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Diplomityö

Customer value creation in aftersales services: Case Dredgers

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ABSTRACT

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Understanding customer value creation has received a lot of academic interest in the recent years and it is a source for competitive advantage in competitive business markets. The objective of this study was to identify the customer value expectations of dredger customers within aftersales services context, which are then used in defining key customer value drivers. The customer expectations were then compared to actual customer value perceptions experienced to identify possible points of parity to find areas for possible improvements. The master's thesis also examines how the customer expectations and perceptions have changed over the course of the relationship and why.

The research was conducted with dyadic perspective from both the supplier and three major dredging companies. The first theory part of this thesis explores customer value from the perspectives of products, services and relationships, and considers reasons for changing customer value. The second part of theory introduces different business logics, value co-creation and categorizes service business by supplier involvement. The present research employs an exploratory embedded single case design, and the primary data was collected in ten semi-structured interviews from both the supplier representatives and key customer contacts within the chosen dredger customers.

The research revealed a total of seven value driver themes divided into product, service and relationship related categories. Quality / price ratio and reducing down time are the most important for the customers. Changes in customer value perceptions and expectations tend happen mostly due to supplier actions and market situations. Managerial implications include improvements to communication and to the quality of both services and products.

TIIVISTELMÄ

Tekijä: Kalle Reunanen

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Asiakasarvon luonnin ymmärtäminen on saanut paljon huomiota akateemisissa tutkimuksissa viimeaikoina, ja se on kilpailukyvyn lähde b2b markkinoilla. Tutkimuksen tavoitteena oli tunnistaa ruoppaaja asiakkaiden arvo-odotuksia myynninjälkeisiltä huoltopalveluilta, ja määritellä niiden avulla keskeiset arvoajurit. Tunnistettuja arvo-odotuksia verrattiin todellisiin asiakkaiden arvokokemuksiin mahdollisten erojen ja parannusalueiden löytämiseksi. Diplomityö tutkii myös miten ja miksi asiakkaiden odotukset ja kokemukset ovat muuttuneet asiakassuhteen aikana.

Tutkimus toteutettiin dyadisella perspektiivillä sekä toimittajan että asiakkaiden puolelta. Tutkimuksen ensimmäinen teoriaosa esittelee asiakasarvoa tuotteiden, palveluiden ja asiakassuhteen näkökulmista, sekä esittelee tunnistettuja asiakasarvon muutokseen vaikuttavia tekijöitä. Toinen osa esittelee liiketoimintalogiikoita, arvon yhteiskehittelyä ja huoltoliiketoiminnan eri kategorioita. Tutkimusmenetelmänä käytettiin laadullista tapaustutkimusta sisältäen yhden tapauksen, ja ensisijainen aineisto kerättiin kymmenellä puolirakenteellisilla haastatteluilla sekä toimittajan edustajilta, että ruoppaaja asiakkaiden avain kontakteilta.

Tutkimus toi ilmi seitsemän arvoajuri teemaa, jotka jakautuvat tuote, palvelu ja asiakassuhde kategorioihin. Hinta / laatu suhde ja seisonta-ajan vähentäminen ovat asiakkaille tärkeimpiä. Eniten muutoksia asiakkaan kokemassa arvossa aiheuttavat toimittajan toimet ja markkinatilanteet. Parannuskohteita ovat erityisesti kommunikaatio ja sekä tuotteiden, että palveluiden laadun seuranta.

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Turku, October 2016

Kalle Reunanen

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1 INTRODUCTION

Understanding customer value creation is one of the most important concepts in industrial business markets recognized by both the academic scholars and business managers (Ulaga, 2011). Woodruff (1997) regards customer value as a source for creating competitive advantage and Anderson and Narus (1999, p.5) see it as the cornerstone of business market management. Customer value is also changing over time because customers operate in a dynamic business landscape (Flint et al., 2011).

Despite the vast interest customer value creation has received, companies often don't fully understand or fail to assess the customer perceived value (Anderson and Narus, 1999). This is rather surprising as the importance customer value creation is increasingly being emphasized by business managers, including also the case company in this study. In the case of large scale industrial projects with long lifetimes, especially the literature on how and why customer value perceptions and expectations change over time is scarce. This research aims to narrow this gap by first identifying key value drivers and then the reasons why customers' perceptions of value have changed over time in the context industrial aftersales services in the marine industry.

The present master's thesis is conducted for a case company specializing in power generation solutions in both marine and onshore applications. More specifically the focus of this study is in the after-sales service functions related to engine products within the dredging industry. Dredging is defined by Robobank (2013) as "an excavation activity or operation usually carried out at least partly underwater, in shallow water areas with the purpose of gathering up bottom sediments and disposing them at a different location". From the case company point of view the dredging industry is interesting, regardless of the rather small sales volume, due to the dredging applications have highly special requirements from the equipment. The dredging industry is highly competitive and, especially

in the case of more complex projects, the business landscape is dominated by a couple of large international companies.

Dredging, and marine industry as a whole, is quite conservative, and customer value as a concept has not been researched a lot in the context. The segment offers an especially interesting base for understanding the changes that happen in customer's perception of value, as marine industry as a whole has gone through big changes in the recent decades due to for example tightening environmental regulations and increasing competition. Also the installation lifecycles are long, approximately 25 to 30 years, and therefore changes are likely to happen on the suppliers, customers and the environment. Technological changes and improvements tend to happen as all actors on the market compete to achieve competitive advantages. The actors are also fairly similar as the dredging process itself has not gone through dramatic changes during the last decades.

This study aims to sheds more light on understanding customer value concept in the context large scale industrial goods and projects over a long application lifetime. To address this issue, the theoretical part of this thesis reviews customer value from product, service and relationship perspectives (Ulaga and Chacour, 2001; Ulaga and Eggert 2006), and reasons affecting changes customers value perceptions and expectations (Flint and Woodruff, 2001). Embedded single case study method was chosen to best suit the research. The chosen single case can be defined as the dredger industry, and a total of three major dredging companies are in the focal point. This study takes a dyadic perspective, and the primary data was gathered through 10 semi-structured interviews conducted with respondent from both the customers and the case company. The author spent two weeks in the Netherlands during July 2016 to conduct the interviews face-to-face. The method was chosen because the phenomena of customer value creation is complex and has both social and monetary factors. From case company point of view, also the holistic real world perspective provided by the case study method is useful.

1.1 Research questions and objectives

The main objective of this research is to identify the key value drivers and expectations of the chosen dredger customers and compare the expectations to actual value perceptions. For the case company these possible points of parity are the action points where to improve. The second objective is to identify reasons why the customer value expectations and perceptions have changed during the course of the business relationship between the case company and the customers. The changes could be better captured by a longitudinal study, but this is not possible in the timeframe of a master's thesis. However, all the interviewees have a long history within their organizations and also from the specific segment and interactions between the companies. The case company was also interested to know how their offerings fare against their competitors in similar installations, but the customers were reluctant to share information due to confidentiality reasons. All the objectives are observed from a dyadic perspective by interviewing both the customers and the case company employees in regular contact with the customers. Table 1 presents the research questions for this master's thesis.

Table 1. Research questions

Research question	Objectives
1. What are customer value expectations from engine services and service products during after-sales service period?	To identify key value drivers affecting customers perception of value in the after-sales service period.
2. How customers actually experience and perceive value from engine services and service products during after-sales service period?	To identify possible points of parity between customers' expectations and current way of working.
3. How have the customer's value perceptions and expectations changed during the business relationship?	To identify reason or events for changes in customers value perceptions in relation to their expectations.

1.2 Report structure

This section describes the research structure of this thesis. This thesis has a total of six chapters including introduction. After the introduction the two following chapters focus on reviewing the existing literature and introducing the theories applied. Next the research methodology, the case company and the case customers are presented. The rest of the chapters focus on analysing the research findings and presenting results from the conducted interviews and other sources. Lastly conclusions are drawn. Figure 1 illustrates the research structure as in an input-output table form.

Input	Chapter	Output
Background	**Chapter 1** Introduction	Research questions Research objectives
Existing literature	**Chapter 2** Customer value in business markets	Theoretical background
Existing literature	**Chapter 3** Service business logics and categorization	Theoretical background
Embedded single case study Interviews	**Chapter 4** Methodology	Overview of the methodology, case companies and research process
Analysed data	**Chapter 5** Research analysis and findings	Results from the data analysis
Findings from the conducted research	**Chapter 6** Conclusions	Answer to the research questions

Figure 1. Structure of the study

The first introduction chapter gives the reader an insight to the background of the study and also describes the research gap in existing literature. The chapter also introduces the research questions and objectives from both academic and

managerial point of view. In addition also the structure of the research is presented.

Second chapter focuses on introducing the first part of theories applied in the thesis. The chapter begins by reviewing how customer value is defined in business market literature. Next customer value is considered from different point of view, including the value of goods and services, the value of the relationship and finally the value of more complex solutions consisting of combinations of goods and services. The chapter ends by reviewing reasons for changes in customer value expectations and customer perceived value.

Third chapter introduces the second part of theories utilized for the research. The chapter begins by introducing different service logics found in the exiting literature, and continues to value co-creation, which a fundamental part of service dominant logic and relevant for the researched case. The chapter ends by introducing different categories of services found in the literature.

Research methodology, in this study, exploratory embedded case study, is presented in the fourth chapter. The chapter also includes a short introduction of the case company and its offering that is in the focal point of this study. Next the case dredgers is presented and a short introduction to dredging as an industry segment is provided. The chapter ends by describing the research process utilized, including the interviews and other data collection methods.

The fifth chapter consist of analyses for the data collected with the various methods presented in chapter four. The chapter is structured according to the research questions, and at first the identified value drivers are presented. The drivers are divided to product, service and relationship related drivers. Second, the customer value perceptions are compared to the value drivers and expectations. The chapter ends by analyzing the observed reasons for change in customer value expectations and perceptions.

Conclusion chapter draws from the analysis chapter and begins by answering the research questions. The answers are followed by managerial implications that the analyzed results gave. The chapter ends by giving directions to further research and describing the limitations related to the present thesis.

1.3 Limitations

The dredging industry as a segment within the bigger marine industry is different compared to many others, because of for example their revenue model, operating profile of their installations, the project oriented way of doing business and the high experience requirements due to the complexity of the operations. Therefore the results from this study may not be generalizable to other marine segments, even though similarities will probably exist. Also within the dredging industry, and also marine industry as a whole, the installation lifecycles are long. For examples in the case of dredgers the typical life span of a dredging vessel is close to 30 years, which needs to be taken into account when applying the results to any other field of industry with shorter lifecycles.

This study is done as a part of services product marketing organization and the main focus is on engine related products in the after-sales service period. However the customers also have products not related to the engine only and also for example new build collaboration with the case company, and therefore also aspects other than service business related arose during the interviews, and they cannot be completely ignored.

The three dredger customers participating in this study are of similar size and from the same geographical area. The chosen dredger companies all have many product from the case company, both older and more recent installations. Within the dredging industry there are also a couple of big players in addition to these chosen companies, but one does not have as many products from the case company and one is from a different geographical area and focuses a on different types of dredging projects and was therefore left out.

2 CUSTOMER VALUE IN BUSINESS MARKETS

Customer value is seen as a source for creating competitive advantage (Woodruff, 1997), and it has received strong academic interest in the business-to-business marketing literature in the past decades (Ulaga, 2011). Anderson and Narus (1999, p.5) view value as the cornerstone of business market management because functionality or performance, rather than aesthetics or taste, have a predominant role in business markets. Customers, especially in the business markets, tend to buy from a supplier that is offering superior value, instead of focusing merely on the initial acquisition price (Doyle, 2000, p.70; Kotler and Keller, 2006, p.40-42). According to Ulaga (2011) core marketing building blocks, like segmentation, positioning, value proposition and pricing products and services, all rely on customer value as a foundation. Therefore it is important that business marketers understand how to create, communicate and deliver value for the customer (Ulaga, 2011). Despite the vast interest in literature, many firms, suppliers and customers alike, often find it hard to define or demonstrate what creates value for their business (Lindgreen and Wynstra, 2005; Anderson and Narus, 1998).

Despite the wide usage of customer value as a term in existing B2B marketing literature, there seems to be only little consensus among scholars about how to explicitly define customer value. Generally in business marketing literature customer value is divided into the value of goods and services (offerings) and the value of buyer-seller relationships (Lindgreen and Wynstra, 2005; Lindgreen et al., 2012). Also in this thesis customer value is considered from the perspectives of offerings and relationships. Some commonly referred definitions of customer value in business markets are listed in table 2.

Table 2. Definitions of customer value in business market literature

Authors	Definition of customer value
Anderson, Jain and Chintagunta, 1993	"Value in business markets is perceived worth in monetary units of the set of economic, technical, service and social benefits received by a customer firm in exchange for the price paid for a product offering, taking into consideration the available alternative suppliers' offerings and prices."
Butz and Goodstein, 1996	The emotional bond established between a customer and a producer after the customer has used a salient product or service produced by that supplier and found the product to provide an added value, especially compared to competition.
Woodruff, 1997	"Customer value is a customer's preference for evaluation of those product attributes, attribute performances, and consequences arising from the use that facilitate (or block) achieving the customer's goals and purposes in use situations."
Lapierre, 2000	Customer value is the difference between the benefits and the monetary and non-monetary (time, effort, energy and conflict) sacrifices perceived by customer in terms of their expectations.
Ulaga and Chacour, 2001	"Trade-off between the multiple benefits and sacrifices of a supplier's offering, as perceived by key decision makers in the customer's organization, and taking into consideration the available alternative suppliers' offerings in a specific-use situation."
Eggert and Ulaga, 2002	"Trade-off between the multiple benefits and sacrifices of a suppliers' offering, as perceived by key decision-makers in the customer's organization, and taking into consideration the available alternative suppliers' offerings in a specific use situation."
Menon, Homburg and Beutin, 2005	"Business customer's overall assessment of the utility of a relationship with a vendor based on perceptions of benefits received and sacrifices made."
Liu, 2006	Customer value for a business service is an organizational buyer's assessment of the economic, technical, and relational benefits received, in exchange for the price paid for a supplier's offer relative to competitive alternatives.
Han and Sung, 2008	"An industrial buyer's overall appraisal of the net worth of a particular transaction, based on the buyer's assessment of what is received (benefits provided by the transaction) and given (costs of acquiring and utilizing the transaction)."
Blocker, 2011	"Customer value in B2B context is defined as the customer's perceived trade-off between benefits and sacrifices within relationships."
Blocker, Daniel, Flint, Myers and Slater, 2011	"Customer value represents the trade-off between benefits and sacrifices that stem from a provider's product and relationship resources which customer believe are facilitating their goals."

Depending on whether the authors are focusing on the value of offerings or on the value of relationships, a few common themes regarding on how to define customer value can be identified. As illustrated in table 2, authors generally conceptualize customer value as being a trade-off between gained benefits and made sacrifices (or costs) perceived by the customer (e.g. Anderson et al., 1993; Lapierre, 2000; Ulaga and Chacour, 2001; Blocker, 2011). An important notion shared by the authors is that customer value something that the customer perceives, not something set by the seller (Woodruff, 1997; Han and Sung, 2008). Customer's perception of value is also dependent on particular usage situations (Woodruff, 1997; Ulaga and Chacour, 2001), and therefore the value of the same offering may be very different for different customers (Anderson and Narus, 1999; Lindgreen et al., 2012). Also competition or other alternative offerings affect the customers' perception of value (Butz and Goodstein, 1996; Eggert and Ulaga, 2002; Liu, 2006). Offering better value than the competition helps a company to create sustainable competitive advantage (Ulaga and Chacour, 2001).

Benefits and sacrifices can, and therefore value, can be expressed in both monetary and non-monetary terms (Biggemann and Buttle, 2012). Grönroos (2011a) defines the monetary terms as increasing revenues, by growth of business or higher margins, or decreasing costs of operations and/or administration. Non-monetary benefits and sacrifices include increased trust, reputation, comfort and decreased time, effort and energy required in a transaction (Aarikka-Stenroos and Jaakkola, 2012; Grönroos, 2011a; Lapierre, 2000). Monetary terms are used especially in literature addressing value of goods and services (Keränen and Jalkala, 2013). However in practice defining explicit monetary worth for immaterial sacrifices and benefits like trust or reputation may often be difficult (Anderson and Narus, 1998). Therefore perceptional dimensions are added supplement the customer value perception in contemporary literature (Grönroos, 2011a; Lindgreen and Wynstra 2005).

2.1 Value of goods and services

Customer value research stream focusing on the value of goods and services, or offerings, tends to emphasize the tangible aspects of customer value, such as the functionality (Lindgreen and Wynstra, 2005; Lindgreen et al., 2012). This view of customer value has its foundations in the augmented product concept, which argues that value for the customer is created through value-adding features or layers on top of the core benefit desired by the customer (Levitt, 1980, 1981). The value adding layers can generally be separated into five levels: core benefits and basic, expected, augmented and potential product features (Kotler and Keller, 2006, p.372-373). Lovelock (1995) builds on the same framework and argues that this hierarchy of customer value can be used for products, services and any combination of these. Lindgreen and Wynstra (2005) summarize the augmented product concept by categorizing the value of a service or product offering into core and add-on benefits perceived by the customer.

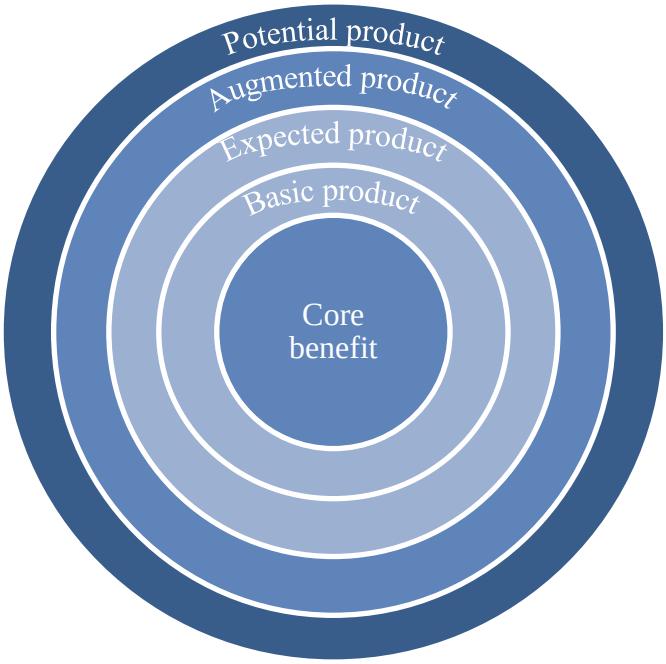

Figure 2. Customer value hierarchy (Kotler and Keller, 2006, p.372)

The customer value hierarchy that uses the augmented product concept as basis is illustrated in figure 2. Core benefit represents the service or benefit the customer is actually buying and basic product is the core benefit turned into a more tangible form (Kotler and Keller, 2006, p.372). In the model expected product is a set of attributes the customer normally expects when buying a product or a service. The basic product can only be sold if the customers' expectations are met (Levitt, 1980; Kotler and Keller, 2006, p.372). Augmented product goes beyond customers' expectations or requirements, sometimes even with factors that the customer has never thought of before (Kotler and Keller, 2006, p.372). However it is important to note that not all customer are attracted by adding additional features or services on top of the expected product as some may prefer lower price to augmented products (Levitt, 1980). On the models fifth level is potential product which includes all the possible and imaginable augmentations and transformations the product might undergo in the future (Levitt, 1980; Kotler and Keller, 2006, p.373).

Doyle (2000), and Kotler & Keller (2006) argue that customer value of a product consists of three elements: the perceived benefits of a product, minus product price and minus the other costs of owning it. Hutt and Speh (2010) add acquisition costs, which are for example ordering and delivery costs, to the equation. Figure 3 compiles the elements of this view. The perceived product benefits are a function of products performance, the quality of augmenting services and design, the product price refers to purchasing price of the product, and ownerships costs are the sum of all related costs, such as installation, insurance, training and the psychological of the risk of having to switch to a new supplier (Doyle, 2000). Hutt and Speh (2010) emphasize that the add-on benefits influence customer value more strongly than core benefits, as all qualified suppliers tend to perform the core benefits and add-on benefits are a way for differentiating an offering from competition. Delivered customer value can be measured as a difference of total perceived benefits and sacrifices, or so called value-price ratio (Kotler and Keller, 2006). Generally customers tend to prefer the offer they estimate will deliver the

most value, but Kotler & Keller (2006) argue that there are three situations where customer does not choose the offering with the highest value: buyer is ordered to buy at the lowest possible price, the buyer is maximizing personal benefits in the short-run or the buyer has a long-term relationship whit a particular supplier.

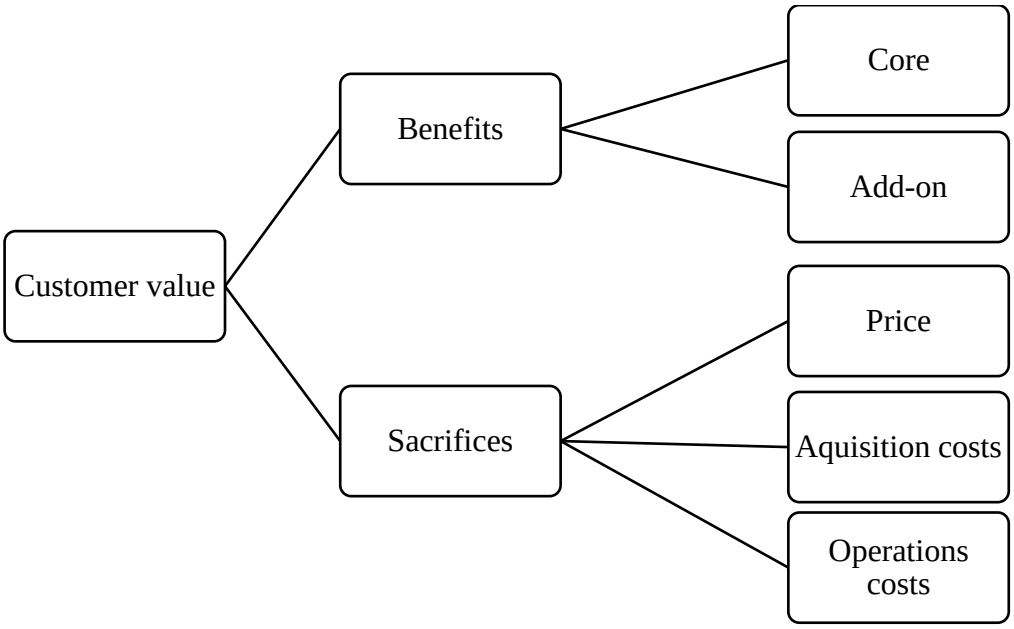

Figure 3. Customer value of offerings (Hutt and Speh, 2010, p.217)

Anderson et al., (1993) adopt a slightly different view defining customer value as "the value in business markets is perceived worth in monetary terms of the set of economic, technical, service and social benefits received by the customer firm in exchange for the price paid for a product offering, taking into consideration the available alternative suppliers' offerings and prices." Anderson and Narus (1998, 1999) also build on this perspective where, in contrast to Doyle (2000) and Kotler & Keller (2006), purchase price is not included in the sacrifices (or negative benefits). Instead the difference between the value and price is viewed as the "customer incentive to purchase the offering" (Anderson and Narus, 1998).

Ulaga and Chacour (2001) argue that customer value analysis goes beyond traditional customer satisfaction measurement, and customer perceived value is in relation to customer perceived quality and customer satisfaction. They define customer value in industrial markets as "trade-off between the multiple benefits and sacrifices of a suppliers offering, as perceived by key decision makers in the customers organization, and taking into consideration the available alternative suppliers offerings in a specific use situation". This view emphasizes that customers are not a homogenous group, and different customers and customer segments often perceive different values in the same product or service (Ulaga and Chacour, 2001). Therefore measurements of how different customer segments perceive value of the firms offerings is a way for differentiating from competition, and should be in the center of a firms strategic marketing plan (Eggert and Ulaga, 2002).

2.2 Value of relationships

The second research stream of customer value in business-to-business markets recognized by scholars focuses on the process of exchange, or the relationship between buyer and seller (Ulaga and Eggert, 2005). According to this approach the value of a relationship for a certain offerings is higher than the plain value of the product or service being exchanged in a transaction (Lindgreen and Wynstra, 2005). The academic foundation of relationship value construct lie in business and service marketing (Ulaga and Eggert, 2005). One of the first efforts to conceptualize relational dimensions of value construct comes from Anderson et al., (1993) who consider social and service benefits affecting customer's perception of value. Traditionally the research on relationship value has focused more on the intangible factors, but it also argued that the customer perceived value in a relationship can include both tangible and intangible elements (Keränen and Jalkala, 2013; Ulaga and Eggert, 2005; Biggemann and Buttle, 2012).

Like with customer value of offerings, there seems to be no definitive consensus among scholars of how to define relationship value, but authors do recognize

different dimensions and drivers of customer perceived benefits and sacrifices in business relationships (Menon et al., 2005). Dimensions can be for example economic, social and strategic factors facilitating customers value creation within a business relationship (Ulaga and Eggert, 2005; Biggemann and Buttle, 2012) Another important notion shared by many scholars is that as relational view of value is taken, customer value is perceived and realized over time and as the relationship evolves (Grönroos, 1997; Payne and Holt, 1999).

In conceptual academic literature Wilson and Jantrania (1995) argue that relationship value emerges from three different benefit dimensions: economic, strategic and behavioral. They define economic benefits as being the cost savings that the customer benefits from when the relationship evolves and the supplier participates in for example engineering, field service and assembly. Strategic benefits emerge when the supplier is able to add to the core offering of the customer and by for example reducing time to market. Behavioral dimension acknowledges the fact that people make a relationship work, and facilitates a long lasting relationship by establishing trust between individuals. (Wilson and Jantrania, 1995) Ravald and Grönroos (1996) introduce episode and relationship benefits (or sacrifices), and the trade-off between them should not be limited to a single episode level. Rather the relationship value assessment should take into account all the benefits and costs perceived within the course of a relationship. In another publication Grönroos (1997) defines relationship value as the sum of core product or a solution and the value (positive or negative) of the added services.

More cost oriented perspective for relationship value is provided by Cannon and Homburg (2001). The authors identify three types of costs that are present in a business relationship as the key drivers for relationship value: direct product costs, acquisition costs and operations costs. Direct product cost is the actual cost charged from the customer by the supplier and acquisition costs result from acquiring and storing the products subject to transaction. Operation costs are a result of the customer’s every-day business (Cannon and Homburg, 2001). Menon et al., (2005) build in the same theory adding core benefits and add-on benefits to

the proposed model as key drivers for relationship value. In a more recent study Biggeman and Buttle (2012) argue that relationship value includes also intangible value drivers, such as personal knowledge and strategic and personal benefits, in addition to tangible dimensions like financial and product benefits.

Empirical studies in academic literature echo similar dimensions and key value drivers for relationship as the conceptual studies. Lapierre (2000) conducted a study for purchasing executives in industrial business markets and identified 13 value-based drivers affecting customer perceived value in a relationship. He divides the drivers into three benefit dimensions (product, service and relationship benefits) and two sacrifice dimension (price and relationship costs) which are listed in figure 4.

Scope / Domain	**Product**	**Service**	**Relationship**
Benefit	Alternative solutions Product quality Product customization	Responsiveness Flexibility Reliability Technical competence	Image Trust Solidary
Sacrifice	Price		Time/effort/energy Conflict

Figure 4. Relationship value drivers (Lapierre, 2000, p.125)

Another empirical approach on the subject of relationship value comes from Ulaga (2003). In the study Ulaga recognizes product quality, service support, delivery performance, supplier know-how, time-to-market and personal interaction as benefit dimensions, and direct product costs and process costs as sacrifice dimensions. Ulaga and Eggert (2006) develop on the same foundation of benefit dimension and dividing costs into direct costs, acquisition costs and operation costs. Figure 5 illustrates the different elements of relationship value drivers.

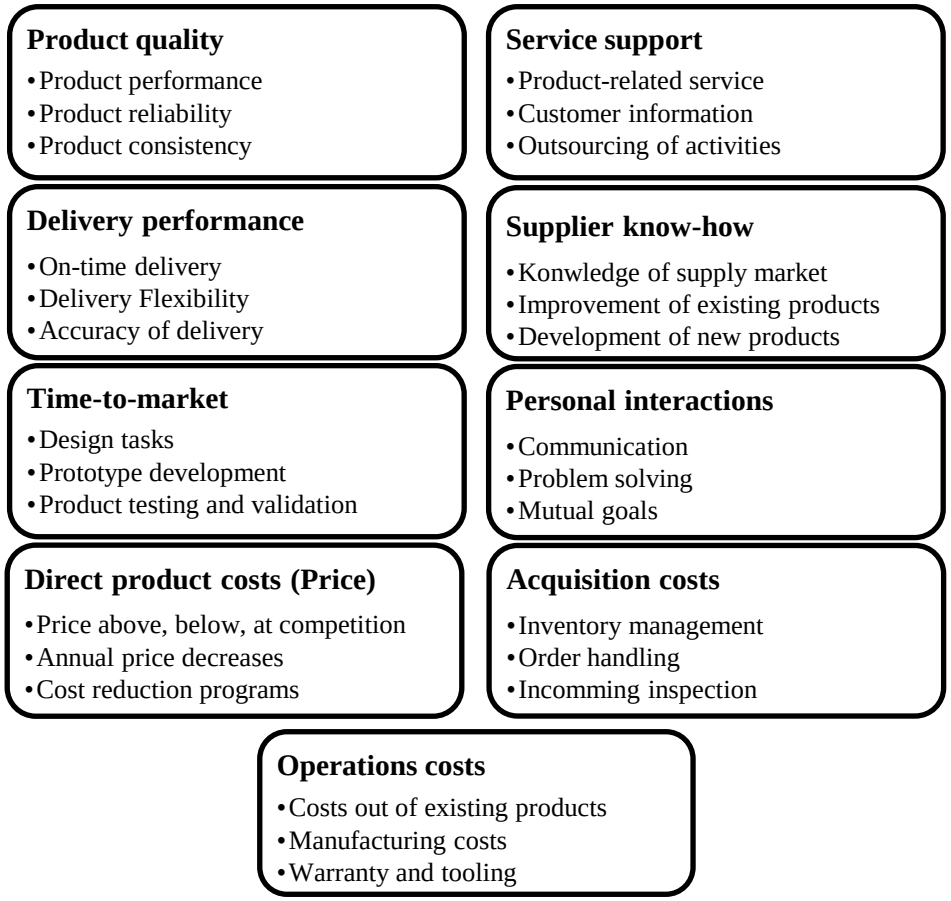

Figure 5. Relationship value drivers (Ulaga, 2003; Ulaga and Eggert, 2006)

Business relationships are unique by nature and therefore also the perceived value, benefits and sacrifices within a relationship tend to be dependent on the actors and even the actors (supplier and customer side alike) within the same relationship may have different perceptions and ways to experience value (Corsaro and Snehota, 2010). Perceived value within a relationship also tends to change considerably when observed over time (Flint, Woodruff and Gardial, 1997; Corsaro and Snehota, 2010). The underlying reasons for changes in customer perceived value of a relationship can emerge from internal and external events including both customer and supplier related factors in addition to changes in the overall business environment and regulations (Flint et al., 1997).Therefore specific situation conditions may redefine the way customers experience value (Haas, Snehota and Corsaro, 2012). More detailed review on changing customer value will follow in the next chapter.

2.3 Value of solutions

Academic literature broadly defines solutions in business markets as offerings integrating products and services in a way that creates unique value for the customer (Brady, Davies and Gann, 2005). According Sawhney (2006) it is critical that the value perceived by the customer in a solution is greater than the sum of individual products and/or services and that the solution solves the customers problem. Kujala, Artto, Aaltonen and Turkulainen (2010) argue that solution is an offering including a project component and aftersales component in addition to more traditional basic concepts of product and service. This approach emphasizes that supplier firms do not create value for the customer by only providing mere products and services, but by actively supporting customers in their own business processes throughout the product life-cycle in order to help the customer achieve specific goals (Grönroos, 2011). The approach is especially relevant in business markets where an increasing number of actors are transforming from merely offering products and additional services to providing combinations or bundles of these, and even lately providing complete functioning systems (Ulaga and Reinartz, 2011).

According to Tuli, Kohli and Bharadwaj (2007) the dominating view among solution value scholars is describing industrial solutions as unique bundles of products and services designed to fulfil customers specific business needs. However based on empirical research they argue that customers tend to view solutions as not only bundles of products and services, but as a relational process covering a larger portion of the product life-cycle. The suggested relational process consists customer requirement definition, customization and integration of the solution, deployment phase and post deployment support for the delivered solution (Tuli et al., 2007). Also Pekkarinen and Salminen (2013) recognize the relational nature of value created with industrial solutions. However the authors emphasize that industrial solutions contain the physical elements required by the customer in order to achieve desired business outcomes. They define industrial solution offering as “an entity comprising customized goods, services

collaboration and finance needed to fulfil the industrial solution" (Pekkarinen and Salminen, 2013, p.150). In business markets the customers' willingness to pay is thus related to supplier's ability to effectively communicate the value resulting from the functionality of the offering and from the relational process itself (Tuli et al., 2007).

Sawhney (2006) and Storbacka (2011) share a view of solution business where product is seen as the platform for service-centric solutions. Unlike Tuli et al., (2007), Sawhney (2006) argues that solution business model should begin with identifying the end-customers problem and the combination of services and/or products that will solve the problem, not with bundling services and products into solutions by thinking product forward. He also argues that because industrial solutions are often highly complex by nature, suppliers and customers tend to co-create the solution and further the value of the solution. The foundation of value co-creation between buyer and supplier can be found from service-dominant logic of marketing that argues value is always co-created and realised as "value-in-use" for the customer over time (Vargo and Lusch, 2004; Grönroos, 2011b). Service-dominant logic and value-in-use will be discussed in-depth in the next chapter. Also with services the supplier firms should shift their focus on supporting the client rather than supporting the product (Mathieu, 2001). Moving to solution business models also mean a transition of risks and liabilities that customers previously carried in-house towards the supplier of the solution (Brady et al., 2005). To guarantee fluent operation and to minimize problems of the solution throughout the whole product lifecycle, which in industrial solutions can be fairly long, it is important that customers buy the whole set included in the solution (Davies, Brady and Hobday, 2006)

Based on their research interviewing 18 purchasing managers from industrial companies, Lindberg and Nordin (2008) found that purchasers view the process of buying an integrated solution as a very complex task. The process requires a lot of resources from different organisational levels, involves risks and can be costly. Tuli et al., (2007) and Epp and Price (2011) conducted empirical research on the

topic and found that the actual value that customers realize from a solution offering often tends to fall short from the expectations. Nordin and Kowalkowski (2010) argue that another difficulty in solution business is that customers are not really aware of their real underlying business needs even by themselves. To address this issue it is sometimes even required to go beyond customers expressed needs to uncover the real needs in order to create the best possible solution for the customer (Kujala et al., 2010). According to Hallikas, Immonen, Pynnönen and Mikkonen (2014) some managers tend to view bundling and integrating services into solutions as a negative phenomenon, because they believe it will destroy the transparency and the costs related to a certain offering. Lindberg and Nordin (2008) found in their survey that companies rather buy independent services than solutions, because they did not want to get into an alliance with one supplier. Solutions have also been viewed as an expensive option and the dependence risk higher than the possible achievable benefits for the customer (Hallikas et al., 2014; Lindberg and Nordin, 2008)

2.4 Changes in customer perceived value

Customer value creation has recently been at the focal point of academic business marketing literature, yet less attention has been given to understanding that customer value often is not constant and it may change over time (Flint and Woodruff, 2001). As customers operate in a dynamic business landscape, where for example competition and other external factors are present, the customer's perception of value received or wanted may change even rapidly (Flint and Woodruff, 2001). Therefore suppliers cannot indefinitely rely on what they currently know about customer value to necessarily hold in the future as well (Flint, Woodruff and Gardial, 2002). Customers' perception of value is directly linked to customer satisfaction, which influences customer retention and creates competitive advantages (Flint, Woodruff and Gardial, 1997). According to Flint et al., (1997, p.164), suppliers must understand at least three customer value factors to thrive in the dynamic business environment: (1) the current needs of their customer, (what they value), (2) their customers' satisfaction with the supplier

ability to meet those needs (to create that value for them), and (3) the forces that drive customers' perception of value to change over time.

Literature suggests that different kinds of events will trigger changes in the customers' perception of value, customers' satisfaction with the supplier, post-purchase evaluation process and strengthen or dissolute the supplier-customer relationship (Flint et al., 1997; Perrien, Paradis and Banting, 1995). Flint et al., (1997) propose that trigger have a key role in the whole supplier-customer relationship by affecting three forms of customer value: values, desired value and value judgements. Different types of events trigger different kinds of value change experiences and will therefore result in different expectations of suppliers (Flint et al., 1997). Specifically Flint et al., (1997, p.165) define trigger event as "a stimulus in the customer's environment that is perceived by the customer to be relevant to his/her goals, which result in some form of change in values (personal and/or organizational, desired value, and/or value judgements".

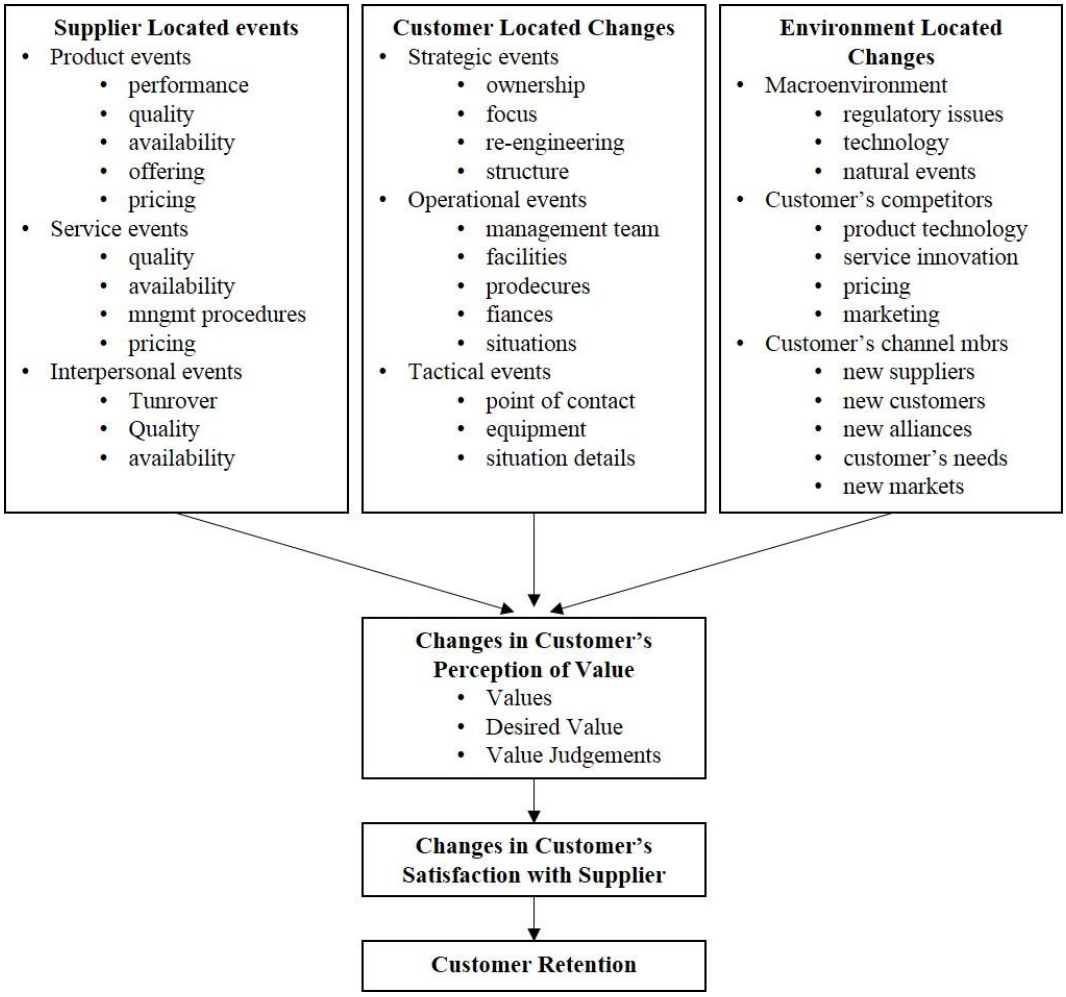

Figure 6. Trigger event categorization according to Flint et al., (1997, p.166)

Figure 6 provides an overview of the different trigger events that initiate change proposed by Flint et al., (1997). Trigger events can be a singular event, like an incident acting as the "last straw", or a culmination of series of event or issues triggering something like awareness, a change in view of the market, recognition of an opportunity, heightened sensitivity to problems with supplier or re-assessment of the value of a supplier within the customer organization (Flint et al,. 1997). Supplier located events are changes in product attributes (e.g. quality, product performance, availability), service attributes (e.g. service quality, service availability, management procedures), or interpersonal attributes (e.g. personnel turnover, training, quality, availability) (Flint et al., 1997). According to the

authors these changes are sometimes made with the intention to better assist the customer, and sometimes also unintentionally.

Customer located events occur within the customer's organization and can be divided into strategic level events (e.g. changes in ownership, changes in the focus of top management, re-engineering of the organization), operational level events (e.g. changes in management teams, opening of new facilities, closing of old facilities, changes in operational procedures, changes in financial situations, changes in types of operating situations) and more immediate tactical events (e.g. sales representative's point of contact, changes in the status of equipment, changes in current situations) (Flint et al., 1997). The authors note that the recognition of customer located events requires the suppliers synchronize with their customers' internal operations, procedures, personnel and the customers' organizational changes.

Environmental located events occur outside both the supplier's and the customer's organizations and are for example macro environmental changes (e.g. regulatory issues, technological innovations, natural events), market-based changes such as actions by customer's competitors (e.g. product innovations, service innovations, pricing, marketing), and actions related to customers' relationships with their channel members (e.g. new suppliers, new customers, new alliances, changes in customers' needs, new markets) (Flint et al., 1997). Customers and suppliers may have different perceptions of the environmental changes even when they are dealing with similar environmental dynamics (Flint et al., 1997)

Table 3. Forms of customer value according to Flint et al., (1997, p.168)

	Values	**Desired Value**	**Value Judgement**
Definition	Implicit beliefs that guide behavior	What customer wants to have happen (benefits sought)	Assessment of what has happened (benefits and sacrifices)
Level of abstraction	Abstract, centrally held, desired end-states, higher order goals	Less abstract, less centrally held, lower order goals, benefits sought to facilitate higher order goal achievement	Overall view of trade-offs between benefits and sacrifices actually received
Locus or source of value	Specific to customer (person or organization	Conceptualized interaction of customer, product/service and anticipated use situations	Interaction of customer, product/service, and a specific use situation
Relationship to use	Independent of use situation	Independent of use specific experience	Dependent on specific use experience
Permanence	Enduring	Moderately enduring	Transient over occasions

Flint et al., (1997) classification of the different forms of customer value; values, desired value and value judgements, is presented in table 4. According to the authors the first form, values, are central enduring beliefs that guide behavior independent of product use situation and reflect the people's "ultimate end-state of existence". They define values as "the centrally held, enduring core beliefs, desired end-states, or higher goals of the individual customer or customer organization that guide behavior" (Flint et al., 1997, p. 170). Values can be both personal (e.g. honesty, sense of accomplishment) or organizational (e.g. make a profit, provide employment, continuous innovation), and typically they reflect abstract and are more higher order goals than the following two forms of customer value (Flint et al., 1997).

Desired customer value is defined as “the customer perception of what they want to have happen (i.e. the consequences) in a specific kind of use situation, with the help of a product or a service offering, in order to accomplish a desired purpose or goal” (Flint et al., 1997, p. 170). Here value is created by products and services when the delivered benefits (e.g. time savings, cost savings, feel taken care of, feel trusted, feel that they are treated fairly) help customers achieve their goal in various situation (Flint et al., 1997). Desired value can take on two aspects; value in use, reflecting the use of a product or service in a situation to achieve a certain goal or set of goals, and possession value reflecting the inherent meaning of the product or service to the customer (Flint et al., 1997). Customers may change what they value, or what they want to have happen and therefore customer desired value is more volatile concept than personal or organizational values of the customer (Flint et al., 1997).

Value judgements reflect on how the customer assess the value they have received from a specific product or service provider, and how the product or service has performed within a specific use situation (Flint et al., 1997). Flint et al., (1997) define value judgements as “the customer’s assessment of value that has been created for them by a supplier given the trade-offs between all relevant benefits and sacrifices in a specific use situation”. Customers do value judgements on both a single product and service, and also on the whole relationship with a supplier, where the value judgement is based on the experience over time (Flint et al., 1997). Value judgement is the most volatile form of customer value and they may change rapidly and often, as any incident involving a particular supplier is likely to affect that customer’s judgement of value received in that specific experience (Flint et al,. 1997). As with any other forms of customer value, also value judgements may shift customers perception of value received to either negative or positive, depending on whether the customer perceived benefits and sacrifices increase or decrease (Flint et al., 1997)

Because of the dynamic nature of customers desired and perceived value Flint, Blocker and Boutin (2011) argue that, in addition to knowing what customers

currently value, suppliers should be able to also anticipate what customers will value in the future. The authors use the term customer value anticipation and define it as “the supplier’s ability to look ahead at what specific customers will value from supplier relationship including their product and service offerings and the benefits they create given the monetary and non-monetary sacrifices that must be made to obtain those offering benefits” (Flint et al., 2011, p.219). For the suppliers this means both the process of anticipating and the prediction of outcomes from the product and service offering that will most likely facilitate the customer’s value creation (Flint et al., 2011). For the customer this means their perception that suppliers are actually able to anticipate their needs, possibly even before they do, and that their sense that suppliers have such processes (Flint et al., 2011). Gathering information and clues regarding changes in customer desired value and piecing this information together for a holistic image of customers’ futures is likely to be laborious (Flint et al., 2002). However successful customer value anticipation will lead to more satisfied and loyal customers which is a source for achieving competitive advantage (Flint et al., 2011). Flint et al., (2011) note that responding to changes in what customer’s value is quite different from anticipating those changes beforehand.

Flint and Woodruff (2001) found that the central phenomenon leading to customer value change is customer tension. They specifically focus on customer desired value and argue that changes in this value form emerge from attempts to reduce tension produced by a number of factors both internal and external to the participants’ organization. The authors conducted an empirical study where the customers recognized their dependence on the suppliers in reducing tension that they felt which resulted in the altering of the value they desired from a specific supplier. Based on their research, Flint and Woodruff (2001) propose a model of change in customer desired value which is presented in figure 7:

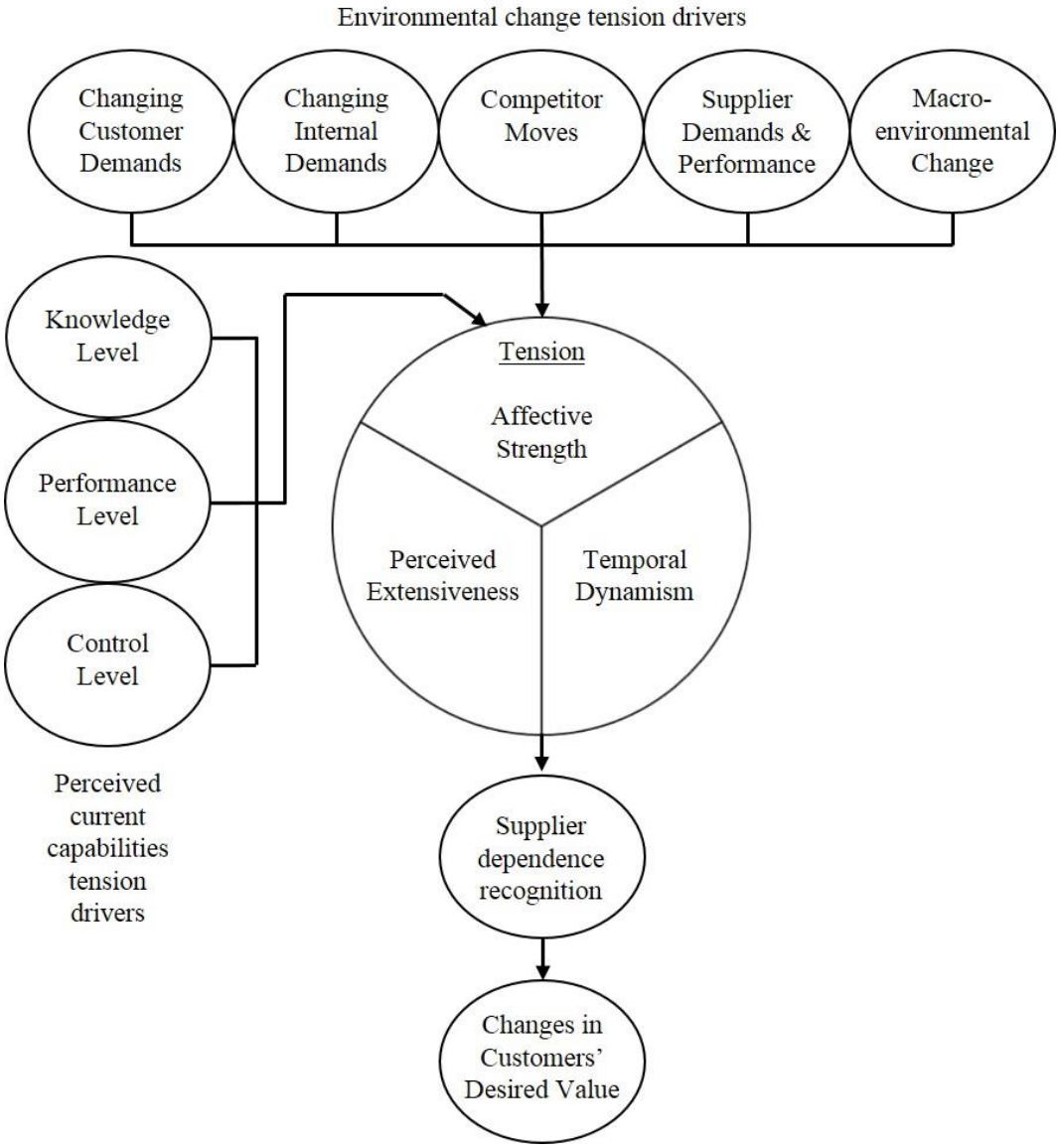

Figure 7. Drivers of change in customers' desired value (Flint and Woodruff, 2001, p.328)

In their model Flint and Woodruff (2001) recognize three different dimensions for customer tension (affected strength, perceived extensiveness and temporal dynamism), five driving forces within the customer environment (changing customer demands, changing demands internal to customers' organization, competitor moves, changes in supplier demands and performance, and changes in the macro-environment), and three different perceptions of their (either their own,

the department's, or the company's) current levels of knowledge, performance and control with respect to being able to succeed in a dynamic environment produced tension. Tension and the customers' perception that suppliers are required to reduce it are necessary precursors to changes in customer desired value, although the levels of tension are different at different times and driven by different forces (Flint and Woodruff, 2001).

The first dimension of tension in the model, affective strength, represents emotional stress felt by the individuals in the customers organization (Flint and Woodruff, 2001), and refers to how powerful the feelings of tension are (Flint et al., 2002). In their empirical study Flint and Woodruff (2001) observed that the participants expressed feeling emotional reactions such as panic, fear and anxiety, and also perceptions of being pulled in many directions, uncertainty and increasing pressure. While affective strength dimension refers to what tension is, the second type, perceived extensiveness, depicts where the tension exists (Flint and Woodruff, 2001). The perceived tension may be limited to one individual person or extend to other people in within the same department, or even to the entire organization (Flint et al., 2002). Tension tends to be more extensive if it is more widely spread in the organization, compared to only individuals feeling it (Flint and Woodruff, 2001). The third dimension, temporal dynamism, refers to the variations and changes in tension strengths and perceived extensiveness over time (Flint et al., 2002). Tensions grow and subside in intensity depending on the nature and extent of demands and threats being observed (Flint and Woodruff, 2001). Flint and Woodruff (2001) note that the level of tension generated by particular events is different among individuals.

As a summary this chapter as a whole aims to give the reader an idea on two things. Firstly, as there is no common consensus among scholars on how to definitely define customer value creation, it is important to review the existing literature to give the reader a comprehensive picture on why the topic is important and what is already known. This applies to also changes in customer perceived value that has received less attention in literature so far. Secondly this chapter

serves as a justification regarding the perspective taken in this study. Customer value creation in the present study is examined from three different point of view; product, service and relationship. This distinction is necessary as the customers and the case company have different kinds of interactions and transactions in their relationship, ranging from small spare part sales to large contracts covering maintenance and business optimization. Identifying value drivers from the different points of view allows more accurate capturing of the dynamics within the business relationships that would otherwise be too complex to study. Categorized value drivers also enable better illustration of the reasons for the changes that have happened in the relationships. Identified change drivers and reasons are divided by their location of occurrence to supplier, customer and business environment located changes. This distinction helps to understand the dynamics, as multiple reasons may affect change at the same time.

3 SERVICE BUSINESS LOGICS AND STRATEGIES

This chapter aims to describe different logics and strategies offered by academic literature as explanations to how manufacturing firms conduct service business, and what factors affect the success of the transition from product-centric approaches to more customer-centric and relationship intensive approaches. The chapter begins by introducing two dominant business logics; goods-dominant (G-D) and service-dominant (S-D), and terminology relevant to this thesis. According to Ng et al., (2012) dominant logic refers to a shared focus by which a group of managers or a company uses to develop and define their core business operations. The second part of the chapter introduces different service strategies that serve as guidelines on how companies should position themselves in relation to the customers. Understanding different logics and strategies is required for understanding the business model choices of the case company towards the customers.

3.1 Goods-dominant logic

The first one, and the more traditional, of the business logics often referred to in business-to-business market literature is called goods dominant logic (G-D logic) (Vargo and Lusch, 2004). In G-D logic concept value is realized in the process of exchanging goods or services for something else, usually money (Ng et al., 2012). When extended to service context, in G-D logic goods are viewed as a distribution mechanism for services (Vargo and Lusch, 2004), and service offerings are reduced into exchangeable units, such as man-hours, information or other exchangeable objects that act as service and support for the product (Ng et al., 2012). According to Vargo and Lusch (2004; 2008b), in G-D logic value is viewed as value-in-exchange, where the value is embedded in goods and activities (services) that can be separated from each other, and experienced in the process of exchange itself (Ng et al., 2012).

According to Ng et al., (2012) in G-D logic resources have an assigned, inherent or transcendent value that is not linked to any context. Therefore according to G-D logic manufacturers can produce objects which are inherently valuable and the value can be measured as an entity (Ng et al., 2012). This means that G-D logic is very provider-dominant logic, where the producer creates value and the customer receives the value in exchange for a price (Vargo and Lusch, 2004; Heinonen, Strandvik and Voima, 2013). Other distinctive characteristics typically embedded in G-D logic include for example; (1) economic activity is seen as production, and selling of goods (Vargo and Lusch, 2004, p.5), (2) the produced value should be superior compared to competitor's offering (Vargo and Lusch, 2004, p.5), (3) profits from the sale of and output should be maximized (Vargo and Lusch, 2004, p.5) and (4) production efficiency and product standardization levels should be high (Vargo and Lusch, 2004, p.5; Vargo and Lusch, 2008b). The inadequacies in G-D logic (e.g. seeing services just as special kind of goods) have recently led scholars and businesses alike to shift boarder logics, such as service-dominant logic (S-D logic) (Vargo and Lusch, 2008b).

3.2 Service-dominant logic

In contrast to G-D logics value being embedded in goods and realized in the exchange of goods, S-D logic sees goods as a distribution mechanisms for service provision (Kowalkowski, 2010). In S-D logic the customer is always seen as a co-creator of value and the fundamental basis of exchange is service, instead of a product (Vargo and Lusch, 2008a). Within S-D logic value creation is seen as an interactive process where suppliers and customers must be considered in a relational context, not separate like in G-D logic (Vargo and Lusch, 2008a). In addition, S-D logic states that values is always determined by the one receiving the benefits from a service, and therefore S-D logic is inherently a customer oriented approach, rather than provider centric as G-D logic (Vargo and Lusch, 2008a). From S-D logic perspective operant resources, such as skills and knowledge, are the primary resources generating immediate and lasting competitive advantages (Edvardson, Ng, Min, Firth and Yi, 2011). The S-D logic

literature proposes that value of an offering is realised in use (value-in-use), rather than in exchange (value-in-exchange, see G-D logic chapter 3.1) (Ng et al., 2012). Vargo and Lusch (2008a) also suggest that suppliers offering is merely a value proposition for the customer to realise in use and before that the offering is only potentially valuable. S-D logic is further illustrated with the value creation sphere model (Grönroos and Voima, 2013) presented in figure 8.

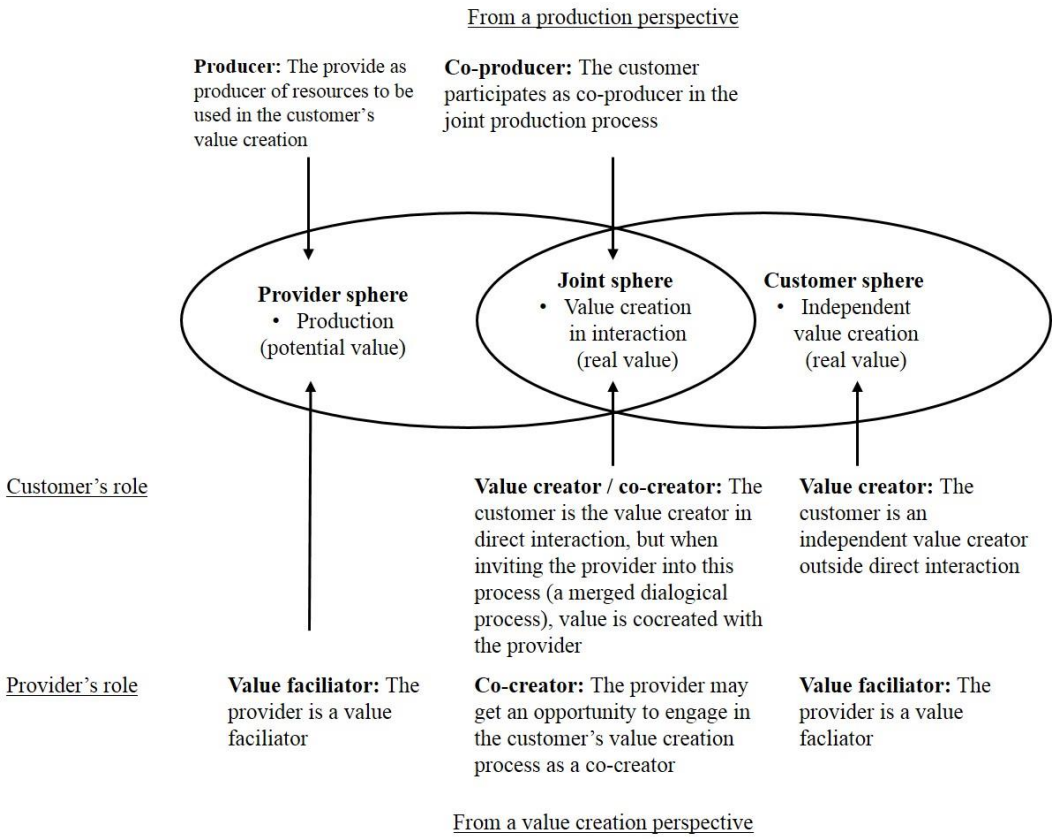

Figure 8 Value creation spheres (Grönroos and Voima, 2013, p.141)

The sphere model presented by Grönroos and Voima (2013) explains S-D logic, and differences to G-D logic, by dividing value creation in three spheres (provider, joint and customer). In the provider sphere, a company produces resources and processes for the customer use and thus facilitates the value creation of the customer. In the joint sphere the customer acts as a co-producer of resources and processes jointly with the provider and also creates value jointly

with the provider. The customer sphere is closed to the provider, and the customer creates value as value-in-use independently without direct interactions to the provider. (Grönroos and Voima, 2013) The authors note that the model is theoretical, and in reality the process is not necessarily as straight forward. The interactions between the customer and the provider can be either direct or indirect (Grönroos and Voima, 2013). According to the model, direct interactions (i.e. customer and provider personnel discuss) take place only in the joint sphere, and indirect interactions (i.e. customer uses the providers resources or products independently) in the customer sphere and are out of reach for the provider (Grönroos and Voima, 2013).

3.3 Value co-creation

Grönroos and Gummerus (2014) define value co-creation as a joint process where service provider's process, the customer's consumption and value creation process merge into one direct interaction process. In this merged process the service provider has a change to engage in the customer's process of value creation, and influence the customer's creation of value-in-use (Grönroos and Gummerus, 2014). Value co-creation is a central concept in S-D logic introduced by Vargo and Lusch (2004), and its significance has been recognized especially by scholars researching professional services contexts, which require high involvement from both the supplier and the customer and are highly customised (Aarikka-Stenroos and Jaakkola, 2012; Chan, Yim and Lam, 2010).

According to Grönroos and Ravald (2011) value co-creation is only possible when there are direct interactions between the supplier and the customer, and the supplier is able to utilize the interactions to get involved in the customer processes. Interactions in a business context means that parties are in direct contact (i.e. negotiations, maintenance, planning, conflict, advice, consultancy etc.) with each other for a business reason (Grönroos, 2011a). According to Aarikka-Stenroos and Jaakkola (2012) a typical interaction where value co-creation takes place within complex high technology and solution business

context is characterized as problem solving. Figure 9 presents a generic example of this process.

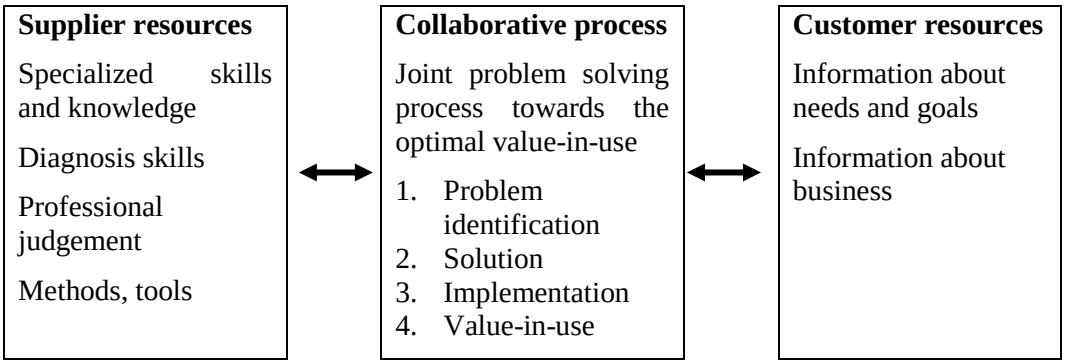

Figure 9 Value co-creation in joint problem solving process (Aarikka-Stenroos and Jaakkola, 2012, p.17)

In highly knowledge intensive services the supplier's specialist knowledge is the core benefit for the customer and therefore object of exchange is intangible (Aarikka-Stenroos and Jaakkola, 2012). The joint problem solving process starts with identification of the problem and the customers actual needs (Aarikka-Stenroos and Jaakkola, 2012). The authors note that in some cases there may be even a substantial differences in understanding the issue between the expert (supplier) and the customer. Regardless of the possible expertise bias, customer resources are crucial for solving the problem, as customer possesses the knowledge required for the problem solving (Aarikka-Stenroos and Jaakkola, 2012). Customers value the quality of the interaction and the service process, but supplier sometimes tend to struggle in demonstrating and communicating the value of the service because customers have only limited capabilities of assessing it (Aarikka-Stenroos and Jaakkola, 2012). A joint problem solving process serves as an excellent example value co-creation, because it involves supplier and customer resources integrated in a collaborative interaction process to create optimal value-in-use for the customer (Aarikka-Stenroos and Jaakkola, 2012).

3.4 Service strategies categorization

Industrial manufacturing firms are implementing strategies to move from mere manufacturing activities to offering bundles of goods and services or solutions to their customers (Nordin, Kindström, Kowalkowski and Rehme, 2011). Shifting focus more towards services poses new challenges to manufacturing firms. Traditionally the expertise of a manufacturing firm lays in understanding the customers' process from technical point of view. However in service business the core is to understand the customers process and value creation, and the more customised the service is, the more in-depth understanding of the customers' business is required. (Grönroos et al., 2007, p.36-37) Suppliers must make the strategic decision on how to balance between standard and customized services. Higher degree of customization requires better customer understanding, closer customer relationships, exchange of information and contractual responsibility sharing which result in higher costs to the supplier because they require dedicated resources, customer-specific knowledge and constant adjustments to the offering due to changing situations. (Nordin et al, 2011)

Academic literature often categorizes services strategies depending on how much a manufacturing firm has moved from offering basic products to offering more complex offerings or solutions (Paiola, Saccani, Perona and Gebauer, 2013). This transition from mere products to service offering is called the continuum by Oliva and Kallenberg (2003). The most basic level of service offering includes only augmented product services supporting the sales phase, for example documentation and information transferring (Paiola et al., 2013). However these services are often grown in different parts of the organization, and therefore they are unprofitable and considered as a necessity to sell the product (Oliva and Kallenberg, 2003). The next stage and natural continuum is to include basic services for the after-sales phase to ensure the products functionality throughout the product life-cycle (Mathieu, 2001). These services can in basic level include for example spare parts, failure diagnosis, repairs and inspections, and on more advanced level services like maintenance, retrofitting, remote services, condition

based maintenance and monitoring, optimization services and failure preventing maintenance services (Gebauer, Edvardsson, Gustafsson and Witell, 2010). The more advanced service offerings may provide the services like outsourcing and co-operation starting in the pre-sales R&D phase, and also optimizing the customer business, not only product performance (Gebauer, 2008; Gebauer et al., 2010; Ulaga and Reinartz, 2011)

Table 5 provides an overview of the literature discussing different strategic approaches to service offerings presented as categories. Categorizing service levels as different service strategies is relevant for the present study, as the strategies are similar to the way the case company provides service offerings.

Mathieu (2001) identifies and makes a distinction between services supporting the supplier product and services supporting the customer's actions in relation to the supplied product. The main differences in these two categories are the focus and the depth of the buyer-seller relationship. In the first one the focus is on the product that makes a process possible, and the customization and the depth of the relation are low. In the second one the relationship is deeper and the offering is more customized. (Mathieu, 2001) Mathieu (2001) categorizes services as being product centric and provider dominant, and not focused on the customer's processes or business.

Table 4 Strategic service categories

Service strategy category	Description / purpose	Example(s)	Author(s)
Services supporting the supplier's product	Ensuring the proper function of the product and facilitating client's access to the product.	Aftersales services	Mathieu (2001)
Services supporting the customers action in relation to supplier's product	Supporting client's initiatives. Requires intimate knowledge of client's operations and how the service will support client's core activities.	Training services	
Product oriented services	Mainly simple services added to products usage. Also advice and consultancy services.	Maintenance contracts, financing, spare parts and optimization advice.	Tukker (2004)
Use oriented services	Product still at the core, but business model is not selling the product	Product lease, renting, sharing and pooling.	
Result Oriented services	Client and provider agree on a result, not on a specific product.	Outsourcing of activities, pay per service unit, functional results.	
Services supporting the customer's processes	Ensuring optimal usage of the product in its operational environment, and minimizing downtime.	Preventive maintenance, scheduled inspections, availability contracts and modernization.	Turunen and Toivonen (2010)
Services supporting the customer's business	Enabling growth and success for the customers' business.	Consultancy, training, financing, business optimization and integrated solutions	
Aftersales service provider	Standardized services for installed base for competitive price.	Spare parts, repair/trouble shooting, basic training, inspection/diagnostics.	Gebauer (2008), Gebauer et al., (2010)
Customer support service provider	Advanced and preventive maintenance services	Maintenance contracts, process optimization, process consulting, advanced operator training.	
Outsourcing partner	Reconfiguration of responsibilities in value chain by taking responsibility of the customers operating process.	Taking over customer maintenance functions, customer operating process, customer's logistics	
Development partner	Co-production of R&D services in pre-sales to gain hard to imitate competitive advantage.	Design and constructional services, process oriented R&D.	
Product lifecycle services	Facilitating customer's access to the supplier's good and ensure proper function in all lifecycle stages	Spare part deliveries, inspections, repairs.	Ulaga and Reinartz (2011)
Asset efficiency services	Aim to achieve productivity gains from the customers already invested assets.	Remote monitoring, software customization.	
Process support services	Assisting customers to improve their own business processes.	Efficiency audits, logistics consulting	
Process delegation services	Performing processes on behalf of the customer	Maintenance management, component or warehouse supply management	

Turunen and Toivonen (2011) expand the idea of Mathieu (2001) to better match the growing knowledge-intensity of the offered industrial services. The authors further divide the services supporting the customer into services supporting the customer's processes and services supporting the customer's business (Turunen and Toivonen, 2011). The two introduced categories also enhance the depth of the buyer seller relationship, and define the relationship in services supporting the customer's process as a "performance partner" and in services supporting the customers' business as a "strategic partner", while in the original customer supporting services the relationship is merely transactional (Turunen and Toivonen, 2011). Turunen and Toivonen (2011) also recognize that the presented service categories are indeed focusing on supporting the customer, and therefore focus more on the customer perspective and less on the provider, whereas Mathieu (2001) had a provider centric view.

Tukker (2004) introduces product-service systems, which are defined as "consisting of tangible products and intangible services designed and combined so that they jointly are capable of fulfilling specific customer needs" (Tukker, 2004, p.246). Tucker (2004) divides the product-service system into three categories; product- oriented services, use-oriented services, and result-oriented services. Product-oriented services start from offering only product related supporting services with only shallow customer relationship. On the other end of the models result-oriented category is functional results, where the customer is buying a result, rather than any specific technology to achieve it. (Tukker, 2004) The product-service system model is therefore in line with the product-service continuum introduced by Oliva and Kallenberg (2003), as the scale is from pure tangible products to purely intangible services.

Gebauer (2008) and Gebauer et al., (2010) divide service strategies into four distinctive categories depending on the suppliers level of involvement; aftersales service provider, customer support service provider, outsourcing partner and development partner. Also this categorization has taken influence from the product services continuum (Oliva and Kallenberg, 2003), as the different

categories range from lower price standardized services (aftersales services) to high customer involvement approaches like outsourcing and development partnerships, the latter being more customer-focused (Gebauer, 2008).

Ulaga and Reinartz (2011) identify four different categories of services for hybrid offerings, which they define as “one or more goods and one or more services, creating more customer benefits than if the goods and services were available separately” (Ulaga and Reinartz, 2011, p.5). In order to succeed with hybrid offerings a company needs to possess unique resources, like for example installed base product usage and process data and a field service organization, and distinctive capabilities, like for example hybrid offering sales capabilities and execution risk assessment and mitigation capability (Ulaga and Reinartz, 2011). The four service categories are divided into input-based (product lifecycle services and process support services), where the supplier promises to perform a deed, and output-based (asset efficiency services and process delegation services) where supplier promises to achieve performance (Ulaga and Reinartz, 2011). The article also emphasizes the role of gathering and utilizing the full potential of data from installed base, in order achieve the benefits of differentiating or reducing costs in service context (Ulaga and Reinartz, 2011).

For the present study many of the introduced service strategies are relevant because the case company is utilizing different strategies to different customers. As Kindström (2010) argues, the service portfolio needs to be dynamic and adaptable to different customer needs so no potential customer segment or revenue stream is neglected. However merely increasing offered services is not the solution as added services may not be the ones the customer needs or is ready to consider. Also in particular advanced services are highly relationship intensive and may not be possible with all the customers. In difficult cases the cost of sustaining the relationship may be higher than the achieved revenue. (Kindström, 2010)

4 METHODOLOGY

This chapter describes the chosen research methodology for this study. To study specifically what kind of value dredger customers are expecting and how they actually perceive value received, an exploratory and qualitative research approach was chosen. The applied methods are in line with the ones of embedded case study. After describing the methodological approach, the chapter continues by giving an overview of the case company, followed by an overview of the dredging industry and applications, and reasoning why dredging industry is a relevant segment on its own. Finally, the chapter ends in describing the research process and data collection methods.

4.1 Exploratory embedded case study

The goal of this study is to gain in-depth understanding of customer value expectations and perceptions from after sales services in the dredging markets as a phenomena and therefore qualitative case study was the chosen method. Traditionally case study methods have been used in for example scientific the areas of psychology, sociology, political science, business, education, nursing and community planning, to provide knowledge of individual, group, organizational, social, political and related phenomena (Yin, 2014, p. 4). Case studies are also suitable for exploring business networks and other business-to-business relationships in industrial markets as they capture the dynamics of the studied phenomenon and result in a multidimensional view of situation in the studied context (Halinen and Törnroos, 2005; Järvensivu and Törnroos, 2010). Case studies are also utilized in economics when studying a structure of a specific industry or for example the economy of a city or a region (Yin, 2014, p.4). Regardless of the field of science, the purpose of choosing case study as a method is to understand complex social phenomena, and allow the researcher to focus on a case to retain a holistic real-world perspective, such as group behaviour, organizational or managerial process, and international relations, or like in this case, how customers actually perceive value (Yin, 2014, p.4).

Case study methods have the most advantages compared to other similar methods when the questions formed with “how” or “why”, are asked about a contemporary set of events of which the researcher has only very little or no control whatsoever (Yin, 2014, p. 14). Case studies have many similarities with other research methods, like for example histories, experiments surveys, but can involve a wider variety of sources and evidence, such as interviews, direct observations, archived data sources, questionnaires and quantitative data (Yin, 2014, p.12). It is also important to note different methods may overlap and for example there can be a survey within a case study and vice versa (Yin, 2014, p.14).

The present study has an exploratory and qualitative approach. According to Saunders, Lewis and Thornhill (2003, p.96) exploratory studies are especially valuable when the subject phenomena is under-researched and requires new insights or the phenomena should be assessed in a different way than before. The authors continue that another advantage of using exploratory approach is that the approach is very flexible and adaptable to change. This also means that the researcher must be willing to change the direction of the study as new data arises during the research process (Sanders et al., 2003, p.97). It is noted also that this does not mean that the research would lack direction, but that the focus is initially wider and becomes narrower as the research progresses (Saunders et al., 2003, p.97). According to Saunders et al., (2003, p.97) the three main ways for conducting exploratory research are: a search of the literature, talking to experts of the subject and conducting focus group interviews.

The decision to use qualitative methods in this research is based on the complex nature of the subject phenomena and the need for a holistic understanding. According to Hirsjärvi, Remes and Sarjavaara (2004, p.152) the aim in qualitative research is to gain understanding and to uncover facts, rather than to prove existing claims or hypothesis. Another reason for using qualitative methods is that it is not always possible to present information as a quantitative numerical value (Hirsjärvi et al., 2004 p.151-152). As data collection methods for qualitative interview vary, there is no single standardized traditions or approaches for

analysing the data collected (Saunders et al., 2003, p.379). Although this poses some challenges for the research process, qualitative research takes into account that real-life situations are complex and happen simultaneously, and they also often have an impact on one another. Identifying these causal connections results in a more holistic overview of the phenomena. (Hirsjärvi et al., 2004, p.152)

Yin (2014, p.50) identifies single and multiple case designs as the basic types of case studies. He continues the categorization by separating the studies into holistic and embedded case studies. The decision between embedded and holistic approaches depends on the number of units to be analysed, holistic meaning only one unit of analysis, as embedded means several units within the same case (Yin, 2014, p.55). The present study applies embedded single-case design. The selected case is the dredging industry, which especially in the more complex projects focuses on four European dredging companies. The embedded units are the three different dredging companies using the case company's equipment, and also the dyadic data gathered within the case company.

Yin (2014, p.52) describes five different rationales where single case approach is appropriate; critical, unusual, common, revelatory or longitudinal cases. The present study can be classified as unusual, as dredgers as a segment is fairly different compared to most of the other segments of the case company. The present case also has some longitudinal features, as the aim is to capture the changes that have happened in the relationship, although the research design is not longitudinal due to time and resource limitations. The challenge when utilizing an embedded single-case method is to be able to focus enough on the boarder case level, and not to focus too much on the individual embedded units (Yin, 2014, p.55). Case studies often employ multiple methods for gathering data, and this one is no exception. The usage of different sources requires triangulation, which refers to relying on different sources to confirm that the data is accurate and telling what it is thought to be telling (Saunders et al., 2003, p.99).

Embedded single case study as a research method is employed because the objective of the study is to capture the dynamics of the customer value creation phenomena within the dredging industry from a dyadic and multidimensional perspective. The similarities between the chosen dredger companies support the singe case approach. Quantifying customer value with for example monetary figures is difficult, if not impossible, as it is very hard to measure for example what personal or organizational relationships are worth, which also supports the method choice. Customer value in an industrial context with long installation lifecycles has not received much attention in prior research, and as the present case requires a real-world perspective to capture for example the dynamics within the customer-supplier relationships and the changes that occur in customer perceived value over time. Primary data for this thesis was gathered through semi-structured interviews, and secondary data was gathered using multiple internal sources including case company CRM, informal discussions and a variety of global dredging organizations. A case-study research method allows the researcher to utilize different sources of data to take real life context into account and to observe causal connections relevant for this study.

4.2 Case company and offering description

The case company is globally a major player in providing marine and energy sectors with advanced technologies and lifecycle solutions. The company is divided in three different business lines; marine, energy and services. The current trends in the industry, and also within the case company, are improving efficiency and sustainability in order to ensure maximum economic performance with a minimum environmental impact. The current research focuses on after sales, or in other words service, period of the installations, but also marine new builds have to be discussed briefly as they have a high impact on future services. Installation or solution lifecycle is approximately 30 years, whole of which is a potential service business opportunity. Services business line accounts for approximately 45% of the case company’s annual revenue.

Table 6 provides an overview of different installation lifecycle stages and the different tasks that the case company service organization can provide for the customers in each stage. The listed tasks are examples of what can be provided rather than a standard package. For the context of this study the most relevant stages start from service period. However it needs to noted that customers have a holistic perspective of the case company and all the stages have an effect on the perceived value, and therefore they cannot be completely ignored. Services here is a generic term covering a multitude of different functions like for example; product support, technical support, spare parts, field service operations, product upgrades, optimization services and advisory services. The case company lists being able to support the customer throughout the whole installation lifecycle with a comprehensive portfolio and vast service network as their top priority and advantage.

Table 5 Service tasks in different installation lifecycle stages

Installation lifecycle phase	Service organization tasks
Phase before installation	• Support in specifying the requirements before the ship building
New building and delivery	• Component support • Commissioning • Support for tests and trials
Warranty Period	• Support for warranty handling • Warranty related deliveries and services • Maiden voyage
Service period	• Regular maintenance business, operation support at sea and in docks • Planning maintenance schedules, work and resources • Preventive maintenance • Logistics handling
Unexpected events	• Resolving problems related or underperformance or other technical problems • Trouble shooting and joint problem solving • Evaluating and deciding different ways to proceed and solve the issue
Upgrades and lifetime extensions	• Retrofitting upgrades and modernizations • Lifetime extensions and cost efficiency • Environmental compliance • Improving safety • Project management

The level of service offered and delivered by the case company depends on the requirements and needs of the end customer. On the smallest scale the service is merely providing spare parts according to customer orders. Second level of service offering is providing the end customer with maintenance work in addition to only spare part deliveries. On the second level deliveries and maintenance works are still based on the customer orders. On the third level the supplier, here the case company, aims to optimize the operations and required maintenance of the customer, by actively monitoring the condition of the customer's assets. Real time or fixed interval data ensures that customer is able to use the installation in the most efficient way and schedule the maintenance according to actual needs, instead of fixed intervals. The fourth and the last level of service is guaranteeing the performance of the customer's assets for the whole lifecycle of the installation. The last level requires real time remote support and monitoring and customers willing to outsource maintenance service activities to the case company. The service level model is fairly well in line with the one proposed by Ulaga and Reinartz (2011).

4.3 Case dredgers

Robobank (2013) defines dredging as "an excavation activity or operation usually carried out at least partly underwater, in shallow water areas with the purpose of gathering up bottom sediments and disposing them at a different location". Globally dredging is a big industry with multibillion annual revenues (6,415 billion € in total in 2014) (IADC, 2015). Typically the dredging process consists of four phases: (1) excavation, (2) vertical transport, (3) horizontal transport and (4) placement or use of the dredged material (Bray and Cohen, 2010). The purpose and objectives for dredging include keeping waterways and ports navigable, creating new infrastructure (e.g. harbours, airports, highways, dams, industrial and residential areas and wildlife habitats), coastal protection, land reclamation, mining and providing sand and gravel for the needs of construction industry (Bray and Cohen, 2010; Robobank, 2013). Worldwide there are four big globally active dredging companies, all of which are located in the Benelux

countries. The biggest dredging company is Chinese, but it mainly operates in Chinese markets (Robobank, 2013; Interviews) Three of the four Benelux companies were chosen for this research as they operate on the case company equipment. The three chosen companies all operate with similar revenues generated by dredging operations (Annual reports, customers 1, 2 and 3). The typical lifecycle of a dredger installation is between 25 and 30 years (Interviews). In dredging business the typical revenue model is based on the contractor being paid for removed volume (EUR/m³ removed).

According to Robobanks (2013) outlook report, there are five structural growth drivers in the global dredging market. (1) Global population is expected to grow especially in the coastal areas, and therefore more land has to be reclaimed, which will lead to more dredging operations required. (2) Global warming causes rising sea levels, and to protect the people living in coastal areas, protection against flooding needs to be constructed. (3) The volumes of seaborne trade will continue grow globally, and as container vessels are growing bigger in size, ports have to be expanded and deepened to match the growth. (4) The consumption of energy and metals will grow globally, and especially the exploration of oil and gas is done in remote areas, where new ports and infrastructure has to be constructed by dredging. (5) As the tourism continues to grow globally, there is a need for constructing for example new air ports, harbours, replenishing beaches and building new resorts. (Robobank, 2013)

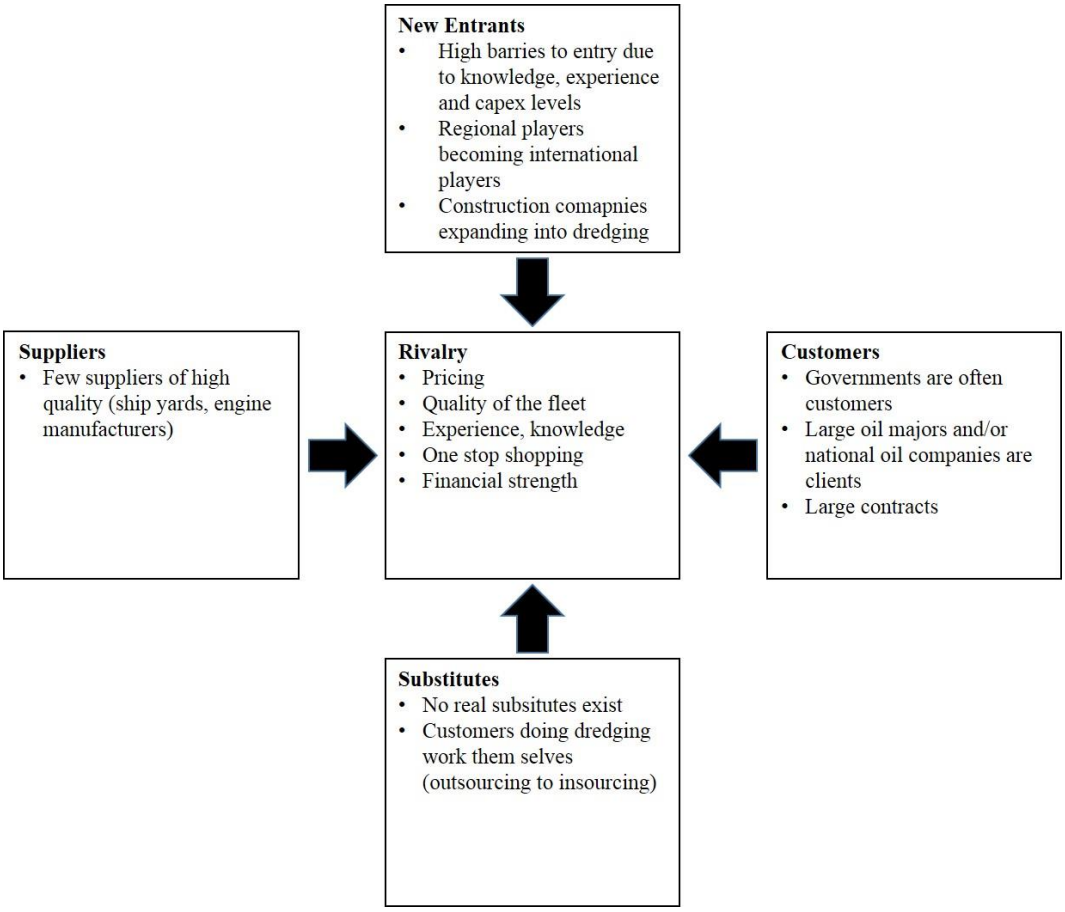

Figure 10 Competitive landscape in global dredging (adapted from Robobank, 2013)

Figure 10 displays the competitive landscape in global dredging markets in the form of Porters five forces model. In addition to the possibility of the Chinese dredging company entering global markets, the **threat of new entrants** is low. To engage in global dredging, the required investments would be massive. In addition, the ongoing dredging projects are becoming increasingly more complex, and therefore often only the most experienced companies (i.e. the four big European dredging companies) qualify for the job. (Robobank, 2013) **Customers** tend to have a lot of bargaining power in the global dredging markets. Traditionally governments are important customers for the dredging industry. Because governments still suffer from the global economic crisis of 2008-2009, the dredging industry also feels the effect as many infrastructure projects are on hold. Another big group of customers for the dredging companies comes from the

energy sector. Large global and national players in the oil and gas industry require services from the dredgers mostly in the early stage of their projects. The contracts are often significant in monetary terms, and therefore size and experience are valued. Therefore also here the four big European players take most of the market. (Robobank, 2013) **Suppliers**, meaning for the dredging companies for example shipyards and engine manufacturers, do have a moderate bargaining power. Especially for the more complex installations, there is only one shipyard building approximately 50% of the dredgers, and 3-4 engine manufacturers competing for the market share. However new shipyards are entering the market with increasing numbers. (Robobank, 2013) **The treat of substitutes** for the dredging industry is currently non-existing as there is no real competing technology for underwater excavation. (Robobank, 2013) In addition to the bargaining power of the suppliers, the rivalry among the existing players in the market is the most influential factor affecting the competition. The four big European companies are in a constant competition of the available projects, which drives down prices and encourages for innovation. The companies have also invested in other industries, like off-shore and windfarm installation, to ensure sufficient cash flows in the fluctuating markets. (Robobank 2013)

For the purpose of this research it is relevant to briefly describe the technology used for two different types of dredgers; cutter suction dredgers and trailing suction hopper dredgers, as they are the larger scale installations where the case company's engines and other equipment is used. A cutter suction dredger utilizes a rotating cutter at the end of a suction line. As the rotating blade come to contact with the seabed, it scoops up material, which is then caught in a stream of water being sucked up by a dredging pump. With proper blades and enough power, large cutter suction dredgers are able to dredge even solid rock. After being sucked by the dredge pump, the material is re-located by pumping it to a barge or to ashore via a pipeline. (Von Mayer, 2005) Trailing suction hopper dredgers use their own propulsion to sail at low speeds and simultaneously drag suction pipes extending to the sea bottom (Brady and Cohen, 2010). The material is mixed up

with water and sucked up to the ships own hopper for transportation (Robobank, 2013). After the dredged material is transported to a desired location, it can be discharged doors at the bottom of the vessel, pumped ashore via pipelines or discharged ashore trough nozzles at the front of the ship (Brady and Cohen, 2010). The largest trailing suction hopper dredgers can carry up to 45 000 m^3 of material, dredged from the depths of sometimes up to 150 meters. They are effective in dredging sand, silts, clay and gravel, but not very good with rocky materials. (Brady and Cohen, 2010)

4.4 Data collection and analysis process

In this study multiple methods were utilized for data collection. Primary data was collected through dyadic semi-structured interviews. Saunders et al., (2003, p. 246-247) define semi-structured interviews as non-standardized interviews, where instead of identical set of questions for each interviewee, there is a list of themes and topics to be covered, which referred to as the interview guide. Questions also may vary depending on the given answers or for example the position of the interviewee in the organization. In the present study interviewees were from both the case company and the customer organizations, so the point of view in each interview had to be taken into account. This resulted in slightly different questionnaires, both of which are located in the appendix. It must also be noted that additional and specifying questions may arise during the interviews, and the order of questions may vary from interview to interview (Saunders et al., 2003, p.247)

In the present study, in addition to the primary data gathered by interviews, also multiple sources of secondary data were utilized. Using multiple data sources instead of relying only for one is especially important in case study research because pitfalls of different research methods, like interviews, surveys or histories, can be tackled by verifying the data from different sources (Yin, 2014, p. 119). Saunders et al., (2003, p.189-190) categorize secondary data in three sub-groups; documentary data, survey based data and those compiled from multiple

sources. All three groups may include raw data, where only little if any processing has been done and compiled or published summaries, where some selection and summarizing has already been done (Saunders et al., 2003, p.188-189). Using secondary data as a resource has many advantages, including for example providing longitudinal data, quicker access than primary data, permanency of the data and providing comparative and contextual data (Saunders et al., 2003, p.200-201). However it needs to be taken into account that secondary data is almost always gathered for some purpose other than the current research, and therefore there might be biases. Also sometimes secondary data may be inaccurate and costly to obtain. (Saunders et al., 2003, p212-213)

In this study primary data was gathered trough a total of 10 unstructured interviews with both the customers and the case company personnel dealing with the same customers. Seven of the interviews were done face-to-face during a two week travel to the Benelux countries. Of the remaining three interviews, two were done by phone and one via video conference. All interviews lasted between 40 and 75 minutes depending on the schedules of the interviewees. The focus of the present study is on the service business of the case company and therefore most of the case company interviewees are service sales account managers responsible for the sales towards the chosen dredger customers. For understanding the case of service business, a couple of new build sales managers were interviewed as it was noted that new build sales have a high impact on the services side and vice versa. From the customer organisations the interviewees are responsible for technical matters and service procurement from the case company. All interviewees have extensive experience from the industry, ranging from 7 to 25 years in current or similar positions. An overview of each interview is presented in table 7 below. ID refers to abbreviations used in this study hereinafter, title is the interviewee's position in the company and organization is either the case company or one of the three chosen customers.

Table 6. List of interviews

ID	Interviewee title	Organization	Date	Duration
Case company interviewees				
A	Account manager	Case company	11.7.2016	58 min
B	Account manager	Case company	12.7.2016	56 min
C	Account manager	Case company	20.7.2016	70 min
D	Account manager	Case company	15.7.2016	65 min
E	Technical service manager	Case company	18.7.2016	60 min
F	Account manager	Case company	18.7.2016	30 min
G	Sales support director	Case company	25.8.2016	65 min
Customer interviewees				
H	Category manager, MRO	Customer 1	13.7.2016	90 min
I	Procurement manager	Customer 2	19.7.2016	40 min
J	Technical Director	Customer 3	18.8.2016	75 min

All interviews begun with a short introduction of the thesis topic and the researcher, and with a confidentially statement ensuring that no individual company or person can be identified from the final thesis. In addition an introduction letter was sent to the interviewees before the meetings. The goal was to identify the researcher more as a master's thesis worker rather than an employee of the case company in order to get more open answers. The relevant customer contacts were identified and the meetings arranged in co-operation with the case company internal people, who are in frequent contact with the customer organizations. Arranging interviews was a challenge due to busy schedules of the participants and ongoing summer vacation period, but in the end an interview from three different customers from the segment was managed. All interviews

were done one-on-one in order to minimize the effect of outside participants. With the exception of one interview being done in Finnish, others were done in English.

After introduction the interview began with questions regarding the background of the interviewee. The second part of the questions depended on whether the interviewee was internal or a customer; for internal people the questions were about the history with a specific customer, and for the customers' basic background information about their company and history with the case company. Next questions were about identifying the key value drivers for the customers from different points of view, and finding what is understood by "customer value creation" as a phenomena. The fourth part of the questionnaire was about value propositions, value expectations and value perceptions in different lifecycle stages of offering and also the perceived changes in the same factors. The last part was questions related to value of the business relationship, perceived changes in the relationship and how the case company is perceived compared to competition.

Interviews, with the exception of one, were tape recorded with a permission from the interviewees. One interview recording was not possible due to technical difficulties, so extensive notes were taken during the interview and transcription was done right after to ensure as accurate as possible result. For the recorded interviews transcription was done verbatim, resulting in 106 pages of transcript material. After transcription answers were categorized under eight different topics for further processing and analysis. The first topic was to identify what is understood by customer value creation and are there any differences between the customer and the case company view. The next three topics were value drivers (positive and negative), value expectations and value perceptions. The remaining four topics are relationship factors, value co-creation, change factors and other important. A coding system was used in the categorization so the answers could be found from the transcripts later and used for quotations. Also the most potential quotes were specially marked.

Secondary data for this study was gathered from both public and internal sources. Public sources include for example annual reports of the customer companies, web pages of both the customers and the case company, 3rd party market reports, news and reports and other intelligence from different dredging organizations, like for example IADC (international association of dredging companies). Internal, not publicly available data sources include CRM data, like for example customer visit and meeting reports, customer satisfaction survey results, technical installation information and historical sales volume data.

5 RESEARCH ANALYSIS AND FINDINGS

In this part of the thesis the empirical findings from the interviews and the utilized secondary data sources are presented and analysed. All of the findings are discussed in a dyadic perspective to identify distinctions and similarities between the answers from the customers and the case company. The chapter begins by presenting what is understood by customer value creation in general from both pints of view. Second, key value drivers generating value for the customers are identified. Understanding the underlying value drivers is required for understanding the third part, what the customers expect from the case company and how they actually perceive it. Dyadic perspective approach is used to distinguish points of parity between the customer and the case company point of view. Third part considers the case company's relationship towards the chosen customers, and the factors affecting the relationship to positive or negative. In the fourth part reasons for changes in customer perceived value and expectations are identified. Fifth, and the last part, identifies value co-creation in the subject relationships. The structure of the analysis is adapted from the semi-structured interviews, which can be found in appendices 1 and 2.

5.1 Understanding customer value creation

The case company mentions in many of its public and internal strategy and way of working presentations that creating value for the customers and other stakeholders is a top priority. As already seen in the literature review section of this thesis, there does not seem to be a unanimous definition for what customer value creation means. Therefore the first part of the interviews was about finding what is understood by customer value creation in both the customer and the case company organizations. This was also the case with both the customers and the case company representatives. However the views are quite well aligned. Roughly there were **two main streams of viewing customer value creation; purely monetary perspective and more abstract perspective** taking into account for example saving the customer a trouble or a feeling that the customer is supported

to name a few. The two approaches were not imperative and many interviewees mentioned both approaches and definitions for value creation. Below are examples of more monetary focused approaches from the case company:

"-it comes down to the difference between price and cost"

"-what brings in the end more margin to our customer. That can be anything."

Customers, in addition to monetary approach, emphasized especially the importance of the supplier understanding their business and where the money for them is coming from. This was mentioned by many of the case company interviewees as well, but customers underlined it more. One of the customers concluded:

"Manufacturers and contractors should think the same as we. We earn money means you earn money. If we don't, also somebody else will lose money, or not earn as much as would be possible"

Understanding the customers' business and operations was seen as the starting point for value creation by the case company. By understanding the process of how the customer is creating value for their end customer, processes can be improved to facilitate better value creation. It was recognized by both the customers and the case company that this task is difficult and requires a joint effort from both sides. As one case company account manager stated:

"You have to first start with what the challenge in the market place of your customer is, and then it comes to value creation. It is rather demanding but it is where it all starts"

After gaining the required understanding of the business landscape where the customer operates, the case company interviewees regarded value creation being more than just offering a product or a simple solution. Their approach was more comprehensive, including both monetary and more abstract values related to in the

end ensuring better performance for the customer. For example two different case company account managers stated:

"-more on process and optimizing their business. That is actually where I think value creation really takes place"

"If you know what kind of headaches the customer suffers from, then you can think about a solution, and value creation is all about concepts, solution for the customer that saves him a headache. So in the end saves him trouble, saves him money, and saves him better uptime of the vessel or other installation. So it is not simply giving them a detailed solution, it is about the bigger picture."

Overall both the customers and the case company's opinions on how customer value creation is defined and what it means for them personally was quite well in line with what is proposed by existing literature that was reviewed earlier in this thesis. One distinctive difference between the literature, the customer and the case company answers was how competition was taken into account when considering customer value creation. Many scholars (e.g. Ulaga and Eggert, 2002) emphasize the effect of competition and alternative options have to customer value. In the interviews customers took the competition into account significantly more often than the case company respondents. For example one of the customers stated:

"OEM quality and reliability are creating value, but it needs to be in line with the market and the market price."

5.2 Key value drivers and customer value expectations

Value drivers in the present study are divided into three sub-categories according to Lapierre's (2000) model. **The categories are product-, service- and relationship related value drivers**, and all include a benefit and a sacrifice domain. Some of the identified value drivers most likely are rather trivial and applicable to also industries and segments other than dredgers. However understanding these drivers is required for understanding the value creation

process of the customer, i.e. what are the customers expecting from the products and services and how is the case company perceived in relation to those expectations. The relationship related value drivers are required for understanding the customer's perception on how the case company is able to generate value for the customers in mutual interactions, and how the chosen communication and relationship arrangements affect the relationship. Many of the value drivers work both ways, so generally succeeding is creating value and failing in the same matter destroys or negatively affects value creation.

5.2.1 Product related value drivers and expectations

The term product used here refers to all case company products and solutions related to energy generation and the supporting equipment of the energy generation process in aftersales context, including for example spare parts, available upgrades and retrofitting possibilities. Individual products are not singled out here due to the enormous amount of available options and confidentiality reasons. Generally product related value drivers identified by both the customer and the case company interviewees can be divided into three broader themes, under which there are more specific drivers and examples. The boarder themes; reliability, OPEX reduction and innovation, are not absolute, and many of the drivers have features from different themes. Also the presented drivers are not arranged in any specific order, as it is difficult to quantify whether some value driver is more important than the other.

Although a definitive importance order cannot be given to the identified value drivers, all the customers and all the case company interviewees emphasized **the importance of minimizing downtime**, which falls under reliability theme. The special attention to minimizing downtime is due to the especially high day rates of the vessels in the dredging business. As the business is volatile and project oriented, especially while a project is ongoing the significance of reliability is highlighted. Dredging projects are typically conducted under a very tight schedule, and not meeting the deadline can cause contractual penalties. Downtime

can be caused by a multitude of factors related to both the case company products and for example human error on operating the vessels. From the case company point of view the most harmful scenario to customer value creation is components breaking before their scheduled lifetime. Also in the case of component failing it is important that spare part delivery times are short, as even a day's extra wait is costly. Ultimately minimizing downtime is a matter of quality. Interviewees from both perspectives emphasized the importance of quality as a driver, but customers were more focused on **the ratio between quality and cost**. They recognized and appreciated OEM quality, but stated that there is a limit how valuable that is, and how much they are willing to pay for it. Too high prices in relation to quality or reliability was a major sacrifice mentioned. Another important quality related driver was that **products should perform according to the sold specifications**. As performance is crucial for the business, products' not being able to match the requirements is a sacrifice as it causes for example inaccurate schedules and unexpected costs. Interviewees also emphasized the importance of product related availability, including the availability of spare parts with short delivery times and the availability of product performance, which in the case of engines usually output power that can be reduced due to for example some component malfunctioning.

The second product related theme mentioned by many of the interviewees from both sides was the importance of reducing OPEX, which have a significant impact on total lifecycle cost of the installation. Some of the factors reducing OPEX do overlap with drivers in the reliability theme and also with service related value drivers, however there are enough differences to separate it as an independent theme also. There are basically three methods for reducing OPEX, reducing energy consumption, in the case of vessels namely fuel consumption, extending the interval of required maintenance and better planning of maintenance to extend availability of the installations. Interviewees from both sides emphasized the importance and value of especially **the efforts for product improvements** that extend the required maintenance interval. Another option where the product is not

necessarily changed, but the condition is better monitored, in order to perform the maintenance based on actual condition rather than merely relying on pre-determined running hour based intervals is valued. Product improvement and condition monitoring also contributes to reducing the risk of unexpected breakdowns and downtime, which is seen as highly valuable by both the customer and the case company. Interestingly regardless of the highlighted importance of OPEX reduction, efforts for reducing costs from fuel and energy consumption were not very highly valued due to mainly two reasons. First, it was noted that in dredging operations it is very hard to measure whether savings in for example fuel consumption were actually achieved, due to the highly variable load requirements and operating profiles. Also the exact energy content of the fuel is often practically hard to determine. The second reason stated was that for example fuel costs are included in the project paid by the end customer of the dredging company and does not directly affect the dredger company's expenses. Reducing fuel consumption was more valued in the new build phase when investing in a new vessel, but not so much in the aftersales service phase, where some products could reduce the consumption of existing vessels.

The third theme of value drivers identified can be broadly described as innovation. All the customer participating in this study mentioned that **innovation and staying ahead of competition** is valued as it a source of competitive advantage. The industry is highly competed and especially the fear of the Chinese companies entering the market is pushing the requirements from the technology higher. This was also recognized by the case company interviewees. All the interviewed customers mentioned for example environmental aspects and sustainability is a core value for their business conduct and new solutions to make dredging operations cleaner are important and valued. For example there are trends to move away from traditional fuel options to more environmentally sustainable options like LNG. However it was mentioned also that benefit measurement is sometimes hard and the feeling of uncertainty is a sacrifice. For example two of the customers mentioned the importance of "proven products"

that are known to work in dredging operations. Customers and the case company representatives also mentioned that trust and reputation is very hard to repair in case for example some product new product does not perform according to expectations. Innovation and having the newest technology is more important in the new build face of the installation, than in the aftersales service phase, and in new products or improvements for older installations the benefits are not always recognized. Also with innovation the dredger customer value the effort of developing something just for them, as they are a special segment with specific needs.

5.2.2 Service related value drivers and expectations

Service here refers to all services offered by the case company ranging from basic maintenance services to process optimization and product development services. For some examples services are mentioned more specifically, but mostly services are discussed as a larger concept. Like with products, also with services the identified value drivers can be divided into two larger themes, **quality and availability**, under which there are more specific drivers and examples. Also a few value drivers that do not fit under the presented themes are discussed separately. Some of the drivers presented do overlap with for example relationship related value drivers, but here they are discussed from services perspective. Many of the value drivers here also work two ways, succeeding is a benefit but failure is a sacrifice.

In service context **quality** was identified as an important driver generating value for the customer by both the customers and the case company representatives. Quality here was understood covering many aspects ranging from for example the actual expected quality of a maintenance job to efficient planning and managing a job, depending on what level of service is expected. The simplest driver is actual expected quality and achieving it the first time. It is also the easiest to measure as the results of a successful maintenance work are observable directly. Quality is also expected by the customers from an OEM service provider as the price is

higher. Both parties emphasized that especially the ratio between **price and service quality** must be right, and OEM quality is valued but not for price that is perceived as excessive. Most of the interviewed customers also relied on the case company in planning and preparing the maintenance or other service job especially in the case of large scale overhauls. As one of the customers stated:

"-our core is to dredge, not to manage that (service) process."

Managing a complex and large scale maintenance job or a project introduces other aspects to the service quality theme. Good planning and preparation was highly valued by all the customers and current expectations was to schedule maintenances beforehand to maximize uptime. Successful planning and quality is also related to meeting the schedules of the maintenance as for example extra time spent in dry-dock is costly. For the preparation to be successful a proactive approach from the supplier is expected to avoid surprises later on. This was recognized by both the customers (first quote) and the case company interviewees (second quote):

"We have the work preparation, we have the scoping, we have the execution and we have the commissioning. During this time more work can emerge, and that more work should have been known already at the beginning."

"-that means time investments, but on the other hand it is also more efficient because at the end of the day I am convinced that we save time together with the customer by putting more effort in the preparation phase and saving some troubles in the execution phase."

It was mentioned by both the customers and the case company interviewees that emerging extra work is negatively affecting value as it results in higher than expected costs and extra docking time in the end, which is seen worse than high costs that were known beforehand. Both parties recognized the issue being avoidable by better communication and documentation starting from early planning. Also the benefit of having one person responsible of the process from

the start to the end was mentioned. Too many changes in the responsible people introduces a risk of losing information and the service quality diminishing. Expected service quality is not only the physical maintenance job but the whole process starting from the sales phase and ending only after invoicing and follow-up. Customers expect that no problems arise at any point, which is difficult as different departments are responsible for the functions. Case company representative stated:

"There is a multitude of things that can spoil a job and I think that Mr. Murphy is having a fantastic time."

Availability in the service context contains for example global coverage of the service network, flexibility of actions and the service organization in case of emergencies, availability of service engineers and superintendents and the speed of finding a solution to the customer's issue. As dredgers operate all around the globe depending on their current projects, the availability of OEM service engineers and superintendents is valued by the customers. The same level of quality is expected from an OEM all around the globe, which is in some cases hard to achieve due to for example the availability issues of educated and experienced labor in some third world countries. Flexibility was recognized as being valuable by both the customer and the case company. The importance of flexible services organization was emphasized especially in the case of some case company product related emergency that is causing down time for the customers installation. Examples of flexibility were for instance being able to send an engineer or even a technical expert to the site within the same day. In more minor cases flexible services could mean for example getting into contact with the correct person from the case company with the answers for a problem. Speed in finding a solution for an issue was also extremely important for the customers. With complex installations like the dredgers it is not always immediately clear where the fault actually is, even after a problem is observed. Finding the correct solution fast is then valued in order to avoid the similar issues in the future.

5.2.3 Relationship related value drivers and expectations

As both the case company and also the customers are very large organizations, managing the relationship and what is happening in it is sometimes challenging. When considering the value drivers or what kind of value the relationship adds for the customers' business, a separation between the organizational relationship and the relationships between individual actors has to be made, as different factors affect them. Relationship value and expectations are also affected by the strategic approach and level of service that each customer desires and is managed by. Generally the deeper the relationship involvement, the more the customers are expecting from a supplier. Deeper relationship involvement with the customer is also linked to value co-creation opportunities which generally are generating value in a relationship. Other than being divided into organizational and individual relationships, the relationship value drivers can be divided under expertise and attention themes based on the interviews.

Based on the interviews, in the dredging industry the customers tend to be loyal and rely on the OEM with a proven history to provide services and products for their installation. It was acknowledged by both the case company and the customers that **OEM expertise** is a clear relationship value driver. OEM expertise adds value especially when knowledge is transferred from the supplier to the customer, as this helps the customer to use its installation in a more efficient and productive way. **Knowledge transfer** is generally only possible when there is direct interaction between the customer and the supplier, for example when performing maintenance or having a meeting to discuss about for example new developments or possible issues. The clearest example of knowledge sharing generating value recognized by all the parties is **technical meetings** where technical people from both organizations discuss and find solutions together. Expertise and sharing knowledge is also important for building trust within a relationship. Trust is a factor affecting almost all conduct within a relationship to the better or worse. Building up trust is a slow process but destroying is easier and it can happen due to for example a bad service experience, malfunctioning product

or exceeding promised costs. If there are trust issues in the relationship, it will make for example the sales of future products or services difficult. As one customer said:

"-if your name is gone, your name is gone. And it is very hard to get it back, with whatever you are trying to offer to the market again. So you have to be careful with that."

The second value driver theme under relationship value can based on the interviews be defined as attention. **Attention** here means that it is important and valuable for the customer to feel and recognize that the supplier cares about the wellbeing of the customer. This can show in a number of ways. The most obvious form recognized was fast response in case of a problem. Problems are not liked, but **fast response and solution** is seen as valuable. In the interviews parties from both sides stressed the importance and value of **customer intimacy or local presence of the supplier**, meaning for example frequent customer visits by both technical and commercial people. It was emphasized that it is important that the right people are talking together from early enough in whatever the ongoing process or interaction. It was mentioned by the customers that if for example technical knowledge is available via email instead of the person being present in a meeting, it can be unclear who is truly in charge. A case company representative highlighted the importance of understanding different customer contacts:

"There is no one customer, inside the customer there are a lot of customers in one customer."

In addition especially the customers emphasized that frequent enough visits from the supplier's management are valued as they create a feeling of the supplier caring, which is on way of building up trust. Another way is for example **open information sharing**. Both the customer and the case company interviewees named examples where in case of a problem the openness of information during the problem solving process was highly valuable for the relationship. Also in case

of issues customers highly value the supplier taking **responsibility and liability** both in monetary damages and solving the issue. One of the customers summarized problem handling:

"It is not necessarily about whether you have a problem, everybody sometimes has. It is about how you deal with the situation."

Relationships add value to the customers' business also when the supplier I able to **develop and improve customers processes** to be more optimal. An example from better spare part handling system that improves spare part delivery times significantly especially when a project is ongoing. Developing a new process bot for and with the customer also is an indication for the customer that the supplier cares about the customers' business. A major issue hindering value creation within the relationships recognized by both the customers and the case company was **getting the right people to talk to each other**. If for example commercial employees don't have enough technological knowledge and the response requires participation from someone with more technological expertise, the answer received by email may seem faceless and take some time. The result is longer lead times for requests for quotation and other initiatives made by the customer.

5.3 Customer relationships effect on value creation

Although the three customers participating in this study are direct competitors with each other, are of similar size and operate on the same markets also on other than dredging, there are differences on how the relationships are managed with each customer. **Differences arise from for example organization structures and ownership base.** The interviewees also mentioned that cultural differences between how business is conducted in different countries possibly have an effect on the relationships, although all the customers are from Benelux area. Common to the relationship with all the chosen customers is that there are some tensions hindering the relationships with the case company, although all mentioned that the relationship has improved significantly during the recent few years period. Issues

arise from for example **previous quality issues having an effect on trust, previous poor relationship management processes and market situations**. This section focuses on analysing the differences in how the relationships with the different customers are managed and what kind of effects the differences have on value creation within those relationships. In the context of large industrial operators a separation between individual business relationships between people and the larger organizational relationship and opinion has to be made, and here they are discussed separately.

The case company introduced a new way of managing customer relationships to a certain group of customers few years ago. The new way includes a dedicated team of both commercial and technical people handling a customer. Both the customer and the case company interviewees mentioned that the **team approach** was a significant improvement for the relationship as now the team is in control instead of a larger number of people scattered across both organizations. The customer mentioned that changes to the employees within these teams, due to for example people changing jobs, has sometimes been harmful for the relationship and trust. Another improvement mentioned by the customers and also the case company were so called **technical meetings**, where technical experts sit down with the customer frequently to talk about possible issues and how to solve them. Overall the teams and technical meetings have improved communication between the case company and the customers, although there still are a number of occasions where communication should be improved. For example lost information, miscommunication and not talking to the right person were mentioned as issues still hindering the relationship. Also the customers mentioned that there is a great difference in received message whether it comes from a technical or commercial point of view. Below are a few quotes by the customers related to experienced communication issues:

> *"The first point of contact having the right discussion in-depth is the right approach, in detail is the right approach, the only right approach."*

"I feel that in this process the case company is losing in quality, and in time, through put time, because it is not organized properly. Because a lot of information is lost during early discussions, the discussions on board, and the discussions in the workshops is not aligned and that costs us a lot of money."

Customer relationships differ also depending on **how independent the customer desires to be** in their operations and maintenance activities. One of the customers participating in this study relied on the supplier by having a centralized contract in place for outsourcing maintenance and maintenance planning, while the others wanted more independence and purchased for example services more as one time deals. The desire for independence is visible also in for example remote monitoring services that the more independent approach customers were not as interested in. Communication with the customer relying on the supplier with the agreement was more open than with the rest of the customers. Customer's willingness to share information and open their operations to the suppliers is also a trust related matter. A lack of trust causes the customers to keep to themselves more. One of the customers desiring independence explained their reasoning:

"We don't want to give control of a core process like maintenance to a third party. We should be the one carrying the risk towards or end customer."

As all the organizations, both the case company and the customers, are very big organizations, there is **a difference in individual customer-supplier relationships and the bigger organizational relationship** and opinion. For example the case company representatives mentioned that the customer representatives participating in problem solving with the supplier understood the issues better than less participating individuals. Generally all the interviewees were happy about the personal relationships they had with representatives on the other side. However, the organizational relationship is affected by information flow bias, a phenomena recognized by both the parties. As one of the customers explained:

"The more of the products we have, the more people are involved and the more people start complaining about. Because bad news travel fast."

Information flow bias results in deterioration of the suppliers reputation, as employees within the customer organization often tends to talk to each other about the issues they are having, and not so much about the successful cases or well working products. Also customer reporting practices affect the organizational opinion. One of the account managers summarized:

"-reporting downtime means a constant flow of only negative information to the desk of the management. But if we do for instance an outstanding job, this is no news and it is not reported. It is fantastic, but there is no reason to report is, so it is a biased flow of information."

5.4 Reasons for change in customer values and relationships

Customers value expectations and perceptions are not constant over time, and the dredging industry is a suitable segment for illustrating this as the installation lifecycles are quite long, approximately 25 to 30 years. This study follows the model presented by Flint et al., (1997) dividing change drivers by the location of their occurrence. Changes may happen due to supplier or customer organizations actions or external to both in the business environment. As the lifecycle are very long, the effect of for example changing international regulations for the marine industry as a whole has been dramatic. However the changing regulations are well known beforehand and therefore both the supplier and the customers should be able to respond accordingly. The suppliers should be able to also anticipate where the customer organizations and businesses are headed to keep up with the competition. All the participating interviewees have a long history in the dredging industry and with the relationships with the customer and the case company. To better grasp the changes in relationship and the market a longitudinal study would be appropriate, but due to master's thesis time an resource constraints it is not possible.

Changes located at the case company have affected customer value creation to both directions. As discussed in the last chapter the moving to a team based approach in customer relationship management was seen as a major improvement by the customers. Also giving more **focus to a specific industry**, like dredging, was seen valuable by the customers. For example, seeing that the case company invested in developing new solutions specifically dredging in mind, gave the customer a feeling that the supplier cares. **Negative experiences**, like for example quality defects, have a long effect on customers perceived value. Even one bigger issue has led to decreased trust within in the relationship, and once trust is lost, it takes a long time to repair especially in the bigger organizational level. Also new products that fail to perform according to expectations negatively affect customer value creation for a long time. Due to long installation lifecycles, bad reputation of a product may lead to losing the business in some product to a competitor for long period of time, as the interviewed dredger companies tend to rely on OEM supplier with the maintenance in addition to the product only. **Quality defects** and other issues may also lead to personal and organizational conflicts between the actors. Interestingly interviewees from both the customer side and the case company emphasized that well-handled **conflicts improve the relationship** as an outcome. However even if the relationship or for example way of working improves as a result of a conflict, conflicts tend to negatively affect trust that has long lasting consequences and other effects hard to predict.

In addition to changes due to supplier actions, also **changes in customer's way of working** affect value expectations and perceptions over time. In the present study the two major customer actions affecting change were **shifts in overall strategy of the dredging companies and changes in the internal way of working**. All the interviewed dredging companies had grown over time also to segments other than dredging. Dredging markets are volatile and the companies are by for example acquisitions now doing other marine activities as well to achieve more constant cash flows. As a result the companies have for example acquired vessels with more case company equipment installed, and as the product portfolio is now

larger, they expect different things, and also perceive different added value from different products. One interviewed customer had also changed its **approach to purchasing** to a more strategic partnership approach, which improved the relationship, but also affected the customer expectations. From only purchasing maintenance, services and spare parts, the customer now expects the case company to be more involved in optimizing their operations as a whole. Increasing competition is another point that has shifted the focus from mere products and services to requiring more advanced services like optimizing and predicting operations. Generally, with some differences among the interviewed customers, the customers' expectations towards the case company changed along with the installations getting older. **Newer vessels and other solutions receive more attention** and the focus and for example requirement for OEM service was less for older installations.

As mentioned earlier dredging business is highly affected by **the global market situations**, and during an economic downturn when investment levels globally are low, there are fewer projects to compete for the dredging operators. For example low oil prices greatly affect dredging business as oil companies are major customers for the dredgers. Another example is the artificial islands in front of Dubai, which were put on hold when the global economy plummeted. The islands were big projects for the dredgers and putting them on hold meant less work. From the case company point of view, less dredging projects equals less maintenance work as the dredgers are not gaining running hours. Bad market situations also affect customer expectations towards the case company. The customers tend to be more focused on the costs, while in the contrast, during high workload the customers tend to focus more on fast problem solving and minimizing downtime.

In addition to global market situations, also **global regulations and legislations** have affected the marine industry as a whole and in the process also customer expectations. Especially the tightened environmental regulations have forced both the case company and the dredger companies to seek more environmentally

sustainable options. In the case of engines this means either using cleaner, more expensive fuel oils or cleaning the exhaust gasses afterwards. The newest and still ongoing process especially with the dredgers is the movement towards LNG and other biofuels as the source of energy. Changing to a new technology is always a challenge as the customers expect a well-functioning solution and with complex products taking every possible aspect into account can be difficult. Dredger companies being large corporations, they know the available competitor options for their new vessels. Technological advancements and price levels of the competitors affect customer perceptions and expectations. Higher price levels are not necessarily a bad thing if they can be justified with for example better quality, performance or service. The challenge with new products is not only successfully introducing them to the customer but also to the shipyards building the dredgers as they have a major influence on which equipment will be installed to the vessels. Shipyards may be more focused on the costs than the performance, as they are not the end user of the finished product. Some of the dredging customers design the ships themselves and some use engineering offices, which needs to be taken into account in the sales process.

5.5 Value co-creation

The analyzed research data has elements supporting service-dominant logic theory, where value is realized in use, rather than in exchange of goods (Vargo and Lush, 2004). The case company has shifted, and also the customers are requesting, more participation in optimizing businesses and maintenance planning. These interactive processes were seen as creating value by both the customer and the case company. The clearest implication supporting value co-creation within the present research takes place in the case of **joint problem solving** occasions, as also suggested by Aarikka-Stenroos and Jaakkola (2012). Here the research material is analyzed to illustrate what kind of value co-creation opportunities exist in the present case dredgers after-sales, and how they affect value creation and the further development of the business relationships.

Interviewees from both the dredging companies and the case company emphasized the importance **direct interactions** between the companies during for example maintenance and service operations, the earlier mentioned technical meetings and organized seminars. The most important value within these interactions was mentioned to be **knowledge transfer** that improves openness in the relationship, helps the customers to better utilize their installations and helps the case company to improve their offering to better match the requirements of the demanding dredging operations. Knowledge transfer was perceived as valuable also because sometimes issues can be related to the operation of the installation rather than a product defect. In the new build phase of an installation co-operation exist also between the case company and the shipyard together with the customer, and perceived result was a better end product. The case company organized also **seminars** to discuss new developments together with the customers, sometimes alone with an individual customer and sometimes larger ones with many dredging companies present. All the parties participating in this research wished for more interactions to facilitate co-creation of value, recognized time constraints and trust issues sometimes reducing the opportunities. It was also mentioned that agenda of the interactions other than maintenance activities needs to be carefully designed to reduce lost time from conducting actual business critical operations.

In addition to interactions to transfer knowledge, value co-creation between the dredger companies and the case company are strongly present in cases requiring **joint problem solving**. The process starts with root cause analysis (RCA) after a problem or an issue occurs. Depending on the severity and the nature of the issue, a varying amount of people and management involvement is required in the process. For a RCA to be successful the customer and the supplier need to identify the problem as clearly as possible. An example often mentioned by all the interviewees was a quality issue that was almost an epidemic on all dredging installations and required a lot collaboration to solve. After the issue was recognized, operation and failure statistics were required from the customers to better understand the underlying reasons for the issue. After data gathering the

information, the case company mobilized research and development resources to find a solution. During the process customers were kept up to date of the process, and they even visited the case company factories to see and discuss the development in action. Once the solution was ready, customer collaboration was also required to test the solution in a real life scenario. The process of co-development increased trust and openness in the relationships, and created concrete value for all the participants in the form of more reliable products and operations. Currently there is a focus on developing remote monitoring systems to enhance the exchange of information to better predict and prevent issues and problems before they occur. The aim is further increase operational reliability. Trust issues between the parties however sometimes tend to hinder the development.

6 CONCLUSION

The main objectives of this master's research was to identify key value drivers and customer expectations from the case company aftersales services in the dredging industry, and to compare the expectations to actually perceived value. An objective was to also study how customer value expectations and perceptions have changed over time during the business relationship, and to identify reasons affecting change. The thesis first reviewed existing literature on customer value and reasons for change, business dominant logics and different strategic service business models. Secondly the research method, the case company and the case dredgers were introduced.

The present research utilized an embedded single-case study method, which was chosen because it manages to grasp the complexity of the case in a real-life context and is therefore beneficial for the case company. Primary data was gathered through semi-structured interviews from both the customers and the case company representatives. The case dredgers in this study consist of three major European dredging companies in close collaboration with the case company. From the case company the interviewees are personnel dealing with the dredgers on regular, even daily basis. All the interviewees from both the case company and the customers have a long history with the dredging industry and power generation solutions. In addition to the primary interviews, also secondary data from both internal to the case company and public sources was used to strengthen the results.

This chapter concludes the master's thesis by answering the research questions based on the data analysed in the previous chapter. This chapter also gives managerial implications for the case company to further improve the relationships and the value creation of the dredger customers. Lastly this chapter discusses the limitations regarding this study and suggests further research to find solutions for the presented issues and to address the gaps left open by this thesis.

6.1 Answers to the research questions

This section provides answers to the research questions. The section is divided in three parts to address all the research questions individually, although some of the answers overlap with the answers of other questions as well. The answers are a synopsis of the most important factors presented in the previous analysis chapter and they are presented in a form of tables and figures when possible. Based on the answers a comprehensive picture on the formation of customer value in the dredging industry in aftersales context can be created. The focus of this study and the answers is on the aftersales phase of the installation lifecycle, but some new build phase aspects have to be discussed also as new builds affect the future services greatly.

1. What are the customer value expectations from engine services and service products during the aftersales service period?

The goal of the first question was to identify key dredger customer value drivers and expectations during the aftersales service period. Understanding the factors customers are expecting is essential for understanding how customers actually perceive value creation from the case company offerings and what could be improved. The identified value drivers are gathered into table 8 to give the reader a more comprehensive picture. The drivers are presented under product, service and relationship related domains under which there are general themes to categorize the actual drivers. Most of the drivers presented work both ways, meaning that success can be considered a benefit creating value and failure a sacrifice destroying perceived value. The interviewees emphasized the meaning of some drivers more than others, but the presented drivers are in no specific importance order as absolute importance is highly occasion context related. Value drivers are also the things that the customers expect from the case company products and services, as well as from the competitors offerings.

Table 7 Key value drivers for the dredging customers

	Theme	Benefits (Create value)	Sacrifices (Destroy value)
Product	Reliability	• Preventing downtime • OEM Quality • Availability (spare parts, performance) • Performance according to specification	• Price / quality ratio • Long spare part delivery times • Premature component failures
	OPEX Reduction	• Extending component life time • Reducing fuel consumption (sometimes) • Maximizing uptime	• Measuring savings is difficult
	Innovation	• Environmental efficiency • Specially developed products • Technology leadership	• Uncertainty of success
Service	Quality	• Quality, first time right • Efficient planning and preparation • Meeting the schedules	• Price, especially if estimation is exceeded • Losing information and miscommunication
	Availability	• Service all around the globe • Fast response to emergencies • Flexibility • Speed to solution	• Inconsistent quality
Relationship	Expertise	• OEM Expertise and history • Sharing knowledge • Technical meetings	
	Attention	• Open information and visibility of actions • Feeling that the supplier cares • Taking responsibility and liability • Process development	• Not talking to the right people • Not knowing who is in control • Long RFQ response times

The identified value driver themes under the product domain are reliability, OPEX reduction and innovation. All the interviewees highlighted the importance of downtime reduction, which is placed under the reliability theme, due to the very high day rates of the dredging vessels, which correlates to lost money in the case of for example breakdown of a critical equipment. The customers also highlighted that the ratio between quality and price must be right. They mentioned that they understand that OEM equipment and service is generally more expensive due to all the side costs, but emphasized that higher prices must show in the quality also. Operational expenses are a major portion of a dredgers lifecycle costs and due to increasing competition the customers' value efforts to reduce the costs especially during bad market situations. Innovation is valued especially in the new builds but also when introducing for example new concepts for the maintenance and performance of the existing vessels.

In service domain the identified themes are quality and availability. Service quality is related reducing downtime and for example the time a vessel is required to stay in a dry dock. For example if a service job is unsuccessful, repairing and fixing the errors may result extra days the vessel has to stay off service. As major service jobs are complex the customers are increasingly expecting efficient planning to keep the schedules. Also all the work is expected to be known beforehand, to avoid exceeding the costs and schedules. All the interviewed dredger companies operate globally, and it is important for them to be able to get high quality service all around the globe. The importance grows especially in case of emergencies. Also the dredger vessel schedules may change even with a short warning, and the customers expect flexibility from the case company.

The relationship domain includes two themes; expertise and attention. As the lifecycle of a dredger installation is long, and the installations are complex, the dredger companies rely on OEM suppliers with their installations for a long time. Therefore it is crucial for the customers that the supplier has the expertise to support the customer throughout the installation lifetime. Especially sharing information and knowledge to get the best performance out of the installations and

fixing possible problems was found important. Secondly the customers expect special attention from the case company as they are a special segment with special needs and loyal customers. A feeling that the supplier cares, gives the customer a piece of mind. Openly sharing information, especially during problem solving process, was mentioned as an important thing by both the customers and the case company. In the attention theme sacrifices were mostly related issues emerging from big organizations. Sometimes it is not clear who is in control and who is the correct person to approach with an issue. This results in incorrect information and long response times.

The identified key value drivers contribute to the gap in existing literature of customer value creation by examining a context of aftersales services within large scale industrial applications. More specifically this research gives coverage to the dredging industry as a part of the bigger marine industry, which has received less attention compared to some other industries especially from the supplier point of view. Compared to customer value research reviewed in the beginning of this thesis, the identified drivers and customer expectations are more specific. While the earlier literature focuses on holistic illustration of customer value creation, result in this study have a strong real life affiliation, that benefits especially the case company in future decision making.

2. How customers actually experience and perceive value from engine services and service products during after-sales service period?

The objective of the second research question was to compare how dredger customers actually perceive value, and to identify possible point of parity between the customer expectations and current situation with the case company services and products. Here customer value perceptions are compared in relation to the customer expectations identified while answering the first research question. Points of parity can be both exceeding the customer expectations and requirements and falling short of the expectations. From the case company point of view the not yet optimal aspects are however more useful as they can be

regarded as opportunities for improvement, to create more value for the customer and to make the customers more satisfied with the products and the supplier relationship.

Customers mentioned that the case company is valued as a partner especially due to its experience and expertise in the marine power generation industry. They regard the case company employees as professionals and appreciated the easiness of interaction as the case company is able to provide an answer or a solution, and understands well what the customer is asking or requiring. Customers were also generally satisfied with the product performance, but also mentioned on a few occasions that sometimes the high performance comes with more maintenance, and that is something they wished the case company should focus on. In the case of problems the open sharing of information during the initial RCA and with the following solution development process is valued by the customers. However, depending on how much the person is involved in finding the solution, the customers wished that finding the solution could be faster. The personnel involved in the process generally understood better that development may sometimes take time.

Possible quality and quality / price ratio issues negatively affect the customers' value perceptions in the case of both services and products. The effect of a quality issues, especially if it can be considered an epidemic, have a long lasting effect for the customers perception, even after the issue is fixed. In addition to actual monetary losses due to possible downtime, especially the organizational opinion within the customer organization regarding a supplier is very hard to repair if the trust is lost. Bad news tends to cumulate as people talk about the occurred failures. Good news, well working products or successful service or maintenance job is not as interesting as a discussion topic. Getting also the good news through to the customer organization and management requires hard and systematic work. If possible, quality should be fixed sooner by for example better monitoring and analyzing failure statistics before they escalate into bigger conflicts. Customers'

perception of quality is a major factor when considering the supplier choice for the next new build within the customer organization.

Difficulties in communication between the case company and the customers still sometimes negatively affect customers' value perceptions, although the introduced team model has improved things recently. Issues maybe at both the supplier and the customer end, and they mainly originate from not having the correct people discussing about the matter at hand. If the responsible person is not clear, the result is long lead times to quotations and other initiatives, which negatively affect the perception of a supplier. Another mentioned issue mentioned was sometimes mixed information or message from commercial and technical personnel. The solution for the issue could be better internal exchange of information. Involving management to the communication towards the customer and also management visiting the customers more often was requested by some customers. Management involvement gives the customer a perception that the supplier is fully committed to caring about the customer's wellbeing and business success.

The second research question contributes to the gap in the exiting literature especially with the dyadic perspective and also with the context of under researched industry. The dyadic perspective is especially interesting for the case company as it enables detecting possibilities for improvement beyond their own perceptions, and also duplicating the ways of working perceived as good to other customer relationships. From the academic point of view, most of the customer value studies referred in the literature section are done with a focus on either the supplier or the customers. This research adds to the existing literature by combining views from both to form a comprehensive picture in the marine industry aftersales services which has yet received only scarce interest in the field of customer value creation studies.

3. How have the customer's value perceptions and expectations changed during the business relationship?

The objective of the third and last research question was to identify reasons and events affecting changes in customer value expectations and perceptions over time during the business relationship. Due to the long lifecycles of 25 to 30 years of the dredging installations, the industry suits well for studying the topic. Here the reasons and events resulting in changes in either the expectations or perceptions are presented by dividing them into categories by their location of occurrence. A change can happen to either better or worse. The presented reasons are in no specific importance or effectivity order as quantifying the change of some events is very hard. From the case company point of view recognizing important events helps to predict how the customer reacts to different actions. Table 9 illustrates the change triggers within different locations.

Table 8 Changes in customer value perceptions and expectations

Supplier located changes	Customer located changes	Environment located changes
• Communication, team approach • Technical meetings • Personnel changes • New products • Product improvements • Service performance • New service concepts • Conflict management • Customer focus • Pricing changes	• Strategy changes and acquisitions • Purchasing approach • Installation lifecycle phase • Point of contact • Conflict management	• Market situations • New regulations and legislation • Competitor moves

Improved communication from the supplier's side was recognized by all the customers. Especially the team approach and the introduced frequent technical meetings made the relationships more open and generated trust. Moving from standardization to treating customers as individuals depending on their needs is recognized by the customers. However big organization sizes slow down the

exchange of information and increase bureaucracy. Also changes in the teams handling a specific customer also have hindered the relationships as building up trust with new people takes time. The introduction of new products and service models has had varying effects. The customers appreciate the efforts to better plan maintenance activities beforehand and the efforts that the case company has shown to improve operational reliability. However a new product that does not work according to expectations may have long lasting effects and possibly result in the customers changing supplier. Also service performance affects customers' perception of the case company. Many successful projects are required to repair trust, in case some projects fail to meet the expectations. As customers are trying to cut costs, price increases are perceived as very negative, especially if the justification is perceived as inadequate. Conflicts improve the relationships if handled well, but some cases in the studied relationships have escalated to unnecessarily big issues, and could have been handled better by taking actions sooner.

Over time of the studied relationships, the customers have widened their strategic focus from dredging to also other marine. This has resulted in the companies acquiring more installations with more products and solutions from the case company. The customers expect the case company to offer comprehensive throughout the different product lines with sometimes the expectation of the difference between old and new installations. Some customers have also changed their approach to purchasing for example services and spare parts to a more centralized approach to avoid difficulties related to using too many suppliers. Generally customers tend to give more attention and expect more from the case company when dealing with newer installations. New vessels are more productive and receive more attention from the customer management. Also the customers have changed their way of working related to communication towards the case company. Controlled communication reduces miscommunication that originates from too many contact points, but centralized communication may reduce the information getting through to more people within the customers organizations.

Shifting market situations was recognized as a major factor affecting customer expectations in the dredging industry. It needs to be noted that the market situation was bad while writing this thesis and this may over emphasize the effect. Still, during bad market situations the customers are more focused on reducing costs, as when the market is booming the customers put more value on quickly fixing problems and ensuring uninterrupted operations. Especially environmental regulations have tightened on the marine industry as a whole during the past decades, and they will continue tightening still. However regulatory issues are known before hand and both the suppliers and the customers have time to react. Tightening regulations however may open the market to competitors as new technologies have to be introduced. As the interviewed dredger companies are large, and they have grown by acquisitions, they have vessels powered by equipment from the competitors of the case company as well. Therefore the customers know the market very well and are able to use it as an advantage when choosing the supplier.

Despite the vast interest understanding customer value has gained among the scholars during the past decades, reasons resulting in change have received less attention. Researching the reasons for changes is difficult, as a study conducted in a single point of time affects the reliability and longitudinal studies require long term commitment from both the researchers and the participants. This research with a focus on the dredging industry contributes to this gap because not only the customer relationships, but also the installation lifecycles are long. This adds complexity to the relationships as changes within the suppliers, the customers and also the business environment have varying effects to the required, expected and perceived level of service, while previous studies mostly consider the changes in the context of new product releases. Previous studies also have focused on the changes on a general level, while here the real life context is strongly present in the form of cases and examples.

6.2 Managerial implications

This section aims to give suggestions and ideas for the case company on how to further develop the customer value creation within the dredging industry, and how to further improve the customer relationships based on the analysed data. Material gathered for this thesis gives insight to managers frequently dealing with the dredging customers on what the customers see as valuable and where they see room for improvement. By addressing the issues hindering value creation, mutual benefits for both the customers and the case company can be achieved in for example improved operational reliability, quicker time for solution, better planning of maintenance activities and improved relationships. This thesis was done with the focus on dredging industry, but the results could help other highly demanding marine segments as well. Many of the suggestions here are not quickly achievable, and some of the issues would require further research for finding a solution.

Firstly, a significant portion of the issues brought up by both the case company and the customers were related to either inadequate communication or missing required information, whether the problem was in for example maintenance planning or execution, or finding a solution for occurred problem. Communication issues exist not only between the supplier and the customers, but also internally within all the companies. Good efforts have already been made to improve things, as for example introducing the team model for customer relationship management and the technical meetings, which both received good feedback from all the interviewees. However it seems that still too often it is difficult to get the right people to discuss early enough on projects. Internally within the organizations technical and commercial people should share more information, and a more systematic approach would help and avoid double work in the future. Developing such systematic tool would be a project on its own. Also project further improving project documentation and project follow up procedures would help to avoid making the same mistakes again.

Secondly, fixing the currently existing information flow bias would be beneficial for the relationships. Currently the bad news and failures are overemphasized in the communication. This does not mean covering up mistakes, as it is very important for the relationship that both parties are open especially in the case of problem and in finding the solution. This increases trust between the companies. Instead the achieved benefits should be better demonstrated and measured. Instead of the “no news is good news” mentality currently in place, it would be beneficial to make good news also good news. Introducing for example success / failure ratio measurements in service performance would emphasize that mostly things are going according to the plan. The ratio measurement would also make it easier to see if there are problems in some process, and to make corrections accordingly. Such measurements would be a collaborative effort between the customers as the case company, as different parties may have different views on how successful a project actually was.

Thirdly, especially the customer emphasized how important quality in both services and the products is, if the price is not considered excessive. Perceived quality has long lasting consequences for the business relationships as it affects the customers’ decision making when choosing the suppliers for the new build projects, which in turn secures business for long period of time for the chosen company. Improving product quality also requires collaborative effort with the customers, like does improving service quality. Customers sharing data on possible failures, like for example components breaking before their scheduled lifetime, makes detecting flaws possible and can speed up the solution development process. Another option to customers sharing data could be real time monitoring solutions, which however are still in the development phase. A systematic follow up procedure could also be implemented to for example service products intended for enhancing product performance. All the improvements proposed here require good customer relationships and trust between the companies which need to be improved.

6.3 Limitations and further research

In this section the limitations of the present master's thesis are discussed and directions to further research are suggested. Limitations of this study are related to time and resource constraints, fairly low number of customer interviews, differences in the interviewed customers and possible bias in the interviews as the author was employed by the case company while conducting the study. Further research suggested from academic and the case company point of view.

Major limitation in conducting this study was time and resource constraint. Gathering the primary data for this study through interviews happened during July, and therefore for example summer vacations were limiting the availability of the interviewees. It was also difficult in some occasions to find a suitable schedule for the interviews, as the author spent a limited two week period abroad conducting the interviews. For the results to be more accurate, more interviewees from the participating customer organizations would have been preferable. Another time constraint considers the fact that longitudinal study would require a follow up study after a period of time which is not possible under the time limit of master's thesis.

Even though all three participating customers were mainly operating on dredging industry, were of similar size and from same geographical area, there are still differences in the customers that need to be taken into account when drawing conclusions from the results of this study. Customers have different organizations and different ownership bases which affect how the customers deal and keep contact with their suppliers. Customers also have different products from the case company, which may affect the customers' perceptions. Therefore the overall holistic perspective may not from every aspect work for every individual customer. Also dredging is a very specific market segment and therefore the results here may not be fully applicable to other marine segments.

All the customer interviewees had long histories dealing with dredgers and also with the case company. Long history and experience is knowledge wise good but it may also result in biased opinion in the answers. The interviewees also had different roles in their organizations as some were more commercial, or purchase oriented, and others more technical. This may result in different points of view during the interviews that need to be taken into account. The author was employed by the case company while conducting this study. Regardless of the confidentiality statement, this may affect the answers by the customer interviewees. However, during the interviews the customers were quite open and happy to participate in the study.

From the case company point of view this study serves as an insight into value creation within dredgers aftersales service markets. However the picture created is quite holistic and identifies areas possible improvements. Actually finding solutions for issues like how to better arrange communication with the customers to avoid miscommunication and information loss on the process, or how service performance measurements should be arranged, further research or development projects are needed.

Customer value has received a lot of research in the academic literature in the past decades. However there is a gap in literature regarding products or solutions with very long lifecycles. Further research could continue from the basis of this one to conduct a longitudinal study better understand the changes that actually happen within a long business relationship. Customer value creation research is also quite scarce in the field of marine power generation, probably due to a fairly low number of major companies. This could also be the topic of further research.

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APPENDICES

APPENDIX 1

Questions for the customers

1. Background information
    a. Name, personal background
    b. Job description / role in the firm and experience in current or equivalent position
    c. Could you briefly describe your firms business, offerings and customer segments?
    d. Could you describe what makes your firm different from other dredging companies?
2. Value Creation
    a. What are the most important factors where the case company is creating value for your business? (engine and other services, complete solutions, knowledge transfer, co-operation, development, remote monitoring, fast response, cost reduction, etc.) (Name 3)
    b. How important to your business you perceive: fast problem solving, low cost, process improvements, avoiding down time, reducing risk, avoiding dependence, uncertainty reduction?
    c. What criteria do you look for and evaluate when choosing an (engine) service provider? Are some more important than others? (Name 3)
    d. How do service and engine providers identify your needs (business or product)?
    e. Is the case company able to match your expectations and needs (examples, good and bad)? (fast problem solving, preventing the unexpected, cost/quality ratio, process improvement, delivery times, avoiding down time, reducing risks, uncertainty reduction)
    f. What could the case company / other providers do better?
    g. How the case company and the other providers take into account the specific needs of the dredging industry?
    h. Do/have you participated in product development with the case company?
3. Value proposition
    a. How do engine manufacturers and service providers communicate possible benefits? (Technical benefits, reliability, cost savings, risk reduction, environmental improvements, other?)
    b. Do you feel that the service providers are honest with their propositions?
    c. How do you measure the achieved benefits?
    d. Are the communicated benefits accurate? (Case examples)
4. Value Expectations

    a. What do you expect from an engine manufacturer and service provider?
        i. Product offering
        ii. Service offering
        iii. Relationship (individual vs. organizational level)
    b. Have your expectations changed over time? (What expected from a product, service or a relationship?
    c. What has affected the change (changes in internal way of working, provider way of working, external factors?)
    d. Do you expect the same performance from the (engine) service provider with new and older installations? (Different life-cycle phases; commissioning training, warranty, service period, unexpected, upgrades)
        i. Examples of both
        ii. Do you get the attention you want in all lifecycle stages?
5. Value Judgements
    a. Do you recall some cases that went better than your expectations?
        i. Why?
        ii. Examples
    b. How about cases that went worse than expected?
        i. Why?
        ii. Examples
6. Changes in the relationship
    a. Could you describe your (firms) relationship with the case company?
        i. What products do you deal with (engines or others as well?)
    b. Could you describe your individual relationship with the case company?
    c. How do you keep contact with engine service providers? (single contact vs. many?)
    d. Is the organizational relationship with the case company the same as your individual?
    e. Have there been any changes in the relationship? What has affected the changes? (Technology, competition, conflicts, personnel etc.)
7. Case company and competition
    a. Are there any major differences between different service providers?
    b. What does the case company do better than other manufacturers and providers? What does case company do worse?

APPENDIX 2

Questions for internal personnel

1. Background information
    a. Name, background.
    b. Job description, experience in current position or equivalent position
2. History with the customer
    a. Which customer / customers do you regularly deal with?
    b. Do you deal with customers other than dredgers? How do dredgers as a industry differ from other segments?
    c. How long have you dealt with the specific customer?
    d. Which products do you deal with? (engines, propulsion, services, other ?)
    e. Roughly how much is the annual sales volume with the customer?
    f. How long is the customer product life cycle? Do they require the same support throughout the lifecycle?
3. Customer value generation (products, services and solutions)
    a. Could you define value for the customer (or customer value creation) in your own words
    b. What kind of value do the case company offerings provide (service products and service) for the specific customer? (case examples, good and bad ones) (name 3)
    c. How important for the customer is: fast problem solving, low cost, process improvements, avoiding down time, reducing risk, avoiding dependence, uncertainty reduction?
    d. What are the key criteria the customer focuses on when choosing an engine or service provider?
    e. Is the case company able to match the customers' value expectations?
        i. Is there something you can't match and why?
    f. How do you identify the customers' needs? Is the customer able to clearly define what they want?(examples)
    g. How is the follow up of sales/projects done? (examples)
4. Value of the relationship
    a. How would you describe the relationship with the specific customer? (merely products / service also / product development)
    b. How does the relationship create value for the customer (the factors customer values about the relationship)
    c. How has the relationship evolved over time? (more/less interaction, satisfaction, personnel etc.)
    d. Could you describe the relationship with the customer on individual level?
    e. How does the customer perceive the case company on organizational level?

    f. Are there any factors negatively affecting the relationship with the customer?
5. Communicating customer value (value proposition)
    a. Could you describe the case company services value proposition for the specific customer? (Is the value proposition individually tuned for the customer?)
    b. How do you communicate the value proposition and potential value to the customer? (Technical benefits, reliability, cost savings, risk reduction, environmental improvements, other?)
    c. Are value based methods used?
    d. New builds: How is the lifecycle cost taken into account in value communication?
    e. How are the delivered customer benefits documented? Are the benefits used as references?
    f. Do you take competition into account when communicating value for the customers?
6. Changes in customers perceived value
    a. Have you noticed changes in customer desired value over the course of the business relationship?
    b. Do customer value perceptions differ in different phases of product lifecycle (new installation vs. older installation)? If so, how?
    c. Has competition affected the way customer expects perceives value from us?
    d. Do you recall some singular events affecting the way customer perceives us? (Conflicts, emergency's etc.)(case examples)
    e. Have developments in technology affected customer expectations or perceptions?
    f. Other factors resulting in change? (way of working with the case company, internal way of working, external factors?)