized, and the strategy outlines had been received from the group. The case company is responsible for implementing the strategic changes at local level, as noted.

b.) Promoting management of services through a service portfolio

After recognizing the potential of service business, the case company should recognize the services, and types of services it produces. Part of this master´s thesis is to create the service portfolio (similar to Table 11). The service portfolio promotes the management of services in the case company, as it creates uniform picture of services to the company personnel (concretizes), as noted. Creating uniformity through portfolio was supported by terms such as service catalog, communication and visibility, productizing and documenting, and value descriptions of services. It also helps in communicating the whole service portfolio to customers (Cf. currently focus on few well documented and packaged service processes in communication). It was recognized, that due to unstructured management of services the development and marketing efforts were somewhat inconsistent, but also lacking a clear and reachable goal (there are exceptions as well, e.g. fleet management service).

Thus as an example, fleet management, and maintenance (alongside warranty) services were recognized as consistent marketing-wise. Whereas for example the current cost of engineering design services were expected to be relatively high, as such products were relatively expensive (i.e. communication inconsistency), as confirmed by external respondents. This relates to service descriptions, and packaging of services inconsistency, which is the backbone of developing and marketing services.

c.) Managing services as a whole

Interviewee´s, literature, and markets (as a response to efforts) suggest, that the services should be developed and marketed in regards of a real need (as due diligence). This doctrine dictates the marketing research process (Cf. market sensing, development, sales, and delivery stages). Although most of the provided services are developed either to cater regional or global needs (as pointed out), they still require effort to be uniform. It was noted that the large number of current unstructured services thus require further development (e.g. service descriptions, responsibilities, and value creation descriptions), whereas NSD requires all of the steps. Interviewees responded, that as a sales organization, the capability to perform market research (e.g. what creates value in a single service), describe services in detail (e.g. service type, description, producer, material number, unit, and transaction type), and to package such into a marketable service product (e.g. fleet management service) is vital for the transition. The holistic process should be iterative, as organizations and markets change – noted as keeping track on service business day-to-day. The work for describing some services in detail (e.g. services provided by account managers) had already started, as noted during internal interviews.

d.) Focusing responsibility

As noted, some services have been developed further than others (Cf. tip of the iceberg). Focusing responsibility was seen as a solution for managing the unstruc-

tured body of services, but also for overlooking services holistically. The materialization of focusing responsibility would be a new title, for example a *services manager*. Currently responsible personnel are assigned to individual services, whereas management of the holistic picture is lacking. The new title would only focus in subjects related to services (e.g. development efforts, resources and competencies for service marketing, *key performance indicators* (KPI´s), and managing body of services), as identified. As an example of a situation to be solved was the fuzzy process of service business development, recognized by internal interviewee´s. In the process development efforts (e.g. on individual service) are proceeded if customer feedback suggests so, and the idea is supported by close colleagues (Cf. a bottleneck). External respondents also noted, that building a customer relationship is a long-term and personal process, often between two individuals; a prerequisite for proper feedback for development efforts (as an example). Thus having a systematic process for further service development efforts, and maintaining long-term, personal relationships were seen vital. The internal respondents also recognized the need for enhancing competencies of the sales personnel in relation to services. These new tasks, and focusing holistically to services should be assigned to the new title, as realized.

e.) Supporting structures

Supporting structures include elements that are essential in supporting the previous steps. Creating service related training modules for personnel, and creating proper measuring and tracking system were recognized as most essential elements of the supporting structures. These two elements were seen as the force, which keeps the company on its track, following the path laid by the new strategy. The training modules were seen as individually executable modules (e.g. online) to keep hold on training costs, and securing proper competencies in the field. The training would also unify the message received by the customer in relation to services, a concern by internal respondents. Accomplishing the modules would be tracked, but also the work of individual personnel performance in the field would be tracked (KPI´s, e.g.

how many on-site consulting visits has an account manager performed). As an example, the tracking data would be used at the business review meetings with customers, as noted by the internal interviewee´s. It was found that competence enhancements also require dedicated resources (resource allocation, e.g. on human resources, and on ICT), that should be assessed.

5.4 Findings on effects of differentiation strategy on services

Services were said to have to most effect on differentiating the case company business, although the recognized product-centricity. Services are seen as add-ons on the product-service continuum; services are inherent parts of the products. There are exceptions, such as *fleet management service*; products are seen as add-ons, as the customer signs a contract to lease a product with promised uptime. Also in some *engineering services* the situation is similar; customization, and the relative importance of services is high, as pointed out. Thus the nature of relationship in most cases is more transactional (due to low inherent services, PCB and sales organization), and the offering is more product-centric. Internal interviewee´s also noted that most of the services are product-related (i.e. services as add-ons), although in the service portfolio product related services is the only category directly linked to this. Logistics and supporting services categories are not directly linked to products (or vice versa), thus being only categories with no direct links to products, but they have exceptions as well (e.g. product data related services). Even due to the high number of services (often adapted from the region) the internal respondents had noticed the relative importance of services growing (e.g. via more focus on performance, financial, and relational aspects).

a.) Current strategic position in regard to services

Respondents noted that the development efforts for NSD (or enhancing a current service) starts with a pure market pull. This has been the subsidiary scenario in the past decades; reacting to market demands. Also the different offerings (e.g. product-maintenance package, or product training) have had relatively limited services in

the past. For example making extensions, or exceptions in meeting customer´s needs has been the privilege of key accounts, as noted by an internal interviewee. The direct sales organization has compensated the limited services in terms of long-term relationship, and nurturing of customers. Lately announced services (announced in the past decade, e.g. fleet management, business review, and engineering services to some extent) have started to show legal bonds forming between the companies, symmetric information exchange, and operational linkages respectively. Adaptations to customer needs are relatively low as noted in the interviews; suggesting relative importance of standardized services at the subsidiary. An example of relatively low adapted service is the emergency delivery of products (adaptation from regular delivery). Whereas design services are pure adaptation situations to customer´s needs, but the service itself is not adapted. As noted by an internal interviewee, key accounts receive special attention in terms of customizing services (e.g. customizing fleet management contracts, and terms). A similar situation is with cooperation; cooperation with key accounts has led to development of new services (e.g. in planning software).

The strategic goal is to differentiate through services, thus the interviewee´s responses focused on differentiation, expansion in services provided (e.g. SaaS, and other tools to support processes), and on the growing customer group of influencers (and their decision making units). As identified, the offering in the future could be even more bundled, as the value creation descriptions (and even individualizing service elements from the product) as concretization effort is implemented. As pointed, the customers will receive more consultation due to the transition to service dominancy (Cf. increasing customer loyalty through interactions), and thus long-term CRM is supported. New and current services are able to cater the future needs better, as the reactive development turns to proactive (proactivity seen prominent, as noted in the interviews). Service business is seen as a mean to deepen customer relationships (i.e. increasing cooperation), thus increasing the feedback through direct customer contact.

The general opinion derived from the internal interviews is that the role of services will increase considerably at the subsidiary, but also an increase in service demand has been noticed (e.g. fleet management will soon outperform new product sales). A common notion was that the relative importance of goods will be replaced with by the relative importance of services. As noted, services will increase the customer loyalty, and long-term orientation of relationships, but also enables expansion to other product and service categories to be offered for the customer. Thus the current strategic position regarding services stress mainly on the upcoming strategic direction (regarding reactivity and standardization of services), and heightened focus on offering and nature of customer relationship.

6 DISCUSSION

In this chapter the results of the project are presented discussed, and their significance are evaluated. The results are evaluated based on the practical perspective, but also from the theoretical aspect. Further development directions are assessed in each chapter. A summary of evaluating the solutions, and limitations are given in a separate chapter, where further study directions are also proposed. The used research method also raises questions about trustworthiness, and quality of the study, which are assessed in a separate chapter.

6.1 Results of the project

The following chapters assess the research questions in the presented order. The following chapter discusses about creating the service portfolio (i.e. categorization). In the subsequent chapter the effects on management of services through a service portfolio are assessed (i.e. steps). Third research question is discussed in the next chapter, where strategy-wise directions are assessed (i.e. effects). The results are analyzed, and their future implications are discussed.

6.1.1 Developing management of current service portfolio

On behalf the service portfolio, the study was limited to find categorization of services, supported by the internal (and external) interviewees of the case study. The case company has a large number (well excess hundred) unstructured services, which ultimately had resulted in focusing only on services that are valued high. The most valued services (often by customers, and by the personnel) are mundane services, such as *fleet management*, and *maintenance* service. The situation had escalated to a point, where the management of such large body of unstructured services became too challenging. The categories were supported by the categories found in the extant literature review. The literature provided effective means of service categorization, as general service categories provided passage to assess the service strategy related service categories. The previously selected theoretical service cat-

egories were SSC, PLS, PSS, and PDS strategy related service categories. Preliminary categorization of services (as in Table 11) is used, until the suggested categorization of services is introduced. The categories were selected according to the categories proposed by internal respondents, and compared to external responses, and reviewed against theoretical information. The presented categories are named as internal interviewee´s expected; by the value or result the customer receives.

a.) SSC service category

Services that support client´s action in relation to supplier´s product (SSC) are *consulting*, *training*, and *documentation* services. These three were selected as SSC, as provision of such services requires knowledge of customer´s operations and processes in order to support their core activities. Documentation (as a whole) was seen as an important service by the customers, either as a library of documents, or the ability to use information to support activities.

b.) PLS service category

Services in product lifecycle services (PLS) category are *product related*, *sales*, and *supporting* services. These three were selected as PLS, because often these services are integral parts of products, and thus the cost of providing such service is in the price of the product.

c.) PSS service category

Process supporting services (PSS) category services are *technical support* services. This category service is often highly valued due to the nature of customized service, thus the customer´s often have motivation to pay for such. PSS category is not always related to OEM products.

d.) PDS service category

Process delegation services (PDS) category services are *logistics* services. Services in this category are aimed for end-users, but they do not remain in control of them. Pricing of these services can be based on indicators, and they are often customized.

e.) Suggested categorization of services

As noted earlier, both internal and external respondents replied that *product related services* (e.g. maintenance), *consulting and availability*, and *logistics services* are the most important service categories. *Sales services* being a vague category, it is incorporated to the *consulting* category (although sales services translated as availability and flexibility; elements worth mentioning to customers). Also due to the increase of demand in testing services and expected differentiation, the consulting category is renamed *consulting and testing* category. Similarly, but also due to strategic differentiation objectives towards software, the documentation category is renamed *software and documentation*. Technical support services category is renamed *engineering services* category to resemble better the target audience. Other categories will remain as they were in Table 11. The suggested seven service categories are presented in Table 12.

Table 12. Suggested categorization of services.

Strategy related service category	Suggested category	Other
SSC	**Consulting and testing**	Includes testing services (e.g. pull tests to determine tensile strength).
SSC	**Training services**	-
SSC	**Software and documentation**	Includes software as a service (SaaS, e.g. firestop planning software, business reviews).
PLS	**Product related services**	Important services that maximize product uptime, and are important in emergency situations.
PSS	**Engineering services**	Includes similar elements as the other categories, but directed mainly to influencer customer group.
PDS	**Logistics services**	Also provided by third party logistics companies.
PLS	**Supporting services**	Often invisible to end-users, but are important in emergency situations.

Connecting strategy related service categories to the customer groups is difficult. It was noted in during the interviews, that training and supporting services are mainly dedicated for both customer groups. Consulting and testing, product related, and logistics services are mainly dedicated to implementer group, and the remaining two (software and documentation, and engineering services) mainly for influencers. The match between categories in theory, and found categories at the subsidiary represent similarities (e.g. engineering services truly are process supporting services). All other matches were done accordingly; comparing the service strategy related description to the introduced categories, and services they incorporate.

During the internal interviews the somewhat converging views on the (to become at that time) service categories was surprising. The challenging task was to link the founded categories to theory related categories due to exceptions, and company personnel views on the subject (e.g. fleet management service seen as a product related service at the subsidiary). Fleet management (as a single service) is a service provided for fee, that has process delegation elements, but as a single service related

to products, it is in the PLS category. Additional challenge arose also from the initial seventeen suggested categories, which was reduced to the current seven categories. Thus the interview framework had “break-in” questions; initially talking about general aspects of services while taking field notes, and then move on to the more specific questions (e.g. regarding categorization). Although, not all the respondents recognized what service were; thus analyzing the transcribed text was laborious. The responses from external interviews were mainly focused and short, thus requiring less analysis. Understanding the company´s own principles, and ways of conducting business is thus paramount, also contributing to the interviews (e.g. mundane vocabulary). It should also be noted, that PSS and PDS category services are often provided for fee (not true at the case company, or cost transferred to the product).

The purpose of the service portfolio is to have more focus on the management of services, and provide consistency to the sales organization case company. The case company can use the portfolio in multiple ways (significance); it can be used to communicate services as a whole internally, but also externally; there is a perspective on all of the service categories (Cf. list of services in past); addressing KPI´s to individual services ultimately can lead to management of single categories (Cf. management of fleet management service); economic perspective to services (e.g. profit and loss statements, return on investments); developing service business as a whole (Cf. single NSD, as in literature); points of differentiation become visible (i.e. competitive advantage); focusing marketing efforts to correct audience (Cf. influencers versus implementers); evaluate own portfolio to competitors´ portfolio (e.g. competitive analyses). The service portfolio significance becomes evident, as it has a key role in the overall service business management. Exploiting such potential actions require dedicated resources (e.g. ICT investment for tracking), and assessment of the gap between risks and benefits.

The service portfolio benefits are thus great, but initially difficult to concretize. Thus the effects of creating the service portfolio can be seen in further service busi-

ness development actions, where the most significant benefits are, heightened consistency, more discussion on the subject, communication, and grasp on the subject in general. Service portfolio is not relatively dynamic process, or procedure, but rather a static view (at category level). Thus the further development and action suggestions (regarding first research question) are related to the individual services and categories:

- Addressing all individual services to categories
- Describing individual services in detail
- Addressing KPI´s and tracking metrics to individual services
- Communicating the service portfolio at the subsidiary

Addressing any of the mentioned development areas requires allocation of resources. All of the further actions are internal, except describing some services in detail requires customer contacts to determine some attributes (e.g. value creation element). These further actions were not included in the solution, as the limitation was to create a service portfolio. No attributes, such as service description related, KPI´s, or tracking metrics were provided, as they are under development at the subsidiary currently.

6.1.2 Promoting management of services through service portfolio

Creating service portfolio is part of the second step in the overall management of services at the subsidiary. The initial step was to recognize the potential of service business. Due to the unstructured management of services the case company had drifted to the *service paradox*, where the cumulative investments in developing service business did not result in high enough return on investment. The case study illustrated that service paradox situation has not occurred due to poor individual investments in services (e.g. NSD on non-profitable services to company, or non-valuable services to customers), but rather due to the focus only on few important services (i.e. poor overall management, and reactivity to market changes), and due to just recently recognized potential in service business (e.g. pull tests, and other

services for fee). Thus the management of services (and service business as a whole) is in its infancy at the case company.

Figure 18 presents the suggested steps in service management, where the service portfolio itself is a part of a larger picture. The journey is currently between steps one and two; some issues have been resolved (e.g. recognizing potential), but some still remain unsolved (e.g. consistency). The steps promote a proactive approach to markets (as the four stage process), but also promotes structured management of services for the future. The steps resemble the initial steps to the transition, but also NSD process, and they need to be revisited as time passes. The interviewee´s responses suggested having this time-stressed model, which on the other hand provides a clear path to follow. Steps two, and three are the most time consuming (and provide inconsistency to the path), as the service portfolio (as is) does not solve the question of managing the subsidiary services.

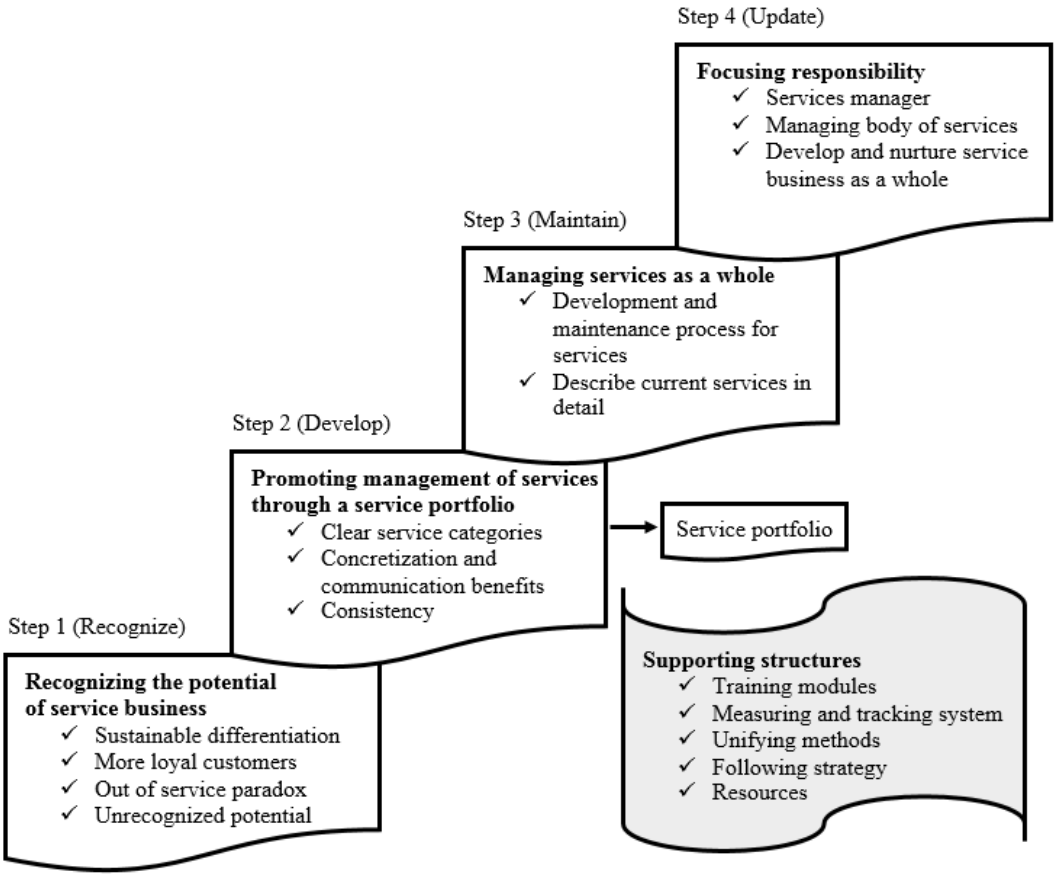

Figure 18. Suggested steps in service management.

The purpose of the iterative process is thus to provide consistency to service management. It can be concluded from the internal interviews that the reactivity has led partly to the service paradox situation, as the link of structured market sensing (as noted in literature) has been missing. There is a process for carrying out a NSD process, but lack of systematic collection and analysis of feedback acts as the bottleneck, as responded. This is linked to the unstructured service provision (Cf. number of services at the subsidiary), as companies lacking the capability to sense markets (e.g. potential opportunities) often do so, as the literature suggests. The process itself introduces proactivity through sensing constantly (*recognize*) the markets, but relatively large numbers of customers (with similar sales figures) can be challenging to handle. Involving network partners (e.g. 3rd party service providers) in service development projects (e.g. via workshops) increases the possibility of success. Handling these challenges, and becoming proactive requires investments from the case company. Concretizing services also brings consistency to the service management. The demanded service portfolio creates overall picture of the situation, whereas the detailed descriptions opens the opportunity to manage services as a whole (*develop*). Processes, workshops, feedback, and other discussion promoting events will help to maintain the service portfolio updated.

Sales personnel competency enhancement was seen as the most immediate need after servitization of the PCB (proposed also in the literature). To link the process seamlessly to the external word, the subsidiary personnel interacting with the customers (e.g. field engineers) should be supported by proper training (*maintain*). The training reduces the risk of failure during the "moment of truth", unifies working methods (Cf. heterogeneity of services), and ultimately leads to more loyal customers. A feedback loop is required for further developments and updates, thus introducing proper measuring and tracking (e.g. via CRM system) is required (*update*). The proactive and iterative process (i.e. daily) steps for developing service business as a whole are called *recognize*, *develop*, *maintain*, and *update* (RDMU, as in Figure 18). One significant conclusion is that previously mentioned steps require authority to be managed (e.g. services manager), in order not to fall back to the poor man-

agement of services. These suggestions can increase the awareness of service business potential at the case company, and thus can ultimately lead out of the service paradox situation by increasing profitability of services. As a conclusion, the most valuable and significant effect noted during the case study is the introduced consistency, and longevity through the steps to service management. Thus the further development and action suggestions (regarding second research question) are related to the steps, and supporting structures:

- Follow the process and iterate it; recognize, develop, maintain, and update service (business) opportunities at any level continuously (Cf. NSD)
- Focus responsibility; strategic-operational upper level responsibility to manage service business as a whole (a responsibility description)
- Estimate resource requirements for supporting structures to avoid bottlenecks
- Introduce proactivity through market sensing; provide structured services, and proper feedback and analyzing process
- Create training modules to unify the message to external parties, track and measure successes and failures (e.g. through CRM)

These suggestions require heavy investments and detailed development, and should be considered as a long-term, iterative goals – with a goal to exit service paradox. As proposed, these are steps of strategic change which take place over several years (as service business development normally). Structural, organizational and business changes take years, but as a trade-off they create more sustainable competitive advantage than just single services (e.g. fleet management service launched decade ago, and now surpassing power tool sales at the subsidiary). The notion of *categorization of services* (i.e. service portfolio) in the research question limited the perspective of the solution by also converting part of the interview framework to suit the question itself. Thus for example, organization, company culture, resources (operant, or operand), competencies, NSD processes, networks, nor customers were under scrutiny of the study.

6.1.3 Effects of differentiation strategy on service portfolio

Traditionally the case company has been goods-dominant due to the PCB history, providing *product related services*, and *logistics services* mainly. These services have been adjusted to correlate with the prevailing market needs (e.g. currently delivery of products for next working day). Late adjustments to markets are allocation of resources to *engineering services* (as a whole), and *fleet management* service as an individual service, as noted during interview. Often the adjustments have been relatively minor, for example adding *theft security* (i.e. subsidiary insures, and takes financial risk of a tool, if it is stolen) element in fleet management service. The services, as such, are mostly developed for regions (i.e. the group has the final decision), and they are localized slightly (e.g. billing). More recent adjustments, in general, have been concerning localization of services (e.g. development of firestop planning software due to key account feedback). Thus the overall selection of services have changed to be simpler (e.g. fleet management contract from dozens of pages to a single sheet), introduction of more customer focus (e.g. more localization), customers are becoming more demanding and sophisticated (e.g. requiring proofs, and other documents, such as business reviews), and new customer segments arise (e.g. influencers in general). The current selection of services has developed over time due to reactions to market changes (Cf. strategy aligned, structured development).

The development efforts (e.g. process of developing fleet management) thus resemble the path moving from *basic components* (I) strategy to *integrated components* (II) strategy, where the nature of relationship with the customer is deeper. The current identified strategic position (integrated components strategy) is promoted through the operational linkages, information exchange, and legal bonds that are forming between the partners. These all are easily witnessed for example through fleet management service (finance-related), which requires all of these areas to create value. Although the transition to this strategy is not supported by the adaptations, and cooperation elements fully (as noted, key accounts receive more attention than regular accounts, e.g. on adaptations). The motive for this transition has been changing customer needs and demands, as confirmed by the internal interviews.

How does this effect to the services then? Although the services in general will be pushed to the subsidiary from the region, significant changes could be seen in local adaptations, service customizations, and alignment to the new service strategy. These changes will be the result of heightened cooperation (proactivity), and more operational and informational linkages with customers (localization). The selection of service will be also expanding in numbers (e.g. SaaS), ICT will play a bigger role in services (e.g. electronic business, or data management), the services will be clarified (e.g. service descriptions), and some services will change from free to for fee (e.g. pull test service). Due to the possible changes, an increase in supporting services was seen inevitable (e.g. increase in help desk demand), as responded. These changes could ultimately increase the current clientele loyalty (and length of relationship), but also create interest in new customer segments (e.g. in influencer group). The future strategic direction points thus to *integrated solution* (IV) strategy. Thus the selection of services is likely to be affected by the differentiation strategy by:

- Expanding number of services (e.g. in SaaS, design, and testing services)
- More localized services (i.e. more local development)
- Detailed description of services (i.e. to provide more value)
- The services will focus on the relational aspects more (e.g. lengthening customer relationships, and growing loyalty)
- Clearer presentation of all services (i.e. service portfolio, e.g. for marketing)
- Approach with services from reactive to proactive (e.g. to preventive)
- Increased adaptation and customization for regular accounts, but also greater extensions and bundling of offering

Companies like *KONE*, and *PBM* (in table 2) have also undergone similar steps towards service business (from I to II, and from there to IV), with similar motives; focusing on cooperation with customers, and expanding offering range. The conclusion, and purpose of the strategic differentiation is thus to promote localization, and proactivity to service business. As clearly indicated by the interviewee´s, the services had mainly pushed to the subsidiary from the region, and local efforts were

developed further if the situation was favorable (fuzzy process). Many multinational companies surely also ponder on the question whether to let the subsidiaries localize, or have more standardized approach? In the literature it has been also noted that services are less reactive to market fluctuations (e.g. to recessions). Many examples provide a proof that localization (to some extent), or margin to have localized service business development efforts are justifiable. Surprisingly developing and launching a new service does not necessarily consume much of resources (e.g. firestop planning software was initially developed in-house on a spreadsheet form, as a proof-of-concept), versus launching a new power tool globally, as a note from the interviews. The direct sales organization also promotes localization through high number of daily customer contacts, but also proactivity. Cooperation with customers will be likely to increase due to the differentiation strategy (e.g. more customization and adaptation, longer relationships and more loyal customers via service orientation), as noted by the customers´ during interviews; interacting through services experienced as valuable (e.g. emergency delivery). Of course strategies are not rigid, and situations change; these changes can effect either negatively or positively to the subsidiary, that can have long-term effects (e.g. on service paradox situation). Thus backing off should be considered also as an option, and a question should be asked; can we get out of the service paradox without introducing new services? Is localization and keeping focus on current selection of services more vital? Thus the ultimate question is how service differentiation strategy is implemented at the subsidiary. Markets are full of potential opportunities (with inherent risk), thus as a conclusion, the subsidiary should carefully assess the service paradox, and scenarios of exiting it; market possibilities versus company capabilities and resources (and execution period).

The last research question (and its answer) being speculative and rather subjective, it proposes even more questions. Thus the further development and action suggestions (regarding third research question) are further discussable topics related to service differentiation strategy effecting the selection of services:

- Localization or standardization in services? (Although some localization evident)
- How to change from reactive to proactive?
- How to introduce cooperation, service adaptations, and customizations in services?

These further questions are the result of evaluating an expected outcome (vague), albeit extremely suitable for strategic change era. The question of localization versus standardization (or somewhere between) caters the two latter questions. Thus the selected orientation (localize or standardize) also effects the selection of services. The evaluative, speculative, and subjective nature of the third research question was limiting the factor for this research question, but due to the same reason, explicit answer should have been unexpected as well.

6.2 Solution evaluation, limitations of the study, and further research

The case problem goals of creating solutions for; constructing service portfolio, suggesting near future steps in service management, and providing expected outcome of such actions were reached. The set goals were reached, but there is still room for further development. Benefits of the project for the case company:

- Clear portray of services through a service portfolio
- Describing the categories in detail, and addressing known individual services to categories
- Clarifying important next steps in the service business development at the subsidiary, creating further discussion on the subject
- Noticing supporting services being critical to customer´s value experience
- Noticing that the product-centric subsidiary is rather service oriented (i.e. fleet management sales soon surpasses tool sales)
- Strengthening the view on the potential of service business (i.e. strategic alignment), unifying the internal respondent´s views

- Learning about service business; developing services does not always require heavy investments, introducing proactivity
- Providing constructed view on service business by linking theory to practical problem
- Promoting the management of services at the subsidiary; grasping recent strategic change even more

Some of the neglected areas of service business management were discussed earlier. Further development and future study areas (as limitations), and notions that would benefit the case company in the subject context:

- Detailed development of service business (e.g. service descriptions), locating all services to categories
- Flexibility of the company to customize and adapt services
- Creating the proactive and iterative RDMU process (i.e. for managing service business as a whole)
- Service business competition analysis (company environment)
- Creating training modules for aligning strategic-functional understanding, but also increasing competencies (i.e. proper resource allocation)
- Assessing the question on proactivity and localization
- Effects of service differentiation strategy on selection of services is vague
- Assessing the required competencies and resources for future (further study on resources required for implementing the suggested steps, e.g. human resources, and ICT)
- Developing KPI´s for tracking service business
- Financial evaluation on services (e.g. on service paradox, or on NSD being occasionally economical)

There is also room for enhancing research methodology related topics in service business development context. Further actions, as limitations of the study, that could benefit (or could have benefitted) the company in services context:

- A cover letter, or other mean of explaining purpose of the study should be sent to all interviewee´s before interviews
- More spread in selecting the external interviewee´s (e.g. less sales channels used)
- Introduce management theories to match empirical part (i.e. second research question), e.g. *management* a vague term (difficult to connect to theories)
- Defining research questions differently (alternative for previous suggestion)
- Involving network partners in the research (e.g. logistics company)
- Selecting more suitable method for studying services and customer context (e.g. action research on services)
- More focus on single subject of study at a time (e.g. focusing only on a single service in development)

The further development areas are due to the limitations, and boundaries of the study, as the main focus was on construction a service portfolio. But also due to the time limitation on for example describing the services in detail, or having further interviews, or workshops. Thus further development of the subject are supported, and contributed by further research questions (derived from interviews and solutions). The new set of research questions are reactions to the initial research questions (that were answered in this study), and they are as follows, in respective order:

1. *How to create a process for recognizing valuable services?*

2. *How to link network partners efficiently to service development efforts?*

3. *How to assess the benefits between localizing services and standardizing services?*

These further research questions can be answered already partly through the current study, but further study should be conducted. Also these questions can be assessed better through theoretical information (Cf. current mismatch of solution to the second research question and theory). The first research questions could assess NSD

processes, but also the value in currently provided services (thus promoting localization and proactivity). The second research question is linked to the first one (as seen in this study; network partners should be inherent part of developing services, also noted by the internal interviewee´s). The third research question would contribute in finding out industry specific (and case sensitive) means to either localization or standardization of services.

6.3 Evaluating quality and trustworthiness of the study

Assessing the quality, and trustworthiness of the study is important, as the selected method for conducting the research was case study. The reliability and validity of the study (as quality criterion), with credibility, transferability, dependability, and confirmability (as trustworthiness criterion) of the study are assessed in order to contribute to overall quality of the case study.

The *credibility* of the study is significantly increased due to the sheer number of interviewee´s, both internal and external. This is promoted by data triangulation (e.g. using documents, and transcribed text in analysis), and the non-disturbed chain of evidence (report itself). Of course chain of evidence is not complete, or absolute, as the transcribed interviews, or the audio files cannot be published (to protect privacy of individuals, and company related information). The *transferability* of the results are somewhat challenging (due to case sensitivity), but for example the service portfolio, and the next suggested steps in service management can be transferred (if adapted) to another company, and case, with relatively similar conditions. Transferability is promoted by the case company descriptions, interview framework, and by the results as such. As the researcher, *dependability* is a matter of self-control; maintaining a neutral perspective on the subject throughout the study (from receiving the task, to returning the task) is important. Chain of evidence (as transparency to the research) reduces the dependability, and understanding the reasons leading to current situation (from past to current) of the subject via the collected data contributes to transparency. *Confirmability* arises from these previously mentioned topics (chain of evidence, and results); the study was handled as objectively

as possible, that has resulted in a transparent research process (e.g. solutions are results of feedback). Of course a case study is always somewhat subjective, as a person (or persons) will generate the result (Cf. phenomenological study).

Based on the four trustworthiness criterion the quality of the case study is assessed through reliability and validity (quality criterion). Two or more researches would end up with approximately similar results of the study, if they were given the same task, as in this master´s thesis. This notion is supported by the research questions (if they were fixed), and the subject under study; the answers related to categorizing services were already converged during interviews, thus similarity could be expected. Same could be expected from the second research question; its solution is derived by arranging the steps (e.g. recognize potential, give responsibility, and manage services as a whole, as converging answers) into a rational, chronological order. The solution contributing the least to reliability is the third solution, as it is heavily depended on the theory it is reviewed against. Thus the overall study can be confirmed reliable (*reliability* of the study), because the solutions are a result of feedback, rather than a subjective and pre-determined solution of the researcher. Also the results are valid (*validity* of the study), as the results have a good fit to the context, and the results were revised and scrutinized multiple iterations reliably.

As a practical answer the introduced service portfolio (solution to research question one) cannot be generalized due to case sensitivity (i.e. developed for sole purpose of a company). Similarly the process model (solution to research question two) cannot be generalized due to the same reasons, but also due to that even theories provide only implicit processes or models for adaptations (Cf. four stages of NSD). The third research question itself was also a rather subjective (i.e. concerning future), thus the solution for it should be considered as vague, speculative and evaluative (although based on analyzing interview feedback in comparison with the theories). As a conclusion, the quality and trustworthiness criterion of the case study were identified, and the study was carried out successfully by assessing them iteratively.

7 CONCLUSIONS

Product-centric companies have been seeking growth, and steadiness in their businesses by changing their way of conducting business from individual interactions to more relationship based methods. Companies transition from goods-dominant business model to a model, where relative importance is on services. Often this transition is not carefully managed, and the service provision consumes more resources than it returns. This situation is called a *service paradox*. The product-centric case company has drifted to the service paradox due shortcomings in service management at the subsidiary, that had resulted due to centralized service management principles, but also due to service development and launching from the group. The case company provides well excess of hundred services to its customers, whereas less than dozen of those are well known, packaged, marketed, sold, and tracked – in other words, managed. The well managed services are often product related, although the company personnel noted that services actually differentiate the company more from its competitors, than the actual products. Records also show that the more a customer company uses the case company services, the more satisfied they were. These reasons, with the strategic change initiation, acted as the motive for conducting this master´s thesis research project.

Case study was selected as the research methodology, as it provides a rich point of view to the subject under study. Theoretical part of the report focused on two broad service business branches; on (1) marketing logics and service strategies, and on (2) categorization of services. The theoretical framework used in this study was constructed to suit the case from the extant literature review, with focus on service strategies and categorization of services. Data was collected through phone interviews from selected company personnel, but also from selected customers. The total number of interviews was twenty-one; eleven internal, ten external. Company personnel also provided documents to support the case study. Creating a clear categorization of services, a *service portfolio* was the main goal of the study. The subsequent aims were to assess the management of services via the portfolio, and to as-

sess how the portfolio is affected by the late initiated service differentiation strategy. The goals were set to support internal management of services at the case company.

The first research questions is; *How to develop the management of current service portfolio?* The created service portfolio (as in Table 13) is the answer to the first research question. Currently the service portfolio (as in the research question) was missing, as services were only partially listed, and not categorized.

Table 13. Created service portfolio.

Strategy related service category	Created category	Customer group
SSC	**Consulting and testing**	Mainly contractors
SSC	**Training services**	Contractors, constructors, and designers
SSC	**Software and documentation**	Mainly designers, and constructors (software)
PLS	**Product related services**	Mainly contractors
PSS	**Engineering services**	Mainly designers, and constructors
PDS	**Logistics services**	Mainly contractors
PLS	**Supporting services**	Contractors, constructors, and designers

SSC - Service supporting the client´s action in relation with the supplier´s product
PLS - Product lifecycle services
PSS - Process support services
PDS - Process delegation services

The created service categories in Table 13 provide more consistency, and focus on the management of services at the case company. The outcomes of such work are hard to concretize, as the categories (as is) do not provide much value. The power, value and significance of such work are materialized thus in further actions; understanding the entirety and integrity of services, bringing initial consistency to the management of such. At the case company the created categories act as a start for the systematic management of services, where further actions on individual services can begin, such as measuring and tracking. The service portfolio serves as unifying medium between services and the case company personnel. The latter are responsible for the further actions on evaluating potential benefits, and possible risks on

service business development. Document describing of each category was provided, where known individual services were allocated to the categories respectively.

The second research question is; *How categorization of services promote the management of services?* The four steps, and supporting structures as a process is the answer (supported by Figure 19).

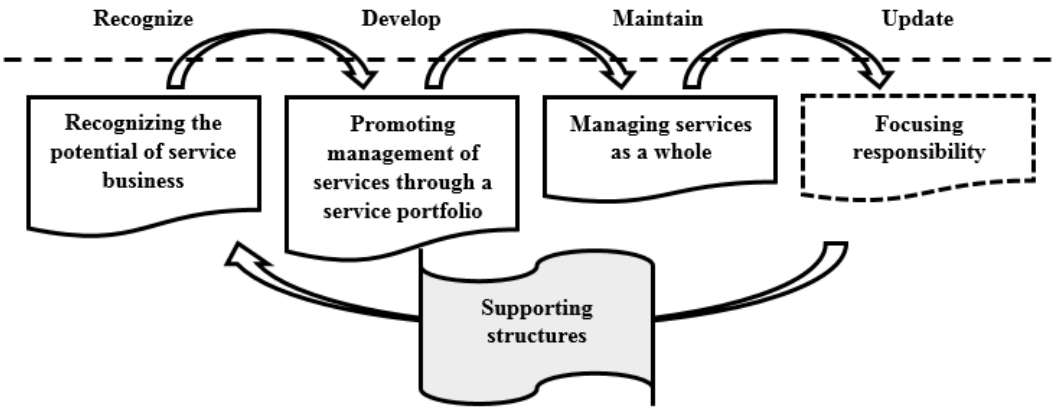

Figure 19. Iterative process of managing services.

During the case study it was noted, that the service portfolio is a part of a four step continuum. The initial step introduces motive for having service business, supported by the service portfolio that enables the holistic service management. The steps resemble new service development process at a broader view, and require allocated resources as supporting structures to manage the overall changes. Also responsibility should be given to a new title to overlook services more effectively than before. Service business potential was already recognized at the company, and the service portfolio was created. The steps are the initial suggestions, and a possible path for the case company to transform its service business profitable, in order to exit the service paradox. Of course ultimate decision is done at the case company, but the process provides the next prominent steps to follow. The part over the dotted line in Figure 19 represents the suggested daily process of managing services, whereas the lower part represents the business, strategic, and organizational changes required.

The third research question is; *How does the service business differentiation strategy affect the future selection of services?* The answer to the third research question is supported by Figure 20.

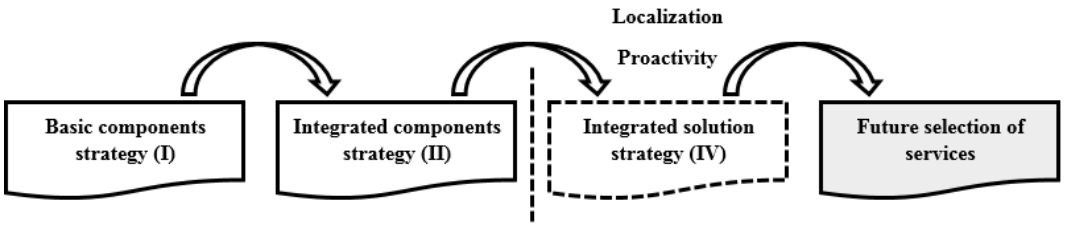

Figure 20. Strategy change effect on selection of services.

The effect of service differentiation strategy on the future selection of services was examined initially by studying the past, and current strategic position of the case company. During the case study it was pointed out, that the nature of relationship had been deepening in the past, introducing more collaboration with the customers, and thus pointing out to the current *integrated components* strategy, as in Figure 20. Currently the offering, especially services are rather standardized, and adaptations and customizations are performed utmost for key accounts. Thus the expected expanding number of services, and heightened cooperation points to *integrated solution* strategy. As a solution for the third research question, the case company is likely to introduce more local development of services and adaptations, thus requiring more proactive approach to markets. As the solution is evaluative, the effects of differentiation on selection of services should initiate further discussion at the case company on localization versus standardization, on introducing proactivity, and on further collaboration with customers, regarding services.

As a conclusion, the set goals were achieved. The service portfolio as the main goal, and its successor solutions support the product-oriented company in systematic management of services, strategic differentiation via service strategy, and long-term goal of exiting the service paradox. Valuable future research topics, in regards of service business development at the case company are related to; (1) recognizing valuable services, (2) introducing network partners in service development efforts, and (3) assessing the gap between localization and standardization of services.

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Service business lexicon with descriptions. Low standardization of vocabulary causes some complexity in the service business (Mathieu 2001, p. 52), e.g. generalizations causes communication issues (Jacob & Ulaga 2008, p.250).

Table. Service business lexicon (Jaakkola et al. 2009, pp. 13-14; TEKES 2010, pp. 6-9).

Term	Description
Service business	Business in which a service forms the basis of value creation. Terms such "service business" and "solution business" are used in the field. Exchange of goods is not considered service busienss.
Industrial service	A service provided by a business to another business. A service supports the industrial value creation process, or supports use of industrial products.
Service	Activity, or combination of activities that are carried out to fulfil the needs of a customer through interactions.
Service product	A standardized, and documented product based on a service. Can be modular, and thus can be customizeable to customer´s needs.
Service module	A part of a service product. Can be based on standardized work action, or a combination of such actions.
Service package	A combination of service products, or services to meet a specific need. *A documented service that helps sales and marketing of intangible services.
Service portfolio, Selection of services	All service products, and services of a service provider, or a group of service providers.
Service production	An organized activity, where a service, or a service product is produced and the obligations of service contract are fulfilled.
Service contract	A contract between the buyer, and the provider of the content, production, and terms of a service, or a service product. Oral, or written, based on consolidated practice.
Value creation	An activity in form of product, service, or other activity, that produces operating value for a customer. Customer has significant role in value realization.

Primary reference: TEKES 2010, pp. 6-9

*Reference: Jaakkola et al. 2009, pp. 13-14

The upper part of the table provides differences between G-D and S-D logics. The source of economic growth in the table provides a rigid difference between the logics. The lower part of the table provides transition examples between the logics.

Table. Differences between G-D and S-D logics (adapted from Vargo & Lusch 2004, p. 7; Vargo & Lusch 2008, p. 258).

Criteria	**Good-centered Dominant Logic**	**Service-centered Dominant Logic**
Primary unit of exchange	The unit of exchange is primarily goods. The goods serve primarily as *operand* resources.	In exchange benefits of specialized competences (knowledge and skills), or services are acquired. Knowledge and skills are *operant* resources.
Role of goods	Goods represent end products, and are *operand resources* . Marketers take matter and change its form, time, and possession.	*Operant resources* are embedded in goods (embedded knowledge); they are intermediate "products" used by other operant resources (customers) as appliances in value creation processes.
Role of customer	Customer is the recipient of goods. Marketers segment, penetrate, distribute to, and promote them. Customer is an *operand resource* .	Service is coproduced with customers. Marketing is a process of this interaction. Customer is primarily an *operant resource* , and occasionally an *operand resource* .
Determination and meaning of value	Value determined by the producer. Value embedded in *operand resource* (goods), defined as value-in-exchange.	Value determined, and perceived by the customer on basis of value-in-use. Value arises from using *operant resources* , sometimes via *operand resources* . Firms only make value propositions.
Firm-customer interaction	Customer is an *operand resource* . Actions are taken on customers to create an exchange (transaction) of resources.	Customer is primarily an *operant resource* . Customers actively participate in relational exchanges and coproduction.
Source of economic growth	Wealth obtained from tangible resources and goods. Wealth consists of owning, controlling, and producing *operand resources* .	Wealth obtained from application, and exchange of specialized knowledge and skills. It provides a passage to future use of *operant resources* .
	Making something (goods or services)	Assisting customers in their value-creation processes
	Value produced	Value co-created
	Customers are isolated entities	Customers in their own context and network
	Resources mainly operand	Resources mainly operant
	Customers as targets	Customers as resources
	Priority on efficiency	Efficiency via effectiveness

Following table provides detailed information about the four different service strategies (*I*, *II*, *III*, and *IV*). The table comprises of detailed attributes of cells, motivators, and paths with related outcomes of the case companies. The lower part of the table provides examples of real-life companies, and their transition paths, starting always from *basic components* strategy (I).

Table. Detailed information on bundling strategies and related cases (Penttinen & Palmer 2007, p. 555, 560).

	Basic components (I)	**Integrated components (II)**	**Basic solution (III)**	**Integrated solution (IV)**
Offering				
Bundled	No	No	Yes	Yes
Extension in meeting customer needs	No	No	Yes	Yes
Nature of relationship				
Operational linkages	LO	HI	LO	HI
Information exchange	LO	HI	LO	HI
Legal bonds	LO	HI	LO	HI
Cooperation	LO	HI	LO	HI
Adaptations	LO	HI	LO	HI
Description	Basic offering, limited service or extension	Basic product, but key element in another offering (requires strong relationship)	Offering includes extensions, but with transactional relationship	Complete offering, close relationship
Benefits	Simple, costs are clear	Enhanced relations, strong R&D, possible innovation	Differentiation via more complete product	Strong relationship (value-added), possible innovation and co-development of product
Drawbacks	Differentiation limited	CRM costs	Complex product involves bundling costs	CRM costs
Examples	Basic components, e.g. nuts, and bolts	Integrated sub-assembly components (e.g. automotive, or aerospace industry)	Bundled offerings, such as application service providers, or telecommunications	Full service contracts (industrial maintenance)
Case (path)	**Move 1**	**Move 2**	**Motivator**	**Outcome**
SKF, moving to assured operation capacity (**I-III-IV**)	Bundling products and services.	Operational linkages, and information exchange.	Customer needs (reduce number of suppliers), steadier revenue stream.	Higher profitability, higher revenue stream and customer retention.
KONE, moving to availability (**I-II-IV**)	Focusing on cooperation and operational linkages.	Reconstituted package via bundling (built-in diagnostics).	Decline in new installation business, customer demands.	Growth and more steadiness in revenue stream.
Lamor, moving to insurance and risk management (**I-III-IV**)	Extension of the product range.	Information sharing, knowledge management for Environmental Action Centers.	Customer needs (increasing readiness to react is not customer´s core competency), desire to maintain direct contact with customer.	Lamor plays central role in Environmental Action Centers.
PBM, moving to NPD as a service, (**I-II-IV**)	Established relationships with its customers.	Extension of the product range (web cameras, web-based CRM).	Quality concern by the customer, PBM´s desire to improve reputation for quality.	Revenue growth, increased profitability, regaining of customer confidence

Service package describes the content of service, and the relating factors. The packages contribute sales, and marketing of abstract, and intangible services by making them more “tangible”. Clearly stating benefits, and content will decrease the risk experienced by a potential customer; convincing value becomes straightforward. (Jaakkola et al. 2009, pp. 11-12)

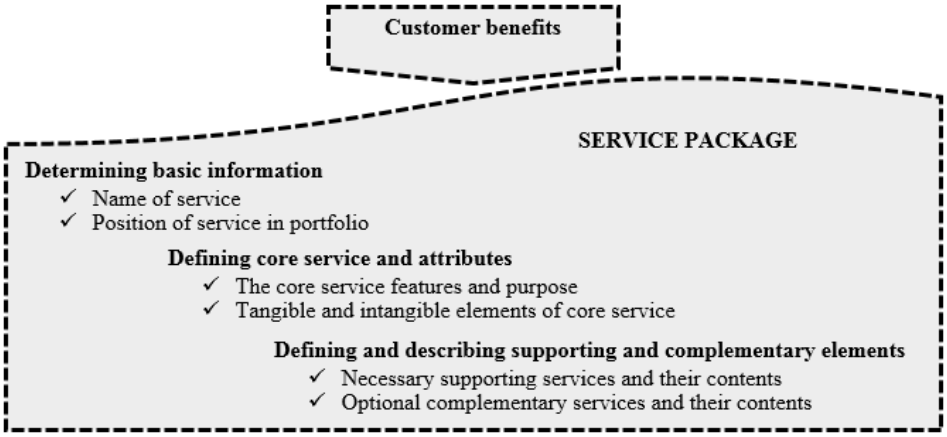

Figure. Service package contents (Jaakkola et al. 2009, p. 12).

Services can be divided in multiple ways. Services can be divided according to provider´s processes, but often they are divided according to benefits, and needs experienced by the customers. The service portfolio should be aligned with service strategies, and future goals. Service portfolios should be updated regularly. (Jaakkola et al. 2009, p. 7)

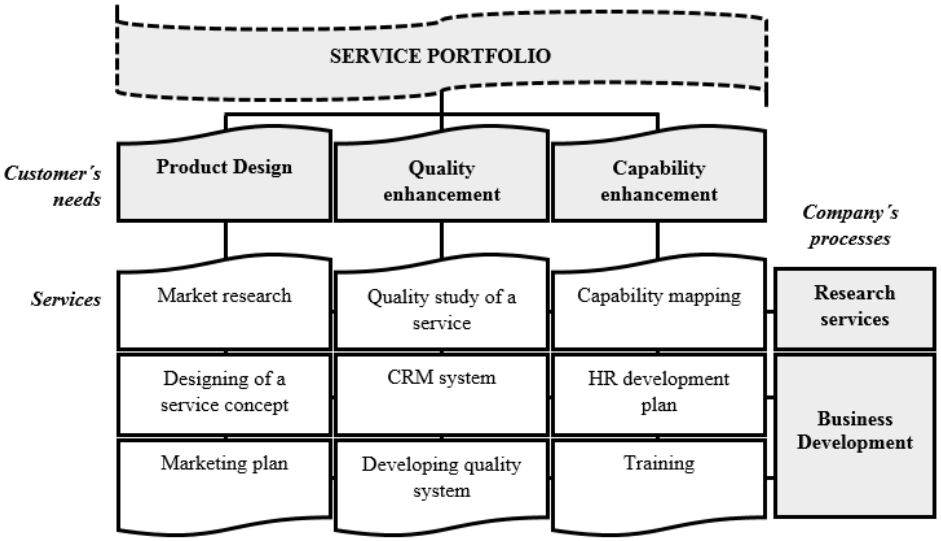

Figure. Service portfolio of a consulting company from customer´s perspective (Jaakkola et al. 2009, p. 7

1) Could you explain about your backgrounds, and about your current role in the company?
2) Describe an offering(s) of your company? (Marketed product-services bundles).
3) How do the services of your company position in comparison with your biggest competitors?
4) How would you describe in your own words what is customer value?
5) In your opinion, how and in which context the customer experiences the value he/she gets from the products and services?

6) In to what extent the product-service bundles, or just services solve the different magnitude problems of your customers?
7) In your opinion, which services are the most important for your customers? Why?
8) Do the services you provide, support the building of long-term customer relationship? How?
9) How would you describe the development of service business at your company, and how it affects your role?
10) In your opinion, how the management, and understanding services as a whole could be leveraged at your company?

11) How do you recognize your customer needs regarding services?
12) How the services are categorized in your company? If not, how would you categorize them?
13) Is your company more product- or service-oriented? Should the current situation be otherwise?
14) How does your company support the development of service business? How it considers the strategic goals?
15) In your opinion, how focusing on service business affects your company, and through that your customers?

16) In which direction the service business of your company will change in the next five years?
17) Describe the resources that your company will need for efficient service provision now, and in the future?

1) Could you explain about your backgrounds, and about your current role in the company?
2) How do services stand out of in favor of Hilti (Suomi) Oy when compared to similar service providers?
3) How services of Hilti (Suomi) Oy create value for you?
4) Which services in your opinion are the most important, and provide the most value for you?
5) What kind of services would you like to be offered for you? What services are missing from the selection of Hilti (Suomi) Oy?

6) In your opinion, how Hilti (Suomi) Oy should develop its service business, so that it would help you?
7) How well the provided services match with your needs? How?
8) How much, at maximum, do you give responsibility for a service provider? Why?
9) How do you expect your service needs to be changing in the next five years?
10) How Hilti (Suomi) Oy could provide more value to their customers through services?

Greetings,

I am currently preparing my master´s thesis at Lappeenranta University of Technology (LUT). The case company of my thesis is Hilti (Suomi) Oy. My supervisor at Hilti is Mr. Pasi Aittola (Key Account Manager), and at LUT Mr. Olli Pekkarinen (D.Sc, Industrial Management). My thesis addresses service business development at Hilti (Suomi) Oy. The purpose of this cover letter is to prepare you for an interview followed later.

In my thesis I´m addressing service business development at two selected areas, which are 1) management of services as a whole, and 2) how service business affects future goals and actions at your company. Categorizing all of the services provided by your company, individual, or product-service combinations (also known as *offering*) is the sole purpose of the management of services subject. With the categorization the holistic view of services can be clarified, but it also contributes to their more efficient management. In the other part of my thesis (effects on future) current perspectives of conducting business at your company are reflected upon goals. The purpose of this thesis is to create internal consensus and willingness to reach common goals.

Perspectives and opinions regarding your organization are gathered by the open questions presented to you at the interview, which will have effect on the results. There are no “right or wrong” answers, and not in any part of conducting the research we will present the names of the interviewee´s. For example in the written thesis your name will not be presented, nor are any comments given referred to anyone. The interviews are mainly carried out as telephone interviews, and you should reserve 1 hour at the maximum for the interview.

Best regards,
Teuvo Heikkinen, Master´s thesis worker

Table. Internal interview description.

Interviewee´s title	Experience at the company (years)	Interview length (minutes - pages)
Chief Executive Officer	10	42 - 9
Sales Director	17	48 - 9
Marketing Director	8	77 - 13
Strategic Marketing Manager	6	55 - 10
Chief Financial Officer	10	61 - 10
Global Account Executive	32	61 - 11
Area Sales Manager	9	57 - 11
Account Manager	20	45 - 10
Project Manager / Field Engineer	2	43 - 8
Field Engineer	7	46 - 9
Shop Manager	6	60 - 11
Sum	127	595 - 111
Average	11,5	54,1 - 10,1

Table. External interview description.

Company	Interview length (minutes - pages)
One	15 - 3
Two	19 - 4
Three	15 - 4
Four	17 - 4
Five	16 - 3
Six	15 - 3
Seven	16 - 3
Eight	10 - 3
Nine	12 - 3
Ten	15 - 4
Sum	150 - 34
Average	15 - 3,4