

Future Sources of Competitive Advantage in the German Self-Propelled Construction Equipment Industry

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A thesis submitted to
The University of Gloucestershire
in accordance with the requirements of the degree of
DOCTOR OF BUSINESS ADMINISTRATION (DBA)
in the Faculty of Business and Technology

February 2021



Word Count: 65,932

Abstract

The purpose of this thesis is to explore sources of future competitive advantage for self-propelled construction equipment (SPCE) dealers in Germany, who are challenged by significant change driven mainly by intensifying competition. This forces them to redefine their future market positioning. For that they need to learn about future customer value preferences to adjust organisations and business models accordingly. As research has not yet provided deep enough insight on customer value anticipation in the German SPCE industry, this thesis examines anticipation approaches and applies lead customer analysis to a dealer case.

For that, an exploratory, inductive cases study research strategy is applied that takes a constructivist perspective on reality.

For the case under study it was found that: (1) Competitive advantage develops from superior customer value. (2) Customer trust is a key aspect in superior customer value generation and results from trustworthiness. (3) Continuous customer value anticipation is essential to competitive advantage sustainability. (4) Lead customer analysis is apt for customer value anticipation. (5) Trust and digitalisation are promising future competitive advantage sources.

The study's knowledge contribution lies in the scientific mapping of the interaction of the elements leading from customer value to loyalty and trust in the German SPCE sector, supporting the generation of competitive advantage and business profitability. Furthermore, the study creates a deeper understanding on how customer value anticipation is linked into that process, how it can practically be applied and how it contributes to business profitability, hence closing a conceptual knowledge gap. Finally, through identifying trust and digitalisation as promising sources for future competitive advantage generation, the study informs dealers on the definition of their future market positioning and on the generation of impactful competitive advantage positions.

Keywords: Competitive advantage, customer value, customer value anticipation, lead customers, self-propelled construction equipment, dealer, trust, digitalisation

Author's Declaration

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original, except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas. Any views expressed in the thesis are those of the author and in no way represent those of the University.

20th February 2021

doi:10.46289/MB63UW69

Acknowledgment

WHAT A PAIN –

WHAT A GAIN

To my Family!

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Glossary

AIDA	Attention – Interest – Desire – Action
BIM	Building information modelling
B2B	Business-to-business
B2C	Business-to-customer
DNA	Deoxyribonucleic acid
e.g.	Exempli gratia
GPS	Global positioning system
i.e.	Id est
IT	Information technology
KB	Kraemer Baumaschinen
LC	Lead customer
n.a.	Not available
No.	Number
OEM	Original equipment manufacturers
QDAS	Qualitative data analysis software
RQ	Research question
SPCE	Self-propelled construction equipment
TCO	Total cost of ownership
U.S.	United States

1 Introduction

This chapter provides an overview of the research project. The current profile of the German self-propelled construction equipment (SPCE) industry as well as expected industry developments and challenges are outlined. The motivation to analyse future sources of competitive advantage in the German SPCE industry is detailed. Potential strategies to face the changes and challenges confronting SPCE dealers are suggested. The objectives, key elements and contribution of this study are described. The chapter concludes with an overview of the structure of this thesis.

1.1 The Profile of the German SPCE Industry

The German SPCE market splits into the product categories illustrated in Figure 1.
























Heavy earthmoving equipment		Dump truck and scraper	Articulated dump truck, rigid dump truck, motor scraper	Lifting equipment		Crane	Tower crane, mobile crane
		Dozer and grader	Crawler dozer, wheeled dozer, motor grader			Hoist	Rope hoist, material hoist, personnel and material hoist, transport and work platform
		Loader	Crawler loader, wheeled loader, backhoe loader			RTLTL	Masted, telescopic RTLTL
		Excavator	Crawler excavator, wheeled excavator			Aerial work platform	Scissor lift, cherry picker/boom lift
Compact earthmoving equipment		Excavator	Compact excavator	Road construction and compaction equipment		Asphalt construction	Road paver, material feeder, screed, roller, slipform paver
		Dumper	Wheel dumper, track dumper			Asphalt mixing plant	Batch plant, continuous plant, cold mix plant
		Loader	Wheeled loader, skid-steer loader			Light compaction	Rammer, vibratory plate, roller
Concrete equipment		Concrete pump	Truck-mounted, stationary, truck-mixer concrete pump combination			Cold milling, stabilizing, recycling	Cold milling machine, cold recycler and soil stabilizer, binding agent spreader, hot recycler
		Truck mixer	Standard truck mixer, semi-trailer mixer	Civil engineering equipment		Tunneling	Tunnel boring machine, partial-face excavation, auger boring, etc.
Crushing and screening equipment		Crushing	Stationary crusher (jaw, cone, gyratory, HS, VS impactor), mobile crusher, aggregate plant			Pipe and cable laying	Pipe layer, trencher
		Screening	Stationary screen (stratification, free-fall, roller), mobile screens, aggregate plant			Piling	Piling rig (vibrohammer, impact driving system, soil mixing system, etc.)
						Surface drilling	Rotary drill rig, surface top hammer, etc.

Figure 1: Main Product Categories of the German SPCE Market adopted from Sjödin, Granskog, and Guttman (2016)

In 2019 the German SPCE retail and rental business generated a turnover of EUR 10 billion (BBI, 2020). In July 2020 the German Association of Construction and

Agricultural Equipment Dealers reported 5,691 active dealerships and serviceshops in Germany, representing a growth of 174 since 2007 (refer to Figure 2) of which 38 % were construction equipment dealers (Landmaschinenverband, 2020).

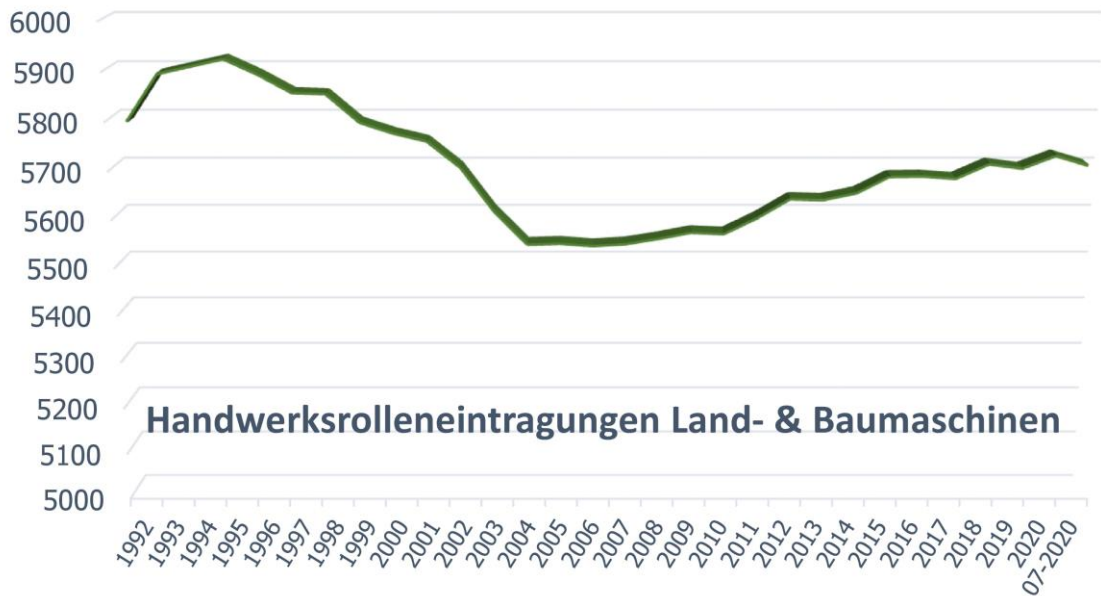


Figure 2: Registered Construction & Agricultural Equipment Dealers in Germany (Landmaschinenverband, 2020)

The SPCE business comprises local, privately owned dealerships and nationwide multi-store distributors. Private businesses account for 97 % of the dealerships, but only 45 % of the turnover. Dealers compete in new and used machinery, spare parts, rental services and service/repair works (BBI, 2019).

Figure 3 details the SPCE industry's value chain. Automotive and specialised suppliers produce and deliver prefabricated parts to original equipment manufacturers (OEM) who engineer and assemble SPCE. OEMs sell their final products to dealers or OEM owned distribution organisations, that take care of end customer distribution and service. That makes dealers the link between OEMs and end-users (the focus of this study lies on this part of the value chain – see yellow framed area of Figure 3). Few key account customers are handled directly by the OEM bypassing the dealers. Machines can be rented from independent, or OEM owned dealers or independent rental companies, which again buy their equipment from dealers. The end users that buy and

utilise SPCE are for instance construction companies, quarries, and recycling businesses (Sjödin, Granskog, & Guttman, 2016).

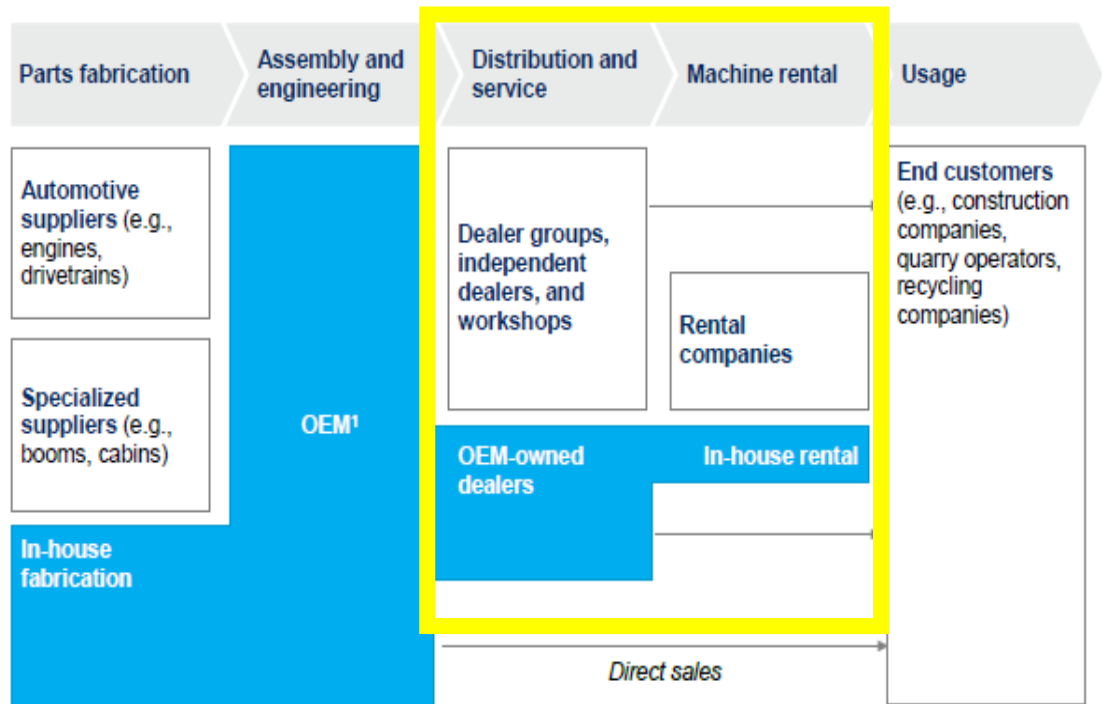


Figure 3: SPCE Value Chain (Sjödin et al., 2016)

1.2 Accelerating Change in the SPCE Industry

Sjödin et al. (2016, p. 6) describe the accelerated change in the SPCE industry as follows: “The fact of change is not new in construction equipment. What is unique about this particular moment in the industry’s development is that many of these changes are converging and collectively hitting the industry at once. One by one, these trends could make significant dents in the industry (...). Together they may change the heart of the industry’s structure and dynamics – transforming the product offered (...) and the competitive landscape.”

Whilst the number of dealers is growing (refer to Figure 2), a decline in the number of customers as a result of a consolidation trend with the effect that fewer but larger customers have to be served becomes visible (Fleischmann, 2015; Schober & Büchele,

2020). With growing organisational structures, customers manage their procurement processes more professionally i.e., they improve the accuracy of equipment demand-analysis and implement improved buying processes, plan them more strategically and implement them more thoroughly (Capgemini, 2009). Grevet and Steffen (2016, p. 2) describe this effect as follows: “And B2B sales departments have long been rising to the challenges of their customers’ increasingly professional procurement departments.” Budget control is tightened and cost control becomes a central business strategy in customer organisations (Capgemini, 2009; Schober & Büchele, 2020) (refer to 4.4.1). In addition, larger customers target higher equipment utilisation rates to benefit from scale advantages (Andersen & Husfeldt, 2013; Fan & Fan, 2015; Stauss, Löfberg, Witell, & Gustafsson, 2010). The procurement and management behaviours of larger customers are expected to decrease future SPCE demand (Andersen & Husfeldt, 2013; Fan & Fan, 2015; Stauss et al., 2010). Also, the improving efficiency of modern SPCE negatively impacts sales volumes (Ribeirinho et al., 2020). The current Covid-19 pandemic crisis adds further uncertainty for the construction sector. Private investors could put construction projects on hold and public project are at risk being delayed due to shortages in the bureaucratic processes caused by lock-downs (Schmid, 2021). Schober and Büchele (2020, p. 2) see the risk of a substantial drop: “In Germany, construction industry could face a decline in real revenue of up to 8 % and in margin of up to 45 %.”

Due to the growing number of dealers and the simultaneous expected declining demand, competition is expected to intensify on the German SPCE market. Margins would consequently decline, as more dealers would compete for fewer, more professionally managed customers.

The competitive situation is further fuelled by the societal trends of digitalisation and subsequent globalisation. Market entry barriers, such as geography and language melt, and the way for new market entrants is freed (Sjödin et al., 2016). Table 1 illustrates the impressive rise of four SPCE brands into the top ten of the worldwide SPCE makers by machinery sales revenue between 2009 and 2019, representing a significant global shift in the industry.

Brand Name/ Origin	Position 2009	Position 2020	Ranks Gained
John Deere (U.S.)	10	6	3
XCMG (China)	17	3	14
Sany (China)	20	4	16
Zoomlion (China)	22	5	17

Table 1: The Rise of New SPCE Market Entrants Between 2009 and 2019 (International_Construction, 2009, 2020)

Next to emerging brands, also new players on the dealer-level with new strategies undermine the previously acknowledged distribution model. They excel by putting more emphasis on new technologies, digital product support, equipment sales strategies, technical equipment documentation than established dealers (Andersen & Husfeldt, 2013; Kutschenreither, 2015; Roe, Batte, & Diekmann, 2014). For example, online sales platforms for SPCE make pricing transparent and comparable for customers and put dealer pricing under pressure. Geographical boundaries that helped to maintain established dealers' position in their home market, no longer protect them from aggressive competition. Furthermore, there is a shift of OEM organisations into upstream and downstream levels in the value chain. Some manufacturers, especially newcomers that struggle to install adequate independent dealers, install their own SPCE distribution organisations to get a direct link to the end customer, bypassing the privately owned dealers. The Chinese SPCE manufacturer Sany Group – one of the fast growing SPCE manufacturers from Table 1– for example announced its first own SPCE rental outlet opening in Germany (Allen, 2020; Piel, 2020), thereby entering a business segment that was so far almost exclusively covered through either professional rental companies or SPCE dealers.

These market dynamics put the historic SPCE distribution business model under pressure. The messages of Figure 4 and Figure 5, both extracts from presentations held at conferences of the German Association of SPCE dealers (BBI), validate the described market dynamics. Figure 4, shown at the “Strategy Day: Professional Sales Management” conference, illustrates the growing shares of construction equipment

OEM direct sales and digital platforms on the total sales volume, decreasing the share of established, local dealer businesses in return. Critical factors to that are sales and cost related but predominantly address data management and digital competencies (system integration, digital competency, IT-competency, data competency).

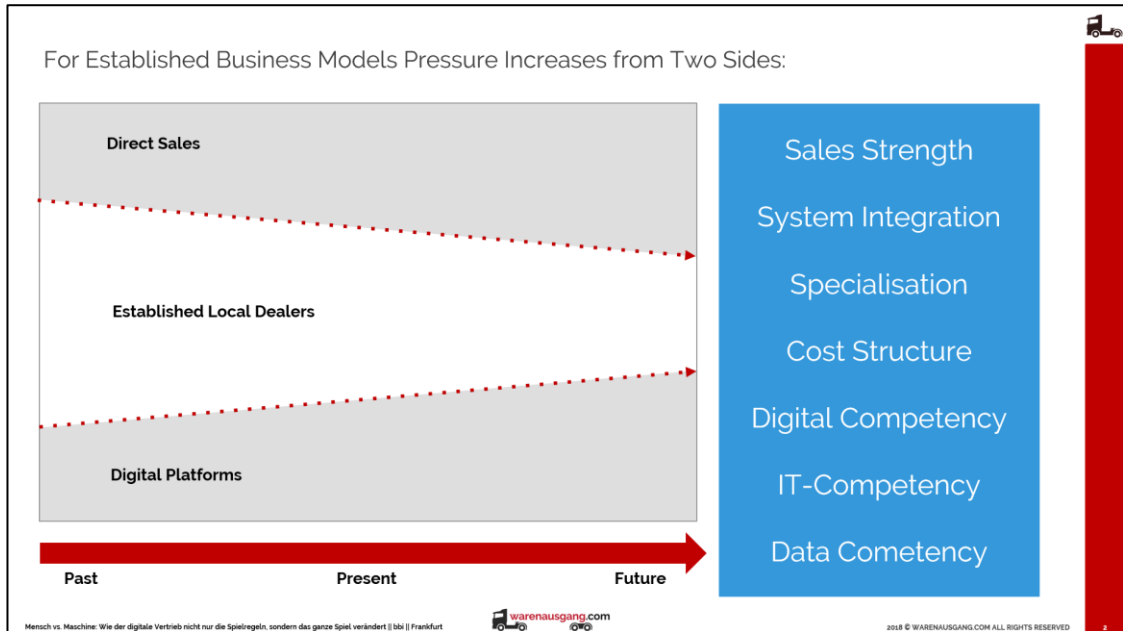


Figure 4: Established Business Model under Pressure, adopted from Paul (2018)

Figure 5, shown at the conference titled “Designing a successful future – The digital transformation of business models in SPCE distribution and rental”, illustrates the challenges that actual developments have on the formerly established SPCE distribution value chain. The shift of players into up- and downstream levels of the value chain and the pressure from new market entrants.

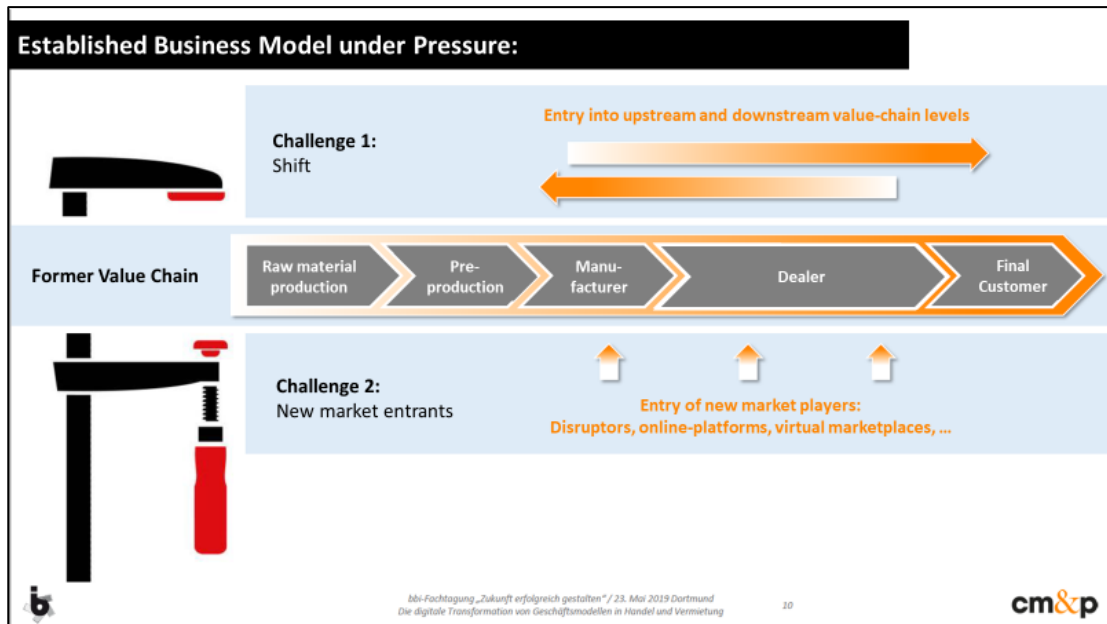


Figure 5: Established Business Model Under Pressure II adopted from Cramer (2019)

Established dealers are challenged to counteract by rethinking their current market positioning and defining their desired future ones, considering the described market dynamics. In essence, they need to understand from which sources their future competitiveness could develop and design and implement respective strategies. This topic is addressed in the following section.

1.3 Strategies to Address the Change

Probably the most important strategic source to generate competitiveness from is the creation of outstanding customer value (Barney, 1991; Porter, 1985; Yonggui, Hing Po, Renyong, & Yongheng, 2004). Grevet and Steffen (2016, p. 4) state that maximising customer value is one of the major emerging B2B sales perspectives and postulate to “Optimize customer value by ignoring all product, service, and company boundaries.”

According to Sjödin et al. (2016, p. 10) this seems also true for the SPCE industry: “Looking forward, (SPCE) OEMs point to a drastic shift in their priorities. The most important criteria for success in the future are perceived to be developing a deep understanding of how customers create value.” This quote refers to a survey amongst

executives of European SPCE OEMs on the top five success factors “today” and “tomorrow” of financially strong players in the SPCE industry. At the 2016 conference titled “Industry in Transformation – Drivers of Success”, held by the Committee for European Construction Equipment, the results of the survey of Sjödin et al. (2016) were presented (Figure 6). The factor “Deep understanding of customers’ business and how they create value” scores fifth most important “today” and most important “tomorrow”. This indicates that customer value is expected to significantly gain in relevance as a success factor in the SPCE industry, becoming the most influential one in future. Although the perspective of this survey is European SPCE OEMs, and thus several production orientated factors are included which are not relevant for German SPCE dealers, the rise of the customer value aspect is of explicit relevance since it is a sales-orientated aspect and in the SPCE industry sales is predominantly channelled through dealers.

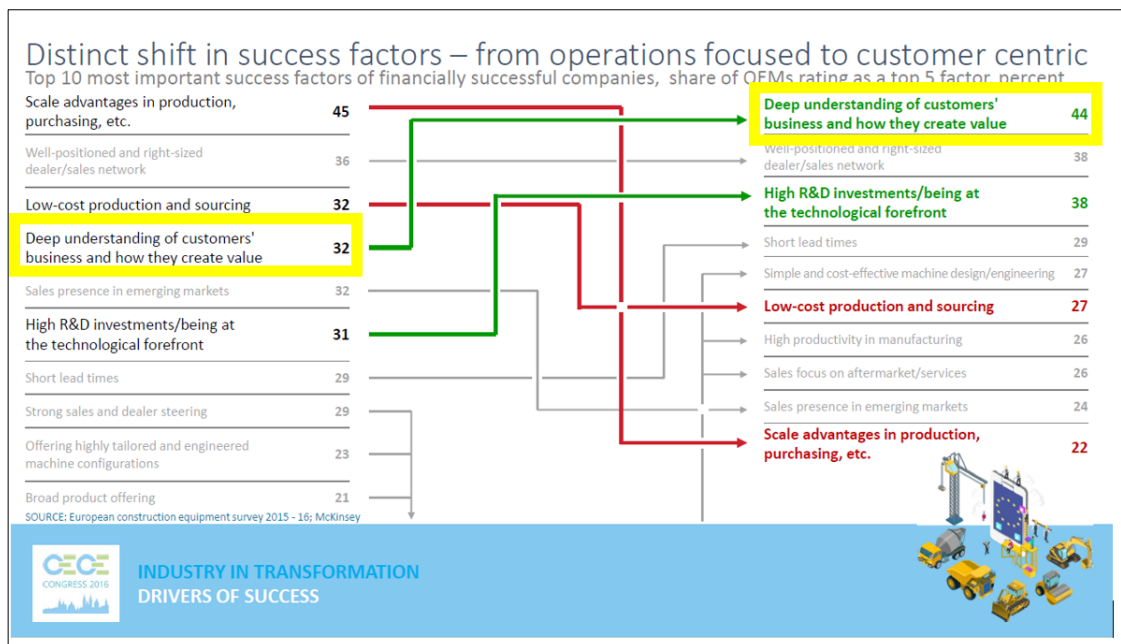


Figure 6: Success Factors of Financially Successful SPCE OEMs Today and Tomorrow (Sjödin, 2016)

This insight entails that SPCE dealers need to understand what customers value, but more importantly, what they might value in future and should develop the respective products, skills and business strategies in response, better and faster than competition. According to Beheregarai-Finger, Flynn, and Laureanos-Paiva (2014),

dealers gain competitive advantage by reducing business uncertainty, respectively improve the accuracy of their predictions and Grevet and Steffen (2016) see the ability to anticipate and adapt to future customer needs on the rise in B2B sales.

In summary, German SPCE dealers are under pressure to reorganise their strategic orientation and business models in order to strengthen their position in the face of shrinking market volumes, competition through new market entrants and the consequences of digitalisation. They need to understand what could be sources of competitiveness in the future. The enhancement of customer orientation and the understanding of future customer value drivers seem to be promising approaches in that respect.

The presented change in the SPCE industry in Germany and the strategies to address the change are worth academic attention. They affect almost every dealer in the sizeable market of EUR 10 billion In 2019 (BBI, 2020). To date there is some focus on this issue in trade press, but no academic research has been undertaken to analyse it scientifically and to present practical advice derived from sound research. Overall, the important question how to generate future competitive advantage for SPCE dealers in Germany remains unanswered. This justifies the research undertaken in this study, which is domiciled in the B2B sector, since it is the relationship between dealer businesses and customer businesses that is analysed.

1.4 Research Aim, Overview and Questions

The aim of this study is the analysis of future sources of competitive advantage in the German SPCE industry in order to support dealers with the adjustment of their businesses to emerging market trends and customer demands.

This study intends to support German SPCE dealers with the definition of their future competitive market positioning. It is domiciled in the strategic marketing domain and

seeks to understand how competitive advantage might be generated in future. Approaches to anticipate future customer value preferences of SPCE customers in the German market are explored. The review particularly assesses the impact of customer value anticipation.

The study develops its methodological framework based on established marketing models, in particular the customer value definition of Woodruff (1997), the customer value classification of Smith and Colgate (2007) and the Disconfirmation Model of Parasuraman, Zeithaml, and Berry (1988) are referred to, to derive a set of four mandatory capabilities of customer value anticipation and a propositional cause-and-effect chain.

The study posits that a unique strategy of customer value creation is fundamental for understanding how customer value leads to competitive advantage and can potentially be used to anticipate what customers might value in future. The anticipation of future customer requirements (in the following customer value anticipation) is an organisation's ability to foresee what defined customer segments will value in their relationship with the supplier in future (Flint, Blocker, & Boutin Jr, 2011). Based on that knowledge, SPCE dealers are prepared to successfully develop adequate products¹, concepts and organisational structures, that result in future value propositions that match with the future value expectations of their customers.

To date, there is only limited research on customer value anticipation techniques and practical advice is vague. SPCE businesses lack guidance concerning the practical implementation of customer value anticipation strategies (Andadari, Priyanto, & Haryanto, 2016; Flint et al., 2011; Ho, Hsieh, & Yu, 2014).

The empirical analysis in the German SPCE industry explores how the anticipation of customer value creation generates competitive advantage. For this exploration, four part research questions are posed and analysed in the form of an interview-based case

¹ In this thesis the word "products" represents tangible products (machines, parts) and intangible products (maintenance and repair works).

study with SPCE lead customers. The research questions differentiate the study aim of analysing how competitive advantage is realised in the SPCE industry. The answers to the part questions contribute to the answer to the main research question.

Referring to a customer-oriented marketing perspective, the study argues that competitive advantage means the creation of outstanding customer value. Customers perceiving that their requirements are met best, are more likely to buy from the dealer, are more satisfied with purchase and service, and tend to end up remaining more loyal to their provider. In order to maintain this loyalty cycle, dealers should anticipate in which directions customer requirements and expectations develop and accordingly adjust their business model upfront. This understanding results in the main research question (RQ) of this study:

How far can the anticipation of customer value support SPCE dealers in Germany to discover future sources of value creation and competitive advantage?

The part research questions take up this course of reflection and structure the study correspondingly. The study starts from an analysis of factors that create value from a customer perspective in the SPCE sector, with RQ1:

Which aspects of customer value creation are relevant to customers in the SPCE business?

The study then analyses the process of how customer value perception develops in the process of customer dealer interaction, applying RQ2:

How far does customers' value perception lead to customer satisfaction, trust and loyalty in the SPCE business?

In a third step of argumentation, the study explains in what way the value conception, customers perceive, creates value for the provider (SPCE dealer), and formulates a third RQ to this end:

How far do customer trust and loyalty create competitive advantage and business value/profitability in the SPCE business?

Understanding that the process of value creation is mutual i.e., is initiated by the provider's value proposition and answered by the customer, who with its purchase action and loyalty returns value to the dealer, the study examines how SPCE dealers can maintain this process by applying RQ4:

Which factors will contribute to customer value creation in the SPCE business in future?

1.5 Thesis Structure

The remaining part of the thesis is structured as follows:

Chapter 2 reviews literature on competitive advantage (section 2.1), customer value (section 2.2) and the process leading from customer value creation to competitive advantage (section 2.3). It shows that customer value anticipation is a suitable strategy to explore future sources of competitive advantage in the German SPCE industry (section 2.4).

Chapter 3 develops the empirical research approach based on a constructivist research paradigm (section 3.1). The research strategy of case study analysis is based on this understanding (section 3.2). Methods of sampling (section 3.3), data collection (section 3.4) and data analysis (section 3.5) are explained and defended.

Chapter 4 evaluates the results of the case study. Section 4.1 evaluates the importance of the fields of customer value creation to lead customers in the SCPE sector. Section

4.2 assesses how value creation leads to customer satisfaction, trust and loyalty. Section 4.3 analyses how competitive advantage according to the experience of the interview partners and secondary sources is generated from customer loyalty and trust. Section 4.4 explores future developments in the construction industry based on the interviews and triangulation with secondary sources.

Chapter 5 answers the research questions and discusses and interprets the results based on the study's conceptual framework and existing literature.

Chapter 6 classifies the empirical results in academic research and derives suggestions for business practice. The study methodology and results are reflected critically. Limitations and further research requirements are discussed.

2 Literature Review: From Customer Value to Competitive Advantage

Chapter 2 reviews existing relevant literature and develops the main categories relevant for the empirical analysis, in accordance with the initially formulated study aim: The analysis of future sources of competitive advantage in the German SPCE industry in order to support dealers with the adjustment of their businesses to emerging market trends and customer demands.

This aim implies that in accordance with research question 1 (RQ1) the concepts of competitive advantage and customer value need to be concretised based on previous literature. These concepts are clarified in section 2.1 and 2.2.

In correspondence with RQ2 and RQ3, the process of customer value creation needs to be examined. This aspect is implemented in section 2.3.

In connection with RQ4, in which the process of how customer value perception can be maintained and even strengthened for the future in the face of a dynamic market environment, section 2.4 introduces to the concept of customer value anticipation and explains its function.

Chapter 2 thus reviews previous literature on competitive advantage and customer value creation. Strategies to anticipate customer value are examined. The literature review results in the identification of a knowledge gap. A conceptual framework mapping the relevant concepts and their interrelations is presented. Research questions for further empirical analysis are formulated on that basis.

2.1 Competitive Advantage – Towards Conceptual Clarity

This section introduces the concept of competitive advantage and strategies to gain and maintain a superior market position.

2.1.1 The Term Competitive Advantage

The concept of competitive advantage is an issue of strategic marketing and refers to how companies outperform competition (Mintzberg, 1990). Competitive advantage is in the focus of strategic planning. It determines how businesses attract customers and generate profit. According to Porter, “competitive advantage grows fundamentally out of value a firm is able to create for its buyers that exceeds the firm’s cost of creating it” (Porter, 1985, p. 3). For Porter (1980), there are two different strategies creating competitive advantage.

- Businesses may aspire towards cost leadership and target offering customers a maximum financial benefit.
- Businesses may equally differentiate by unique products, which enable them to answer to customer needs exclusively and contribute to customer appreciation.

(Both directions can be applied in a wide or narrow market focus)

Porter’s concept underlies the assumption that resources which are critical to competitive advantage like human resources are equally shared amongst industry players and highly mobile i.e., they are usually available to implement a certain strategy. Barney (1991), however, argues that critical resources are not homogenously shared and not perfectly mobile but inimitable, non-substitutable and rare. Such resources can be a source of sustainable competitive uniqueness, promote competitive advantage and represent market entry barriers for outsiders (Barney, 1991, 1995) (refer to Figure 7).

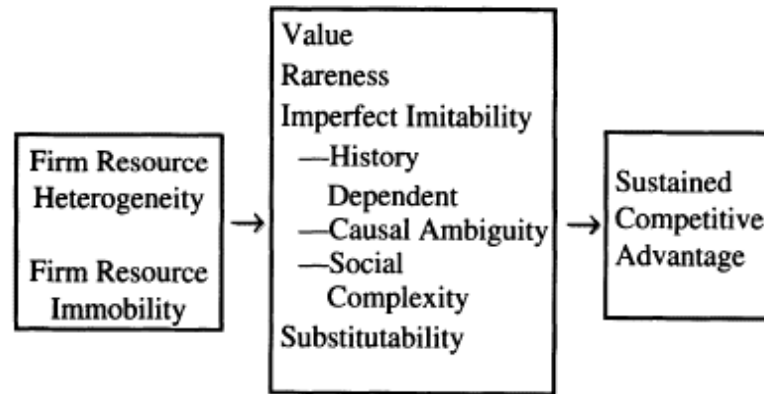


Figure 7: The Relationship Between Resource Heterogeneity and Immobility, Value, Rareness, Imperfect Imitability, and Substitutability, and Sustained Competitive Advantage (Barney, 1991)

Based on these assumptions, Barney (1991, p. 102) explains, “a firm is said to have a sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy.”

The static competitive advantage conceptualisations of both, Porter (1980) and Barney (1991) are challenged in an environment defined by digitalisation, rapid technological evolution, globalisation and a resulting dramatic increase in competition (McGrath & Gourlay, 2013). Under these conditions, static concepts of competitive advantage seem less valid (Day & Moorman, 2010). Firms rather are challenged to develop a quick, decisive opportunity capturing behaviour and search for new competitive positions continuously. Following Beheregarai-Finger et al. (2014) competitive advantage today results from the competency to systematically make more accurate predictions about the future than competitors. Future customer requirements are ideally anticipated and prepared before their emergence. According to Slater, Mohr, and Sengupta (2010) customer requirement anticipation and related innovation allows harvesting superior profits. Innovations, however, are under continuous threat of imitation, which brings innovator profits back to average levels. The reinvestment of earlier innovation-related profits allows the defence of an advantageous position. Under these conditions current competitive advantages should be left behind before

they are exhausted. Competitive advantages have become transient and need to be reinvented continuously (Day & Moorman, 2010; McGrath & Gourlay, 2013).

De Geus (1988, p. 71) stresses the importance of continuous organisational learning for competitive advantage sustainability: "The ability to learn faster than competitors may be the only sustainable competitive advantage". Slater (1997) similarly explains that in hypercompetitive markets, product- and process-based competitive advantages risk quick imitation. Continuous learning about latent customer needs and the transformation of this knowledge into customer value innovation is crucial to sustainable competitive advantage. For Slater (1997) and De Geus (1988), resource-based competitive advantage implies continuous learning by market orientation. Continuous learning is an intangible business resource. As such it is hard to observe, understand and imitate by competitors. Obviously, the speed of customer value generation through innovation determines to what extent an advantageous competitive position can sustainably be maintained. Therefore, sustainability is mainly a matter of adaption speed to changing customer needs (KPMG, 2018).

In sum, the validity of static competitive advantage concepts is questionable in today's fast moving business environment. Rather, continuous anticipation of customer needs and its fast translation into customer value promise the creation of a dynamic competitive advantage. Furthermore, customer value appears to be a prerequisite to competitive advantage.

2.1.2 Contribution of Conceptualisation of Competitive Advantage to Research Aim

Section 2.1.1 has advanced the aim of this study of analysing future sources of competitive advantage in the German SPCE sector by clarifying the concept of competitive advantage. It has been found that competitive advantage can imply cost leadership or/and differentiation from competitors by unique products and service offers (Ravald & Grönroos, 1996) and that the speed of identification and adaption of new competitive advantage positions is key to a business's continuous success (Day &

Moorman, 2010; McGrath & Gourlay, 2013). Both competitive advantage directions and the speed of their implementation create value for buyers and may motivate them to choose the target company instead of competitors.

Conceptual clarity on competitive advantage is preconditional to answering RQ1 to RQ4 of this thesis, examining how competitive advantage can be created and maintained in the process of customer-provider interaction.

Customer value was found to be a prerequisite for competitive advantage and is thus detailed in the following paragraph.

2.2 Customer Value – Definitions and Measures

There are various definitions customer value. These are compared in the following and a preferable definition is selected. Measurement concepts of customer value are discussed.

2.2.1 Customer Value Definition

There is risk of confusion in customer value research. A fundamental reason for that results from perspectivity (Gallarza, Gil-Saura, & Holbrook, 2011). While some authors speak of customer value as the value perception at the level of customers (Flint, Woodruff, & Gardial, 2002; Kumar & Reinartz, 2016; Smith & Colgate, 2007) others speak of customer value as “customer lifetime value”, referring to the usually financial value customers create for the provider (Gallarza et al., 2011). This study understands customer value in the first sense i.e., as value perceived by the customers.

Although a broad variety of customer value definitions is available, there is some consensus on key elements of the concept. To come to a comprehensive and holistic

definition of customer value, the following Table 2 summarises corresponding original perceived customer value definitions. Shared elements are visualised.

V. Zeithaml (1988, p. 14)	Monroe (1990, p. 46)	Butz Jr and Goodstein (1996, p. 63)	Ravald and Grönroos (1996, p. 21)
“Customer value is the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given.”	“Buyer’s perception of value represents a trade-off between the quality or benefits they perceive in the product relative to the sacrifice they perceive by paying the price.”	“By customer value, we mean 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.”	“Perceived Customer Value = Perceived Benefits/Perceived Sacrifices”

Table 2: Customer Value Definition Communalities

The four presented definitions have certain elements in common. Four share the elements of product and perception and three share the aspect of trade-off. This leads to the assumption that:

1. Customer value results from the use of a product.
2. Customer value is related to the perception of customers.
3. There is a trade-off between what customers get and what they must give in return to acquire and use the product generating the perception.

Woodruff (1997, p. 142) suggests an inclusive customer value definition: “A customer’s perceived preference for and evaluation of those product attributes, attribute performance, and consequences arising from use that facilitate (or block) achieving the customer’s goals and purposes in use situations”. This definition goes beyond the classic benefit/sacrifice dominated views of Ravald and Grönroos (1996) and Monroe

(1990), which define perceived customer value simply as a trade-off between perceived benefits and perceived sacrifices. These definitions neglect that customers perceive different values before, during and after using a product i.e., that customer value perception includes pre- and post-use phases (Woodruff, 1997). The definitions of Zeithaml (1988) and Butz Jr and Goodstein (1996) also suffer from this weakness.

In his definition, Woodruff (1997) refers to the different cognitive tasks of preference-generation and evaluation and provides multiple assessment criteria (“attributes, performances, and consequences”) (Smith & Colgate, 2007). Woodruff replaces the ‘benefit-concept’ by ‘desired consequences’ and by ‘fit with a customer’s goals and purposes’ and comes to a more differentiated examination of customer desires and motivations to use the products, which defines customer value assessment. Although Parasuraman (1997) criticises its potential measurement problems and questionable operationalisability, Woodruff’s (1997) customer value concept merges the valid-but-too-narrow definitions of earlier authors and mediates a broader understanding of customer value and is underlying the following discussion. Summarising the main points derived from Woodruff (1997) and the studies mentioned in Table 2, two key findings emerge:

1. Customer value is the contribution resulting from the use of a physical product or service to the customer’s goals and intentions.
2. Customer value grows out of product attributes, attribute performances, and consequences arising from use.

2.2.2 Customer Value Classification

The relevance of customer value in marketing is widely recognised (Gallarza et al., 2011; Kumar & Reinartz, 2016; Lee, Yoon, & Lee, 2007; Payne & Holt, 2001; Wang, Lo, & Yang, 2004) and has gained significant attention in marketing research. A range of classifications of customer value have been suggested (Smith & Colgate, 2007). Still the

classification of customer value entails conceptual and methodological difficulties (Gallarza et al., 2011; Smith & Colgate, 2007). These are discussed in the following.

Ravald and Grönroos (1996) distinguish between two customer value categories: Time and episode value, which focus on the customer relationship aspect but are incomprehensible concerning the value types and customer emotion. Woodruff (1997) suggests a more comprehensive measurement system of just three value categories: Attributes of product, performance in use and impact of product on customer goals – albeit difficult to measure across different product types. Sweeney and Soutar (2001) propose a simple customer-oriented model, comprising three dimensions: Emotional, social and functional customer value – albeit incomplete concerning product features. Holbrook (1999, 2005) refers to an eight factorial concept of value – efficiency, excellence, status, esteem, play, aesthetics, ethics, spirituality – a concept which certainly does not apply to all product types and is inadequate for the business to business (B2B) segment. Ulaga (2003) suggests eight customer value dimensions: Product quality, delivery, time-to-market, direct product cost, service support, supplier know how, personal interaction, process cost. These are representative for major product categories but do not address customer relationship (Smith & Colgate, 2007). Woodall (2003) provides a comprehensive customer-perception oriented classification concept but it has been criticised for an overlap between the categories (Smith & Colgate, 2007).

The following Table 3 summarises classifications for customer value, their advantages and critique, and draws on Smith and Colgate (2007). The lack of a widely accepted classification of customer value hinders the development of a theory grounded measurement concept (Gallarza et al., 2011; Smith & Colgate, 2007). Reliable and valid measures however require conceptual clarity. In this sense, Arvidsson (2006, p. 133) refers to “the fundamental immeasurability of values.”

Contributor	Value Categories	Advantages	Weaknesses
Ravald and Grönroos (1996)	<ul style="list-style-type: none"> - time - episode value 	<ul style="list-style-type: none"> - adding the relationship aspect to the customer value concept 	<ul style="list-style-type: none"> - incomplete view on value types - disregarding the emotional aspects of relationship
Woodruff (1997)	<ul style="list-style-type: none"> - attribute - performance in use - impact on goals 	<ul style="list-style-type: none"> - allowing a richer picture on how customers evaluate received value 	<ul style="list-style-type: none"> - difficult to measure - questionable operationalisability
Sweeney and Soutar (2001)	<ul style="list-style-type: none"> - emotional customer value - social customer value - functional customer value 	<ul style="list-style-type: none"> - simple - customer oriented 	<ul style="list-style-type: none"> - incomplete concerning product features
Woodall (2003)	<ul style="list-style-type: none"> - direct customer value: balance of benefits and sacrifice - derived customer value (use/experience outcomes) - marketing customer value (perceived product attributes), - sale customer value (value as a reduction in sacrifice or cost) - rational customer value (assessment of fairness in the benefit–sacrifice relative comparison) 	<ul style="list-style-type: none"> - identification of numerous customer value types by value category 	<ul style="list-style-type: none"> - partial overlap between value categories - the benefits and sacrifices do not fully capture higher-order value dimension
Ulaga (2003)	<ul style="list-style-type: none"> - product-quality - delivery - time to market - direct product (price) - process cost - personal interaction - supplier know-how - service-support 	<ul style="list-style-type: none"> - identifies specific benefits that are representative of each category 	<ul style="list-style-type: none"> - disregarding the existence of other types of value in business relationships like symbolic value
Holbrook (1999, 2005)	<ul style="list-style-type: none"> - value-efficiency - excellence - status - esteem - play - aesthetics - ethics - spirituality 	<ul style="list-style-type: none"> - comprehensive concept for consumer markets 	<ul style="list-style-type: none"> - applicability in B2B environment questionable - customer domain is not fully captured

Table 3: Contribution and Conceptual Weaknesses of Customer Value Approaches adopted from Smith and Colgate (2007)

Smith and Colgate (2007) merge the classifications of customer value from earlier models and summarise them in four categories as follows:



Figure 8: Customer Value Categories Adopted from Smith and Colgate (2007)

Functional and instrumental value refer to product attributes and performance characteristics expected by the buyer as well as product aptitude to achieve the customer's goal and the desired result (Smith & Colgate, 2007). The category refers back to Woodruff's (1997) customer value hierarchy. Accordingly, desired product attributes, desired use-consequences and the effect of product use on customers' goals should correlate (Sheth, Newman, & Gross, 1991). Products are functionally valuable if usage efficiency (Möller & Törrönen, 2003), product quality (Sweeney & Soutar, 2001) and reliability (Lapierre, 2000) are perceived by the customer.

Symbolic or expressive value describes the extent to which the product corresponds to customers' self-identity, personal meaning, self-expression, social and conditional meaning (Holbrook, 1999, 2005; Reed II, Forehand, Puntoni, & Warlop, 2012; Sheth et al., 1991; Sweeney & Soutar, 2001; Woodall, 2003).

- Self-identity is defined as “relatively enduring characteristics that people ascribe to themselves” (Sparks & Guthrie, 1998, p. 1396). Products appealing to customer’s self-identity produce positive customer feelings (Smith & Colgate, 2007).
- Personal meaning refers to the associations particular people connect to products depending on their personal circumstances e.g., spirituality, personal benefits, or customer’s nature.
- Self-expression refers to the extent a product reflects or expresses the customer’s personality, taste, or values.
- Social meaning is connected to the product’s status, esteem, association with social groups, or image (Smith & Colgate, 2007). Customers frequently understand the social meaning of the product as their personal status.
- Conditional meaning refers to the extent to which particular social or physical situations enhance customer value (Sheth et al., 1991). Frequently, brands are used to assign symbolic or expressive value to products. According to the American Marketing Association (AMA) a brand comprises “name, term, sign, symbol, or design, or a combination of them, intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competition” (Gnann, 2008, p. 21). Brands evoke customers’ cognitive, affective and conative reactions and anchor sensations in the mind. They cause feelings and attitudes and are crucial to buying intention (Thyri, 2003). Brands reduce business risks by reassuring customer trust in the brand, product or company and simplify buying decisions. Customers rely on their own positive experience with the brand or its general recognition in their buying decision (Ballantyne & Aitken, 2007). In many sectors brands are essential to differentiate products and to establish customer value. Particularly in business-to-customer (B2C) environments, brand value propositions are important and partly substitute personal emotions. According to Ballantyne and Aitken (2007),

B2B customers connect brands to serviceability and to their overall service experience with a particular supplier. Serviceability is the supplier capability to serve customers and determines the customer service experience (Ballantyne & Aitken, 2007). In capital goods industries, like the SPCE business, suppliers' serviceability is crucial to brand value proposition.

According to the *cost/sacrifice aspect* of Smith's and Colgate's (2007) customer value framework, customer value is the difference between the benefit of product use and the sacrifice for obtaining it (Ravald & Grönroos, 1996). The sacrifice disposes of economic and psychological dimensions.

- The economic cost sacrifice is based on Walter, Müller, Helfert, and Ritter (2003) who argue that customer value can arise from purchasing a product at a lower price, but without compromising on quality.
- Psychological cost refers to conflicts between customer and supplier (Lapierre, 2000), cognitive difficulty/stress arising from purchasing and using a product and cost related to establishing, maintaining and ending a relationship with a supplier (Ravald & Grönroos, 1996). Furthermore, cost arising from familiarising with a product, learning how to use it (Woodall, 2003), and finally cost associated with a customer's payment equity perception. This is the cost arising through "the customer's perception of the fairness of the exchange of payment for service usage" (Bolton & Lemon, 1999, p. 172).
- The sacrifice of personal investment is represented through time, effort and energy needed for purchasing and using a product (Woodall, 2003). Furthermore, through cost caused by processing it, such as storing, transport, inspection (Ulaga, 2003).
- Finally, risk is associated with operational, financial and strategic uncertainties arising from purchasing and using a product (Grönroos, 1997).

Experiential or hedonic value refers to the product's capability of delivering customer value by stimulating desirable feelings and emotions (Sweeney & Soutar, 2001). Hedonic or experiential value comprises sensory impression, social relationships, emotional and epistemic value (Sheth et al., 1991). In B2B relationships, the focus is on social-relational value aspects, namely network relationships, connectedness, personal relationships, trust and responsiveness (Smith & Colgate, 2007).

- Network relationships represent customers' benefit from the supplier relationship (Möller & Törrönen, 2003) e.g., through product specific information, resource access to enhance business processes, contact to gatekeepers like governmental institutions or research and development partners, and access to sales markets. Strong supplier brands can have signalling functions and brand customers benefit of the signalling effect in their own target markets i.e., the transfer of the supplier's positive market reputation to customers.
- Connectedness describes the level of integration between customers and suppliers. To establish their integration, suppliers offer high quality products, accurate planning/forecasting, efficient support and low transaction cost (Ulaga, 2003).
- Personal relationships are psychological and social bonds between customer and supplier staff (Gremler, 1995). They result in social affiliation, mutual understanding, constructive problem-prevention and problem-solving behaviour (Ulaga, 2003).
- Trust between customer and supplier represents the assumption that positive past behaviour will be repeated in future cooperation (Chiu, Hsu, Lai, & Chang, 2012; Williamson, 1993), induces customers' habitual purchase decision-making, can reduce search and transaction cost and increase profitability (Ulaga, 2003).

- Responsiveness is the supplier's ability and willingness to respond to changing customer needs. Suppliers adjust to customer requirements by vendor-managed inventories, just-in-time delivery or inventory positioning in customer supply-chains. These strategies generate customer value by cycle time-reduction in the supply chain and increased adaptation speed to changing environmental conditions (Handfield & Bechtel, 2002).

The conception of customer value of Smith and Colgate (2007) comprehensively describes the value dimensions from a customer perspective and addresses weaknesses of the previous concepts (refer to Table 3). In contrast to Grönroos (1997), Ulaga (2003) and Woodall (2003), customer value types are mapped completely, comprehensively and distinctly. Smith and Colgate's (2007) customer value model provides a comprehensive list of subdimensions of customer value and thus is of high practical relevance. Unlike the customer value model of Holbrook (1999, 2005) which is focussed on a B2C context, the model of Smith and Colgate (2007) can refer to B2C or B2B relationships. In sum, the Smith and Colgate (2007) customer value framework is a fusion of earlier concepts and incorporates their strengths but avoids earlier weaknesses. It is applicable to analyse businesses' present customer value status (own or competitive) and equally to elaborate future customer value development plans intending to enhance customer satisfaction (Kumar & Reinartz, 2016). Its only critique in a B2B context is the low relevance of the category "symbolic or expressive value" in its original sense. In the following, the brand promise of serviceability and risk reduction are referred to for the symbolic/expressive value category in B2B markets.

2.2.3 Contribution of Conceptualisation of Customer Value to Research Aim and RQs

Section 2.2 has defined the term 'customer value' and has found categories to assess the fields of customer value creation and thus has contributed to answering RQ2 "Which aspects of customer value creation are relevant to customers in the SPCE business?" based on general marketing literature, but not specifically for the SPCE sector so far.

Customer value results from the use of a product or service and represents the value, customers in fact perceive. Customers find a product valuable, when they experience a positive impact from product-use on their goals and purposes in use-situations (Woodruff, 1997).

Customer value, according to Smith and Colgate (2007), comprises four dimensions, functional, symbolic, cost/sacrifice and experiential value and each value element contributes to the total value perception.

By defining and classifying customer value creation, the study contributes to the research aim of analysing future sources of competitive advantage in the German SPCE industry. Customer value has been identified as the major source of competitive advantage.

2.3 From Customer Value to Competitive Advantage

Sections 2.1 and 2.2 have conceptualised competitive advantage and customer value. Section 2.3 analyses the interrelationship between these concepts and drafts a conclusive cause-and-effect chain.

2.3.1 A Competitive Advantage Creation Chain

According to Barney (1991); Porter (1985); Yonggui et al. (2004) “value creation” for customers is crucial to realise competitive advantage. Kumar and Reinartz (2016) generally agree on the relationship between the two constructs but explain that a sequence of steps is necessary to transform customer value into competitive advantage.

Neoclassical theory has been developed to assess the interplay of market supply and market demand (Varian, 1995) and could be relevant to the analysis of how companies

generate competitive advantage by delivering customer value. The theory holds that consumers decide rationally and based on reproducible considerations which product to utilise or consume. Accordingly, a calculable decision framework, like Bernoulli's expected utility hypothesis (concerning people's preferences with regard to choices that have uncertain outcomes) should guide buyers to maximise the value, while minimising their risk in consumption decisions (Schmidt & Terberger, 1997). Buyers should accordingly choose products which maximise their expected utility value based on the expectations of the life time utility the product generates (Lüder, Blohm, & Schaefer, 1995). Neoclassical consumption theory however is based on a closed and highly theoretical set of assumptions. Consumers have to be informed on the relative value of all product alternatives clearly before they decide (Schultz, 1987). Buyers have to dispose of a transitive and rational utility function and be conscious of its existence (Mortimer, 2007). They have to assess the risks of the buying process rationally and dispose of a clearly defined set of alternatives (Schmidt & Terberger, 1997).

Obviously, these preconditions to neoclassical decision-making and buying behaviour are not met in the SPCE business. SPCE comprises of overly complex components and buyers cannot understand all technical details. Additionally, the potential applications of SPCE are very manifold, so that it is impossible for customers to assess a machine's adequacy for every application purpose (Homburg & Koschate, 2007), its durability, maintenance requirements and cost-benefit ratio (Heine & Herr, 2013), upfront. The operability of SPCE does not depend on the product quality itself alone, but equally on the quality of the aftersales capabilities of the servicing dealer, as well as on the correct application of the machine in the respective use situation.

In the buying phase, SPCE users require reliable advice on which equipment in which combination is apt for their purpose and how to use it correctly. To operate the machine, buyers require particular local services which the SPCE dealer provides. To ensure the serviceability of SPCE equipment, both the quality of the machine and high-quality dealer service are essential. Buyers who decide for a new piece of SPCE thus cannot decide in the way customers in digital B2C markets could, but have to include the selling dealer's service capability and their personal relationship with the dealer in

their considerations (Rebien, 2007). The neoclassical model of rational consumer choice is thus inadequate for the analysis of customer decision-making processes in the SPCE sector.

To assess the cause-and-effect chain leading from customer value creation to competitive advantage in the SPCE segment, marketing psychology provides better founded insights and models. It recognises that any purchase directed behaviour is based on buyers' inner motivation. Motivation is the inner desire to achieve concrete objective or obtain particular things and is the essential driving force of human reflection and action (Bear, Connors, Paradiso, & Engel, 2009). Psychological process models analyse how motivation emerges and how it takes effect on buying decision and purchase actions (Drumm, 2008). Process models of marketing psychology seem more suitable than neoclassical theory to evaluate how customer value is transformed into providers' competitive advantage in the SPCE segment.

Accordingly, consumers decide for a product and take purchase action when this behaviour results in material and emotional rewards e.g., material advantage and psychological satisfaction which they experience when using the product (Grunert, 2013). The feeling of satisfaction is decisive in conditioning consumers to buy the product again or recommend it to others (Bandura, 1995). The theory of motivated behaviour appeals to the SPCE business in particular. SPCE customers have to rely on the machinery they have bought, as a reliable production asset in their value chain and daily work practice. They are satisfied, when the equipment performs reliably in their specific construction use situations. The feeling of getting construction jobs done as planned, without unforeseen value chain interruptions and possibly perform even faster or more effectively than competitors satisfies SPCE customers. To realise SPCE performance, customers depend on advice and consultation of their SPCE dealer who informs on adequate application, technological efficiency-improvement opportunities and provides the necessary service reliably.

Successful marketing manages to appeal to customers attitudes and develop customers' involvement with a product. Attitudes are inner predispositions to

perceive, feel think and act with regard to an object (Newcomb, 1953). Attitudes involve rational reflection but equally affective and conative elements. Customers developing positive attitudes on a good or service develop thoughts, but equally emotions and action intentions concerning its purchase and utilisation (Mummendey, 1988). To motivate buying processes, marketing has to appeal to all three attitudinal dimensions in the prospective buyer (Herber & Vásárhelyi, 2002). In the SPCE sector, this comprehensive marketing approach implies that not only technically refined equipment is offered (in the way an online webpage could), but equally that the SPCE dealer convinces the customer of his serviceability and reliability after the purchase act. The SPCE customer desires a reliable partner to collaborate trustfully in daily operative practice.

From these insights on the relevance of customers' positive product-related attitudes and cognitive, emotional and conative involvement with the product, it is obvious that a valuable product which at the functional/instrumental level creates customer value is not automatically a competitive advantage for the dealer. To motivate customers to proceed in the buying process, further psychological steps have to be run through.

Marketing funnel models have been developed to understand, classify and analyse the process, which lead customers from product perception to buying and repeated purchase. The first marketing funnel model, the AIDA model (Attention–Interest–Desire–Action), was established as early as 1903 by St. Elmo Lewis, and referred to requirements mainly for advertisement. Successful advertisement accordingly has to motivate customers to look at the product, generating attention. Advertisement should then generate customers' interest and develop the desire to own the product, which would finally guide them to purchase action (Kim, 2003). The AIDA model was accomplished by additional funnel stages later on and the parameters satisfaction and confidence were added (Koschnick, 2016). Kotler's et. al (2007) five-stage funnel model includes the post- purchase stages satisfaction, loyalty and customers' recommendation behaviour. Only when customers enjoy the experience of using the bought product, they stay sustainably satisfied and keep loyalty to the company i.e.,

buying further products, returning for service and consultation and finally recommending it to others (De Pelsmacker, Geuens, & Van den Bergh, 2007).

The extended purchase funnel model fits for the SPCE business: To develop true satisfaction with their SPCE, customers have to be able to trust in the reliability of the equipment and in the quality of the service required to operate the machinery. Customers are likely to return to the dealer for maintenance and repair, when they feel that these services ensure to long-term operationality of the equipment. In that case they might buy further products from the distributor and service partner and equally recommend this company.

Early research on organisational buyer behaviour has been based on the central assumption, which is closely associated with B2C research, that marketing is fundamentally about understanding the customer. For example, the classical work of Robinson, Faris, and Wind (1967) on industrial buying and creative marketing conceptualises that buying decision making happens within buying centres in the customer company and that it is divided into sequential process phases, starting from the identification of needs and ending with the post-purchase evaluation of the acquired product. Depending on the nature of the buying situation, such as new task, modified rebuy, straight rebuy, there can be variations in the phases (Wind & Thomas, 2010). Webster Jr and Wind (1972) focus on the conceptualisation of the buying organisation around the influencing factors of the environment, the organisation, the buying centre and individual participants involved in the process on buyer side. Again, with a primary focus on the buying organisation. Sheth (1973) identified three factors dominating organisational buying behaviour. These are the individual psychology of those involved in the process, the conditions leading to buying decisions and the process of decision making (Wind & Thomas, 2010). Also, here the focus lies on the customer organisation. The view that marketing should focus on understanding the customer was radically changed by the Industrial Marketing and Purchasing Group. This collaboration of several European universities developed a dynamic conceptualisation of buyer supplier relationships (Håkansson, 1982). These authors found that the interaction in B2B environments is not just a sequence of independent

activities between suppliers and customers, who enter a market and then leave again after deal closure. It is rather an episode within a wider frame of a relationship between the actors. They also challenge the view that in marketing suppliers apply a developed marketing mix to a passive base of customers. Instead, it appears that customers play an active role in initiating and executing transactions between them. Another finding relates to the nature of customers and suppliers. These groups have been found to be heterogeneous rather than homogeneous. By taking a dyadic not a monadic perspective they concluded that the buying process in B2B markets is a system of complex relationships between the organisations of the buyer and the seller, rather than a simple sequence of independent actions on supplier and buyer side. In order to understand the interplay of actions making up the process, the relationships on both sides need to be examined in parallel and considering the context in which they take place (Ford & Håkansson, 2006). In these relationships the interaction between the two sides ideally generates economic value for all stakeholders.

Based on the work of the Industrial Marketing and Purchasing Group Ford (1980) argues that every interaction between buyer and seller, takes place within the context of the overall relationship. Such relationship develops over a sequence of episodes: The pre-relationship stage, the early stage, the development stage, the long-term stage and the final stage. The utilisation of a company's portfolio of relationships and the usage of its core resources within these relationships drive its advantageous positioning within competitive markets (Ford, McDowell, & Tomkins, 1996). Such customer relationships are established and maintained interpersonally. They act between either individuals or groups and can occur on different hierarchical levels in an organisation (Turnbull, Ford, & Cunningham, 1996). The value stemming from relationships is forward orientated. Investments made into relationship building activities of companies do not result in immediate return for the investor. In fact, they are made in order to harvest from them in future. The return of relationship investments is not just the conclusion of the next transaction, but relates to the episodes of relationship making described by Ford (1980). These studies of Ford (1980), Turnbull, Ford, and Cunningham (1996) fostered the development of a long-time, trustful connection between both parties, based on which future transaction can

be concluded faster, easier, more efficient and overall, more beneficial for all stakeholders. Ford and Håkansson (2006) conclude that relationships may be the most valuable resource of a company. These authors furthermore stated that relationships are not purely relevant for marketing and procurement. In their view the relationships a company holds, and the quality of these relationships determine the nature of a company as a whole. In terms of context, Ford and Håkansson (2006) explicitly name the equipment sector as one, that fundamentally requires strong supplier – customer relationships to generate value from the product.

Targeted customer relationship management enables SPCE dealers to multiply marketing effectiveness and the profitability of their business. Customers who feel cared for and estimate positive service encounters, are more likely to keep loyalty and more often recommend the product than customer who do not have that impression (Parvatiyar & Sheth, 2001; Zentes & Swoboda, 2001). Customer relationship management establishes a sustainable feedback system from customer to provider. Loyal customers inform their dealer on quality and service problems and initiate a continuous improvement cycle with the provider, which ensures that customer requirements are increasingly well met (Goddard, Raab, Ajami, & Gargeya, 2012). The extended purchase funnel model thus can explain, how SPCE dealers transform customer value into profitability.

The following causal chain is based on the idea of the funnel principle of marketing. Customer value first results in customer satisfaction which leads to customer trust and customer loyalty, which finally results in competitive advantage and business value creation.

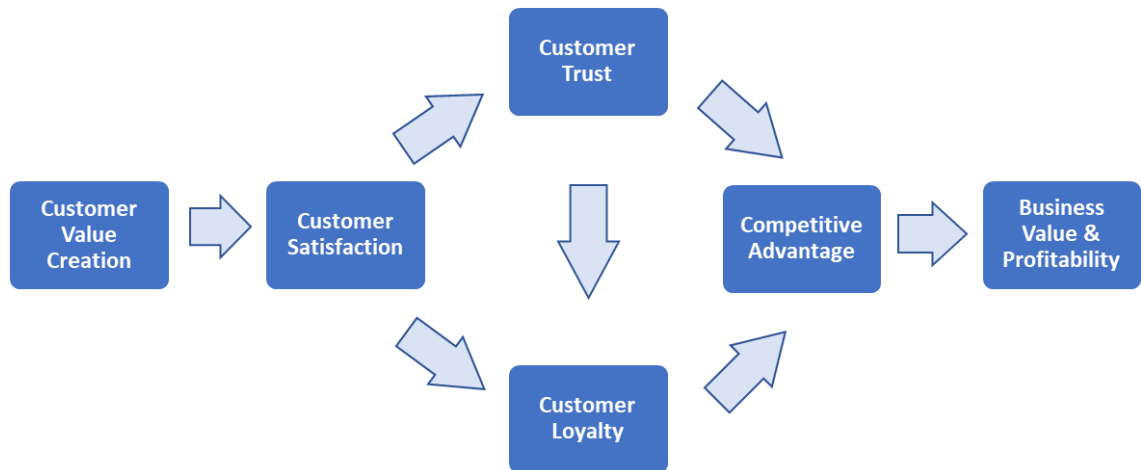


Figure 9: The Competitive Advantage Creation Chain

To create customer satisfaction, customers need to perceive customer value. Customer satisfaction turns into customer trust and loyalty. Loyal customers are more ready to pay a price premium than disloyal customers, which allows providers to realise higher profits than competitors and maximise their returns (Kumar & Reinartz, 2016), constituting a competitive advantage. Thus, customer value is the starting point of competitive advantage and corporate value creation (Kumar & Reinartz, 2016; Porter, 2008).

Wang, Liang, and Joonas (2009) confirm that customer value contributes to business performance. Jensen (1996), Woodruff (1997), Feng and Morrison (2007), Ravald and Grönroos (1996), Payne and Holt (2001), Smith and Colgate (2007), Li (2009), Gallarza et al. (2011) and Kaleka and Morgan (2017) see customer value creation as fundamental to competitive advantage. The following sections analyse this cause-and-effect chain in more detail.

2.3.2 From Customer Value to Customer Satisfaction

Customer value creation is conditional to customer satisfaction (Gounaris, Tzempelikos, & Chatzipanagiotou, 2007; Lam, Shankar, Erramilli, & Murthy, 2004). Inversely, customer satisfaction is a function of perceived customer value (Anderson,

Fornell, & Lehmann, 1994; Fornell, Johnson, Anderson, Cha, & Bryant, 1996; Ravald & Grönroos, 1996; Woodruff, 1997).

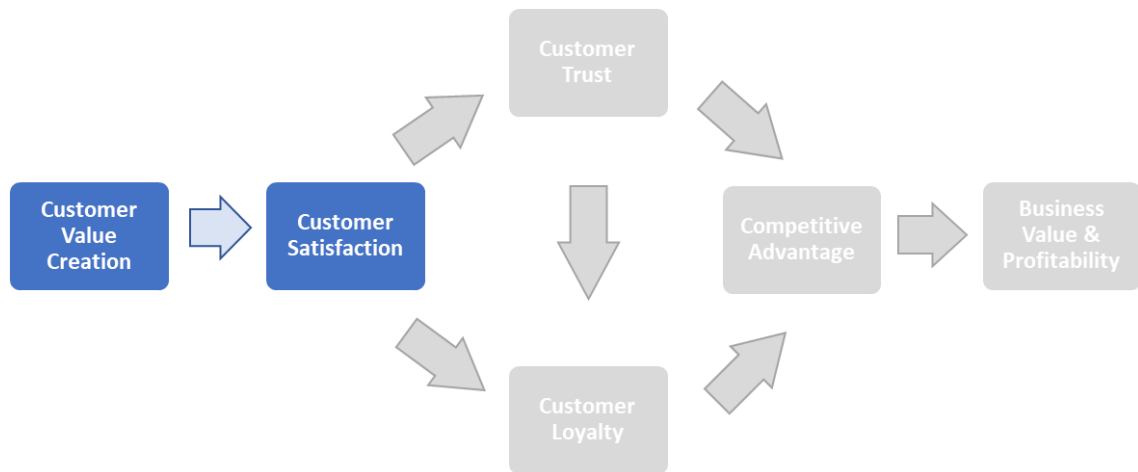


Figure 10: From Perceived Customer Value to Customer Satisfaction

Customer satisfaction results when customers perceive that product performance meets or exceeds their expectations (Kumar & Reinartz, 2016).

Satisfaction is a multifaceted term and frequently applied in a marketing context. Satisfaction refers to a mental condition of consumers or customers and usually is perceived as the outcome of a consumption process or service encounter (Walter, Mueller, & Helfert, 2000).

Early definitions of satisfaction usually refer to the cognitive aspect of the term. For example, Howard and Sheth (1969, p. 145) state that satisfaction is “the buyer’s cognitive state of being adequately or inadequately rewarded in a buying situation for the sacrifices undergone.” Westbrook and Reilly (1983, p. 256) however point out that satisfaction rather refers to “an emotional response to the experiences provided by and associated with particular products or services purchased.” This definition focusses on the affective consumer reaction satisfaction entails. Equally, Cadotte, Woodruff, and Jenkins (1987, p. 305) point out that satisfaction is a “feeling developed from an evaluation of the use experience”, which means that customer satisfaction rather depends on the sentiments the customer develops than on the factual result of the service delivery or purchase.

More recent definitions of satisfaction suggest that both cognitive and affective processes are involved in the emergence of satisfaction and interact. Customers develop positive sentiments concerning a product or service when the quality fits and they perceive performance as adequate and when their emotions are positive (Giese & Cote, 2000). SPCE dealers should integrate both, a customer orientated, and reliable service combined with professional advice as well as high-quality product offers to keep customers satisfied.

Satisfaction is described alternately as a state or - particularly in service-oriented businesses - as a process. Satisfaction refers to the understanding that based on a process of evaluation of the encountered service or acquired product, customer expectations are met or exceeded (Parker & Mathews, 2001).

The process of customer satisfaction generation is mapped by the disconfirmation model suggested by Oliver (1980) and further developed by Parasuraman et al. (1988) (refer to Figure 11). The model describes customer satisfaction as a function of the customer's perceived product performance (P) and expected performance (E). When perceived performance exceeds customers' expectations ($P > E$), positive disconfirmation occurs and induces customer satisfaction. When perceived performance equals customers' expectations ($P = E$), customers receive the performance expected and are generally satisfied. When perceived performance is below customers' expectations ($P < E$), however, customers feel dissatisfied (Anderson et al., 1994).

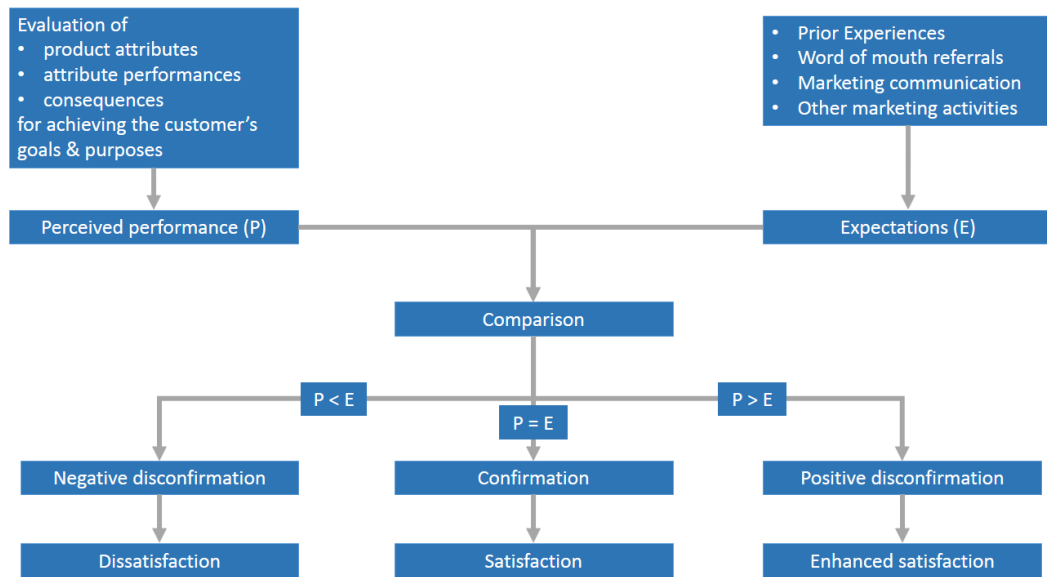


Figure 11: Woodruff's Customer Value Definition integrated into the Disconfirmation Model adopted from Parasuraman et al. (1988)

Extending the disconfirmation model with regard to Woodruff's (1997) customer value model, perceived product performance (P) is based on the impact of product attributes, attributes performance, and the consequences of use, for achieving the customer's goals and purposes. This extension of the original disconfirmation model explains that perceived product performance (P) results as the impact product use has on customers' goal and purpose achievement. To maximise customer value, perceived performance (P) at the level of customers has to be maximised. That is the case when perceived performance (P) exceeds customers' expectations (E) (Woodruff (1997). Customer expectations (E) result from customers' prior experiences, word of mouth referrals, marketing communication and other marketing activities (Gounaris et al., 2007; Parasuraman et al., 1988; Woodruff, 1997) and co-determine customer satisfaction (Oliver, 1980). Businesses can on the one hand influence customer expectations and on the other maximise product performance to maximise customer satisfaction.

The disconfirmation model has emerged as the dominant satisfaction assessment method in consumer marketing (Oliver, 2014), tourism (Yüksel & Yüksel, 2001) and even in the public sector (Grimmelikhuijsen & Porumbescu, 2017). Yüksel and Yüksel

(2001) and Hsu, Hsu, Wang, and Chang (2016), however, doubt the applicability of the model in the pre-purchase phase. In practice, customers do not have a comprehensive set of expectations for all product attributes in every consumption situation, but disconfirmation cannot take place without definite customer expectations (Yüksel & Yüksel, 2001). Although this critique is basically valid, it appears artificial since every theoretical model requires some form of abstraction and cannot cover any theoretically possible constellation. Because of that, the disconfirmation is rated valid. The following sections thus refer to the disconfirmation paradigm in its above modified form (Figure 11) to develop the research framework.

The disconfirmation model extended by the customer value conceptualisation of Woodruff (1997) (refer to Figure 11) informs suppliers on determinants of customer value experience and is valuable for marketing practice. Using the model retrospectively, businesses can analyse their customer value generation and resulting customer satisfaction e.g., by interviewing customers on the impact of product usage on goal achievement or consequences of usage. Comparing these results to customer expectations, customer satisfaction results as the difference between expectation and factual product performance. Planning product developments strategically, businesses maximise the positive difference between perceived performance (P) and customers' expectations (E) and realise customer value maximisation.

The process character of satisfaction entails, that satisfaction can change into dissatisfaction if the expectation of the customer is not met anymore in repeated consumption processes or service encounters. A supplier's continued engagement is necessary to maintain and develop the state of customer satisfaction. This process character of satisfaction is of particular relevance in the SPCE business. Customers investing in SPCE return to the dealer for service and repair work and will keep satisfied with their machinery only when the repair and maintenance activity is successful. SPCE dealers should pay particular attention to keeping the customer satisfied at every encounter, in order to establish a trusting customer relationship.

2.3.3 From Customer Satisfaction to Trust

Customer satisfaction is conditional to customer trust (Kuo, Wu, & Deng, 2009; Liu, Guo, & Lee, 2011).

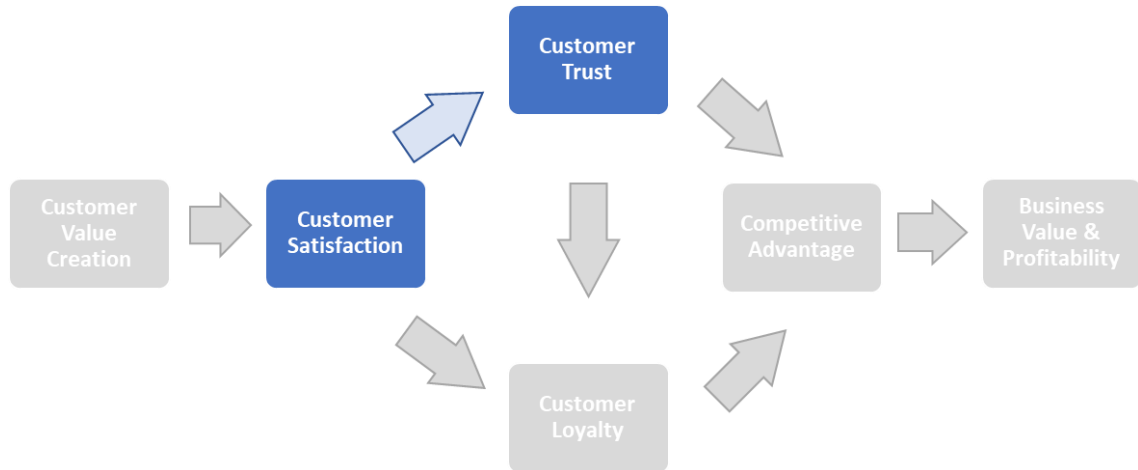


Figure 12: From Customer Satisfaction to Trust

Trust can appear in the forms of interpersonal trust and organisational trust. Interpersonal trust is the expectation that an individual or group can be relied on (Rotter, 1967). Organisational trust is a person's belief that the organisation and the people in that organisation will not fail them (Montague & Chiou, 2014). Trust requires a trustor and a trustee and entails that the trustor conveys trust to the trustee (Driscoll, 1978; Scott III, 1980).

Trust is among the constructs most frequently examined in organisational research. Accordingly, a large number of definitions can be found in literature (Bunker, Alban, & Lewicki, 2004). Rousseau, Sitkin, Burt, and Camerer (1998, p. 393) offer a general definition of trust: "Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another." Wang et al. (2009) define trust as the expectation that positive past behaviour will repeat. For Gefen, Karahanna, and Straub (2003); Hwang and Kim (2007), trust is based on the belief that the other party will not act opportunistically but socially and ethically correctly. Most trust definitions share a characteristic feature: The willingness of the trusted party to bear the risk of being disillusioned (Kee & Knox, 1970). On one hand, trust enables the trusted party to engage with the environment in

positive expectation and thus encourages the environment to react appropriately to this positive expectation (Sheppard & Sherman, 1998). On the other, trust puts the trusting person in the risky position of assuming that a positive experience will be repeated, thus giving up control (Mayer & Davis, 1999).

According to Burke, Sims, Lazzara, and Salas (2007), trust can be a character trait, a process or an emergent state:

- Trust as a character trait:
Character traits are features of a personality that are only slightly influenced by environmental factors. In this sense, trust is the personal inclination to meet other people openly (Rotter, 1967).
- Trust as a process:
From this perspective trust intervenes in behaviour, attitudes and relationships, strengthening or weakening them. For example, a lack of trust can impair communication between buyer and supplier, when the disclosure of sensible and hence risky information is avoided (Khodyakov, 2007).
- Trust as an emergent state:
Emergent states change dynamically, for example, under the influence of context factors or processes (Marks, Mathieu, & Zaccaro, 2001). Trust can therefore represent an attitude that gradually develops based on context factors and needs. The time, trust takes to develop differs, depending on the context (Burke et al., 2007).

In the context of the SPCE dealer and customer relationships, all three perspectives on trust are relevant. Customers trust since they know contact people at the supplier company in person and are convinced that “their” dealer will advise them honestly on purchase, service and repair jobs e.g., by not recommending the purchase of a new piece of equipment if the actual one can be repaired at economically justifiable cost. In

the SPCE sector, personal trust is an important foundation of long-lasting business relationships.

In the SPCE segment, trust equally is a process, established in the course of continued business interaction. SPCE customers keep continued contact with the supplier since they require information on the technical functions and possible applications of the equipment. SPCE has to be serviced at regular intervals and this service frequently is done on site i.e., inspection dates have to be agreed on personally and employees of supplier and customer meet on the site. In these repeated service encounters, customer and supplier can develop a self-reinforcing, trustful relationship (Aurich & Clement, 2010). Dealers depend on continuous customer interaction to run their businesses profitably, since new sales take place much less frequently than in the private cars sector for instance, since the SPCE equipment market is much smaller (Schweitzer, Willenborg, Pier, Fuchs, & Jenne, 2010).

Thus, trust in the SPCE sector is an emergent state i.e., it evolves and is strengthened due to repeated and long-lasting customer relationships. Both partners – customer and dealer – depend on each other and this mutual dependency grows with a dealer's knowledge of their customers' requirements.

According to Auh & Johnson (1997), trust strengthens the positive relationship, which satisfaction has established. In customer-supplier relationships, trust is connected to the expectation of likely future cooperation (Williamson, 1993). Trust develops gradually over time and is preconditional to customer loyalty (Ravald & Grönroos, 1996; Reichheld & Scheffer, 2000). Trust emerges after several successful and satisfactory transactions, which assure customers that suppliers will show the same performance in future and keep their promises (Pereira, Alves, & Ferreira, 2016). According to Kabiraj and Shanmugan (2011), Singh and Sirdeshmukh (2000) and Deng, Lu, Wei, and Zhang (2010) trust is a central driver of loyalty. Customer trust is a driver of the quality of the customer-supplier relationship and positively influences customer loyalty towards suppliers. This relationship is examined in the following section.

2.3.4 From Satisfaction and Trust to Customer Loyalty

Customer loyalty emerges mainly out of customer satisfaction and trust. Loyalty is the deep commitment to recommend and/or repurchase specific products of the same brand in future (Oliver, 1999). It has a strong impact on the competitive edge of a company because loyal customers are less likely to buy from competition (Curtis, Abratt, Rhoades, & Dion, 2011). Loyalty is a very meaningful indicator for business success (Curtis et al., 2011; Nyadzayo & Khajehzadeh, 2016) and a key element for continued business survival and future growth (Kuo et al., 2009; Skarmeas, Zeriti, & Baltas, 2016).

Numerous studies² have identified a strong link between customer satisfaction and customer loyalty. As one advocative example for a strongly positive correlation between the constructs, Heskett, Jones, Loveman, Sasser, and Schlesinger (1994) found that customers satisfaction is one of the most important criteria for customer loyalty. Nevertheless, there is a continuous debate about the nature and the quality of the effect that customer satisfaction has on customer loyalty. Initially the relationship between customer satisfaction and customer loyalty was expected to be of a linear nature (Johnson & Auh, 1998). This view is challenged by the opinion of authors such as Bloemer and Lemmink (1992), Fornell (1992), Jones and Sasser (1995), Reichheld (1996), Auh and Johnson (1997) or Suh and Youjae (2006). They state that there are situations in which loyal customers defect, for example in highly competitive markets or when there is little room for differentiation. For Bloemer and Kasper (1995) the satisfaction – loyalty relationship is not straightforward. Homburg and Giering (2001) found that it can be strongly influenced by personal circumstances and characteristics. These can be variety-seeking, income or age. Wolter, Bock, Smith, and Cronin Jr (2017) state that customer satisfaction is only able to generate cognitive but not conative

² (Cronin Jr, Brady, & Hult, 2000; De Ruyter & Wetzels, 2000; Deng et al., 2010; Dick & Basu, 1994; Dixon, Bridson, Evans, & Morrison, 2005; Fornell, 1992; Guenzi & Pelloni, 2004; Johnson & Auh, 1998; Krystallis & Chrysochou, 2014; Lam et al., 2004; Liu et al., 2011; Mende, Thompson, & Coenen, 2015; Mittal & Kamakura, 2001; Rauyruen & Miller, 2007; Ravald & Grönroos, 1996; Seiders, Voss, Grewal, & Godfrey, 2005; Szymanski & Henard, 2001; Tripathi, 2017; Wang et al., 2004; Zeithaml, Berry, & Parasuraman, 1996)

loyalty. This results in customer behaviour that can be disrupted by situational, competitive and financial barriers. Other research findings show a sooner deterioration of the positive effect of customer satisfaction on customer loyalty than the one of other concepts, such as customer-company identification (Wolter et al., 2017). Curtis et al. (2011) acknowledge that loyal customers are typically satisfied. However, on the other hand, they argue that customer satisfaction is just one step in loyalty formation but not the sole predictor of customer loyalty.

Summarising, the results of studies on the relationship between customer satisfaction and customer loyalty are very mixed, multifaceted, seldom aligned and sometimes even contradictory (Biscaia, Rosa, Moura E Sá, & Sarrico, 2017; Curtis et al., 2011). Motivated by this confusing and contradictory state of research, Curtis et al. (2011) conducted a meta-analysis. They wanted to understand whether in light of the confusing variety of different directions the strong positive correlation between the two constructs could still be defended. Their analysis included 32 studies on the customer satisfaction/customer loyalty relationship in which a total of 153,150 subjects had participated. Through the meta-analysis Curtis et al. (2011) found that the number of reported correlations within these studies was 82 and that there was correlation of 0.54 between the constructs of customer satisfaction and customer loyalty, confirming that satisfied customers do show a stronger loyalty and a higher repurchase intention rate than disloyal customers.

Measure	Meta-Analysis
Sample size	153,150
Number of correlations	82
Observed correlation	0.54
Observed SD	0.16
%Variance attributable to SE	1.02%
SD residual	0.16
Corrected correlation	0.54
SD of corrected r	0.16

Figure 13: Results Loyalty-Satisfaction Meta-Analysis (Curtis et al., 2011)

With this, the relationship between satisfaction and loyalty seems confirmed. Nevertheless, the continuous debate on the nature of the relationship suggests that further parameter could intervene in loyalty formation. The Apostle Model from Jones and Sasser (1995) differentiates this proposition. It categorises customers into four categories according to their loyalty and satisfaction levels.

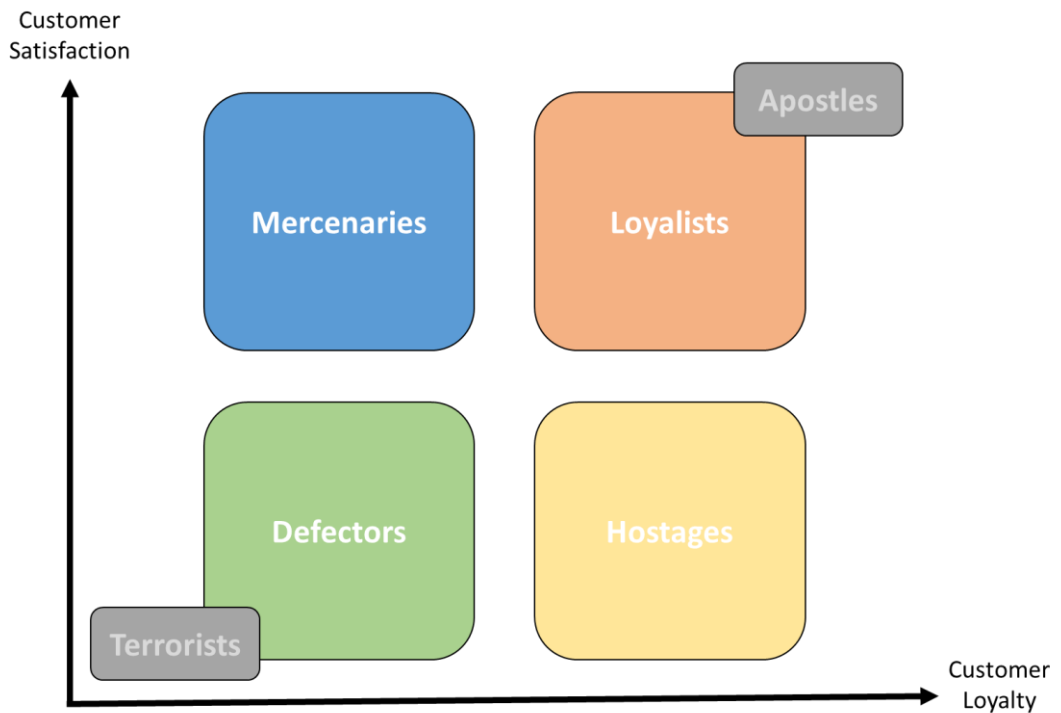


Figure 14: The Apostle Model (T. Jones & Sasser, 1995)

Highly loyal and satisfied customers (loyalists) are inclined to repurchase and recommend a product. Mercenaries are satisfied but not loyal and show the tendency to seek better offers from other suppliers. The group of defectors are dissatisfied and can take recourse to alternative products, which induces them to spread negative word-of-mouth. The customer group of hostages are dissatisfied but have no alternatives available, what keeps them loyal involuntarily. The Apostle Model illustrates that beyond satisfaction, there are further factors that can induce loyalty, partly even in spite of low satisfaction (hostages quadrant): Habits and switching barriers.

Habits create loyalty. Chiu et al. (2012) describe habits as automatic responses, not triggered by cognitive analysis, but by past experiences of correlation between purchase decision and satisfaction. While repetitive behaviour can be stimulated by instinct or impulse (Misztal, 2013), habit means “to have a particular kind of mental cause operating” (Turner, 1994, p. 16). According to Morrison and Firmstone (2000), habits are an effective risk management approach. They simplify social complexity by reliance on familiar practices. Habits are linked to trust. According to Chiu et al. (2012), perceived value familiarity and particularly satisfaction are essential to habit-formation.

In a 2017 Harvard Business Review article “Customer Loyalty is Over-rated”, Lafley and Martin (2017) explain that routine buying behaviour substitutes rational problem-solving behaviour. The human brain prefers automatic and programmed actions over conscious considerations. Repeated automatic and programmed actions become habits. Thereby, habitual behaviours turn into routines and in customers’ minds accustomed products are perceived as more advantageous than competing unconventional alternatives. Lafley and Martin (2017) name this mechanism cumulative advantage and conclude that companies should invest in making purchasing decisions a habit.

To conclude, trust is a precondition for habitual action. Trust and habit are two consecutive steps in the customer journey from satisfaction to loyalty and represent sources of competitive advantage.

Switching barriers additionally enforce customer loyalty. These describe the financial, social or psychological difficulty, unsatisfied customers incur, when attempting to change supplier (Fornell, 1992). With growing change barriers, the likelihood that customers remain loyal increases (Kuo et al., 2009). The Apostle Model of Jones and Sasser (1995) in Figure 14, characterises customers locked-in by switching barriers as “Hostages”. Up to a certain satisfaction level, switching barriers codetermine customers’ level of loyalty (Colgate & Lang, 2001; Jones, Mothersbaugh, & Beatty, 2002; Lee & Cunningham, 2001). According to Jones, Mothersbaugh, and Beatty (2000)

and Kuo et al. (2009) there are three major types of switching barriers: Perceived switching cost, established interpersonal relationships and the attractiveness of competing alternative offers.

- Perceived switching cost are financial, social, performance-related and psychological risks customers incur, when changing suppliers (Murray, 1991) and include the search cost, customisation cost and learning cost of a supplier change (Guiltinan, 1989). With an increase of switching cost, the potential financial attractiveness and motivation of a supplier change diminishes (Jones et al., 2000).
- Interpersonal relationships are psychological and social bonds established between customer and supplier. Interpersonal relationships appear in the form of intimacy, trust, care and communication (Gremler, 1995; Ulaga, 2003) and develop over time due to regular interaction. Social psychology research shows that individuals prefer to be part of intimate, trusting social groups over membership in loose and non-committal groups (Jones et al., 2000). In a business context, customers gain substantial value when they perceive social benefits in the relationship with their supplier (Blocker, Flint, Myers, & Slater, 2011). Satisfied customers enjoying social proximity with the supplier, avoid quitting this relationship and tend to remain loyal (Jones et al., 2000; Kuo et al., 2009). Strong customer relationships, accordingly, contribute to develop and maintain competitive advantage (Kandampully & Duddy, 1999). Trust contributes to develop lasting and harmonious interpersonal relationships between customer and supplier.
- Attractiveness of alternatives refers to the customer perception that alternative suppliers offer equal or even higher customer value and satisfaction than the current supplier (Colgate & Lang, 2001). Even unsatisfied customers tend to remain loyal if adequate accessible alternative supply options are unavailable (Jones et al., 2000). Trusting customers partly neglect the search for alternatives. Since suppliers cannot control the availability of alternatives, however, the maximisation of switching cost and the development of trusting customer relationships are the only promising methods of building switching barriers to keep customers loyal.

The customer categorisation of the Apostle Model of Jones and Sasser (1995) in Figure 14 is not static. Customers usually move from one category to another, depending on their situational satisfaction and trust levels. The Satisfaction – Loyalty Relationship Model in Figure 15 illustrates the development of a customer from a mercenary into a loyalist.

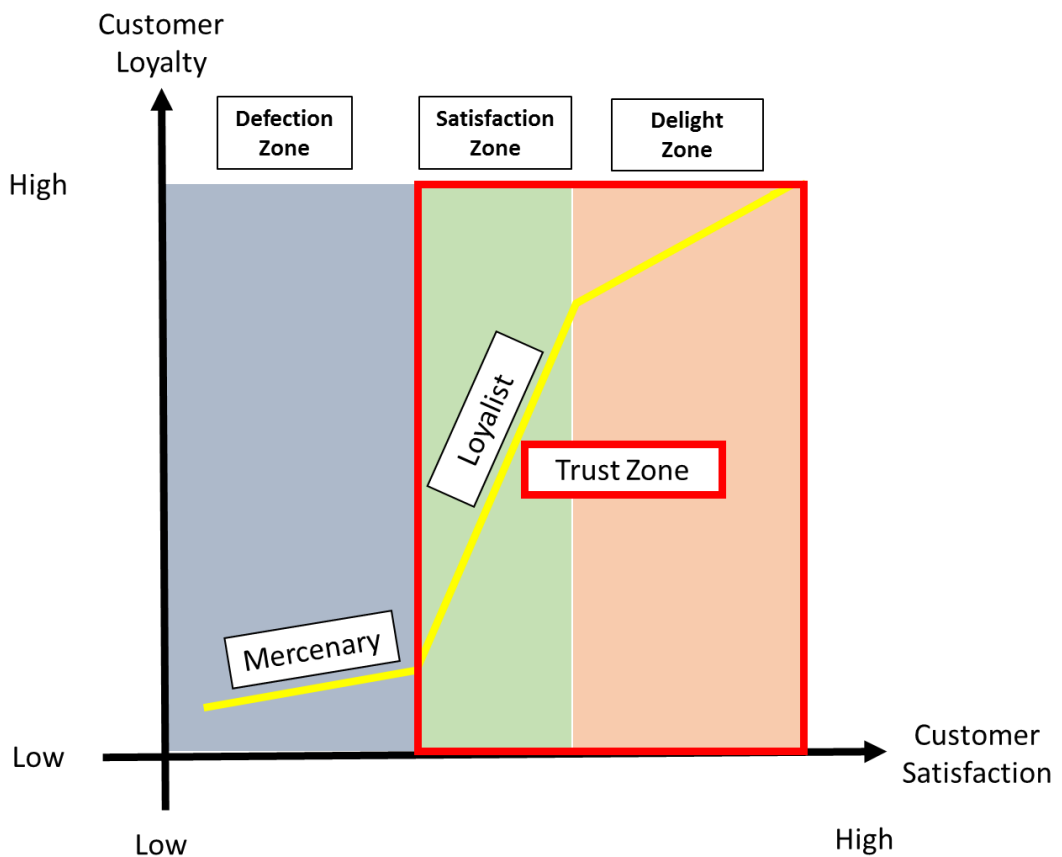


Figure 15: The Satisfaction – Loyalty Relationship (Johnson & Auh, 1998)

The mercenary’s movement towards a higher satisfaction level is driven by personal experiences during supplier and product search (Johnson & Auh, 1998). With growing experience, mercenaries start to identify with fitting products increasingly and reduce the set of alternatives they choose from. By narrowing down choice options and developing buying routines, customers save search cost and avoid the necessity of costly and stressful ad hoc problem-solving, what results in higher satisfaction levels and moves the mercenary up the satisfaction/loyalty curve. When customers leave the “defection zone”, satisfaction grows, loyalty increases over-proportionally and

mercenaries turn into loyalists (Howard, 1977, 1983). Repeated customer satisfaction finally creates trust in supplier performance, pushing the customer satisfaction level even further.

The emergence of loyalty from satisfaction and trust largely depends on customers' emerging brand consciousness. According to American Marketing Association (AMA) a brand is "name, term, sign, symbol, or design, or a combination of them, intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competition" (Keller, Parameswaran, & Jacob, 2011, p. 3). Branding theory holds that customers reconnect the brand to certain inner images e.g., the understanding of quality and reliability (Keller et al., 2011). These inner representations in the customers' mind, stimulate the customer to return and to reconfirm the business relationship with the supplier.

In the B2B SPCE sector the product mark itself is not as relevant as in B2C car sales, for instance. The SPCE dealer company emerges as a brand in the sense that it stands for the promise of servicing and consulting customers on all issues concerning the piece of acquired SPCE. The dealer is the key responsible and addressee for SPCE customers and as such represents an outstanding service promise. In their role as a comprehensive service partner, the SPCE dealer establishes a certain brand image. A brand image represents the associations the customer establishes with the brand and the products (Spiegel, 2001). As carrier of the brand image, the SPCE dealer bundles customer associations concerning SPCE in the dealer company. Cognitive affective and conative behavioural reactions of the customer target at the SPCE dealer who is personalised as the representative of the machinery the customer operates (Aaker & Fournier, 1995). As a representative of the SPCE mark, the dealer is the customer's focal point and takes an important role in the establishment of a product related brand consciousness in the customer (Sommer, 1998). Even if a SPCE manufacturer is not a global market leader, customers can be convinced of that brand by a well-established and performing dealer, since a dealer represents the promise that the performance of the equipment fulfils or exceeds expectations. For the customer, personality attributes, which customers frequently attribute to brands are personalised in the

SPCE dealer Aaker and Fournier (1995). If the customer experienced the dealer as trust-worthy and cooperative, they are likely to assign the same attributes to the machinery as to the dealer's services. The SPCE dealer takes a key position as a brand representative.

To recap, in the SPCE sector customer trust and satisfaction usually lead to customer loyalty, since the customer experiences the dealer as a stable and competent addressee concerning his SPCE issues.

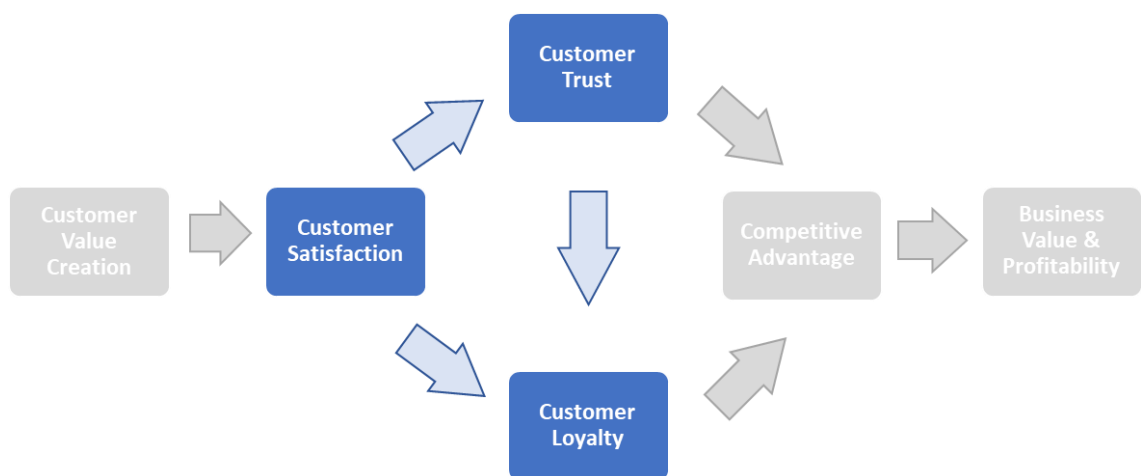


Figure 16: From Satisfaction and Trust to Customer Loyalty

2.3.5 From Customer Trust and Loyalty to Competitive Advantage and Business Value and Profitability

According to the customer value chain sketched in Figure 9, customer trust and loyalty can lead to competitive advantage. Figure 17 highlights this aspect:

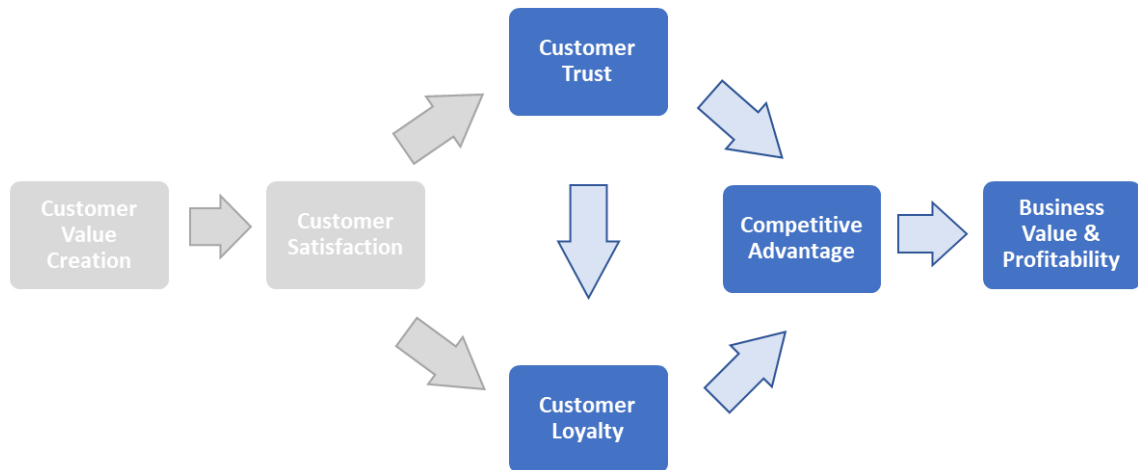


Figure 17: From Customer Trust and Loyalty to Competitive Advantage and Business Value and Profitability

Intensifying competition through globalisation, make companies increasingly dependent on delivering satisfaction to their customers. The growth of international markets has empowered customers to choose their suppliers from a broader base than ever before, and electronic information and communication media enable customers to get informed on alternatives comprehensively (Porter, 2008). The product itself has lost in importance as a stand-alone attribute for providers since a broad variety of supply sources are available to customers through the internet.

To keep customers and attract new ones, companies increasingly depend on their relationship with its customers (Sjödín et al., 2016). Personal bonds are essential for keeping customers involved, although they could possibly acquire the same good cheaper and even more conveniently from other sources (Helmke, Uebel, & Dangelmaier, 2008). Increasingly, companies have to understand that they need to rely on their own inner resources i.e., knowledge, competences and organisational processes, rather than on a generally available set of products and environment conditions, in order to remain competitive, that is remaining in contact with their customers (Smith & Flanagan, 2006).

Barney (1991) explains that the major sources of competitive advantage are inner resources, particularly value, rareness, in-imitability and in-substitutability. While external resources are increasingly opened up by international competitors – even

more true with the influence of the internet – inner resources remain in the personal ownership of the company and can be developed self-reliantly. These inner strengths can form an entry barrier to other market participants and equally enable the company to realise price premia above the general market level (Barney & Hoskisson, 1990).

The customer base is among a company's major inner strategic resources (Perks & Easton, 2000), and for SPCE dealers perhaps is the most important one. Satisfied and trusting customers are expected to be loyal to the company i.e., keeping in touch and using corporate services even in the post-purchase phase.

Customer loyalty means a competitive advantage since loyal trusting customers are less likely to buy from competitors. There is extensive support for this proposition in previous literature³. Customer loyalty and trust are meaningful indicators of business success (Curtis et al., 2011; Nyadzayo & Khajehzadeh, 2016) and crucial to business growth and survival (Kuo et al., 2009; Skarneas et al., 2016). Loyal customers are less price-sensitive due to their strong bond to suppliers. Keeping loyal customers requires less marketing efforts than acquiring new ones. The management of loyal trusting customers thus is cost effective and saves marketing expenses (Curtis et al., 2011; Deng et al., 2010; Kuo et al., 2009; Lam et al., 2004; Nyadzayo & Khajehzadeh, 2016). Loyal and trusting customers value long-term supplier relationships and usually are more cooperative (Morgan & Hunt, 1994), what saves time, efforts and thus transaction cost for both parties (Curtis et al., 2011; Yang & Peterson, 2004). Business profitability and competitiveness benefit from stable, long-term customer relationships (Lam et al., 2004). Therefore, developing and maintaining customer loyalty and trust is an essential marketing objective in research (Dick & Basu, 1994; Morgan & Hunt, 1994) and business practice (Zeithaml & Bitner, 2000).

Competitive positioning in business is usually measured in terms of market share or financial indicators. Szwajca (2016) suggests customer loyalty as an additional

³ (Dick & Basu, 1994; Hennig-Thurau & Hansen, 2013; Kabiraj & Shanmugan, 2011; Sasser, Schlesinger, & Heskett, 1997; Woodruff, 1997; Zeithaml, Lemon, & Rust, 2001)

qualitative competitive position indicator. This idea finds support in literature. Based on more than hundred private consultation studies, Reichheld (1993) finds that business profits increase significantly with an increase of customer retention rates. Other authors find that customer loyalty positively influences revenue growth, customer retention, return on investment, market share, price elasticity or brand equity. In turn, it has a negative influence on customer acquisition cost and the cost of stimulating repetitive purchases (Curtis et al., 2011; Deng et al., 2010; Kabiraj & Shanmugan, 2011; Kuo et al., 2009; Lam et al., 2004; Nyadzayo & Khajehzadeh, 2016). Businesses disposing of a loyal customer base are likely to be more profitable than competitors dispensing it (Hennig-Thurau & Hansen, 2013; Morgan & Hunt, 1994; Ravald & Grönroos, 1996). To sum up, customer loyalty positively impacts business competitiveness and profitability.

SPCE dealers define their market position by their customer base. They depend on the close and usually long-lasting cooperation with mainly established customers. Since SPCE requires regular service, their customer portfolio is usually located within regional proximity. The range of potential customers for a SPCE dealer is limited since SPCE is required by specialised companies in the construction, recycling and mining sector mainly and the number of companies in the market is limited and expected to shrink (refer to 1.1) and dealers have to refer back to this customer portfolio (Aurich & Clement, 2010). To succeed, SPCE dealers strongly depend on the loyalty of these customers and satisfying customer encounters i.e., high customer value is preconditional to a dealer's sustainable business development. SPCE companies must satisfy their customers to keep their business running and not lose customers to competing dealers in the long run (Scheid & Scherer, 2019). In the SPCE sector, customers are an idiosyncratic inner asset for SPCE dealers rather than a globally fluctuating external resource. The reliable collaboration with established customers is the business base for dealers in the SPCE segment (Aurich & Clement, 2010).

On the other hand, SPCE customers equally depend on local dealers. Dealers are the foremost and frequently only addressee for customers with regard to the technical application, maintenance and repair of SPCE of a specific brand. Dealers are

competence centres concerning new acquisitions and machinery service. SPCE usually are serviced locally. Due to limited maximum speeds or lacking general road approval and high transportation costs, customers require capable regional service partners who ideally do service and repair work on site. The range of available SPCE dealers in result is restricted (Müller, 1996). For customers, the change of the service partner usually would entail a change of the SPCE fleet, which due to high investment costs usually is not feasible on short notice. Equally, SPCE customers thus depend on the trusting cooperation with their local dealer.

To recap section 2.3, repeated positive customer value perceptions can create customer satisfaction, trust and loyalty. These factors determine a business's competitive advantage, value creation and profitability. The analysis of the relationship of customer satisfaction and customer loyalty reflects that trust has a positive catalysing effect on customer loyalty and is a more sustainable basis for loyalty than material switching barriers or lacking alternatives (Curtis et al., 2011).

2.3.6 Contribution of Analysis of the Customer Value Chain to Research Aim and RQs

Section 2.3 has examined RQ2 ("How far does customers' value perception lead to customer satisfaction, trust and loyalty in the SPCE business? ", and RQ3 ("How far do customer trust and loyalty create competitive advantage and business value/profitability in the SPCE business?") of this study, in so far as possible from previous literature, which unfortunately is only partially specific to the SPCE sector.

Subsection 2.3.1 to 2.3.4 focus on RQ2 and have outlined how customer satisfaction, trust and loyalty emerge from repeated and reconfirmed customer value perception. Customers whose demands are reliably met tend to trust this experience will be repeated according to the confirmation-disconfirmation paradigm of Parasuraman et al. (1988). Trusting customers have the tendency to turn into loyal advocates of "their" supplier. They are more reluctant to try out competitors and likely to recommend the

proven supplier based on their own positive experience (Kuo et al., 2009; Skarmeas et al., 2016).

Subsection 2.3.5 has looked into RQ3 and evaluated how customer trust and loyalty can turn into a competitive advantage for the provider. Satisfied, trusting and loyal customers tend to return for repeat purchases and place service orders with the supplier, often recommending the business to peers, thereby creating additional satisfied customers and incremental revenues. As compared to less established competitors and new entrants a well-established company with a trustful customer base is likely to realise higher turnovers and finally can charge higher prices for superior performance, which means a true competitive advantage.

By defining the path from customer value creation to competitive advantage in the form of a general model, derived from existing literature, section 2.3 of the study has accomplished an important stepping-stone of the research objective of analysing sources of competitive advantage in the SPCE industry. Further industry specific research, however, is required to fully accomplish the research aim.

Given the anticipatory character of the study, looking at *future* sources of competitive advantage, the following section 2.4 deals with the anticipation of customer value.

2.4 Customer Value Anticipation

The concept of customer value anticipation deals with the predictions of changes in customers' value perception (Blocker et al., 2011). The following section introduces the concept and discusses its impact on competitiveness.

2.4.1 The Concept of Customer Value Anticipation

Based on the understanding of the customer value chain guiding customers from usage to satisfaction, trust and loyalty, section 2.4 develops an understanding useful for SPCE dealers to adjust their future strategy so that they can maximise future customer value, which is fundamental for optimising business value creation.

In a competitive and dynamic, non-monopolistic market environment, even businesses enjoying competitive advantages have to develop and defend their unique position against rivals continuously (Andadari et al., 2016; Flint et al., 2011; Flint et al., 2002; Ho et al., 2014; Kandampully & Duddy, 1999; Porter, 2008; Slater, 1997; Slater et al., 2010). Companies have to constantly invest in the development of innovative and unique value propositions to keep their advantageous market position while generating above-average profits (Day & Moorman, 2010; Kandampully & Duddy, 1999; McGrath & Gourlay, 2013).

The steady development and change of customer requirements and desires is fuelled by changes in the external environment, politics, economy, social and technological change. Further, individual customer circumstances, such as financial capabilities, can initiate a change in demand (Flint et al., 2011; Flint et al., 2002; Gassenheimer, Houston, & Davis, 1998). The economic uncertainties caused by the current Covid-19 pandemic crisis, for example, led to a tendency amongst SPCE customers to shift their equipment-demand from owning to renting. The intention is to control their liquidity and prepare for eventual economic shocks (Stellmach, 2021). Suppliers must monitor changes in customer preferences and respond by adjusting their value propositions.

“Behaving in an anticipatory way means adjusting present behaviour in order to address future problems. In other words, an anticipatory entity takes its decisions in the present according to forecasts about something that may eventually happen” (Poli, 2010, p. 2). Customer value anticipation seeks to predict how customer value perception will change and evolve (Blocker et al., 2011). According to Flint et al. (2011), customer value anticipation is the ability to foresee what particular customer

segments will value concerning the relationship with the supplier in future. It includes the development of product and service offers and the analysis of the profitability of this adaptation (Flint et al., 2011). Products and service strategies have to be designed so that future customer value is sustainably maximised.

2.4.2 Impact of Customer Value Anticipation

Anticipating customer value changes is desirable for companies (Andadari et al., 2016). A unique customer value position contributes to competitive advantage and enables businesses to enhance profitability. To keep up to changes in customer value, suppliers are advised to anticipate future customer expectations and demands. Lemon, White, and Winer (2002) believe that customers take future considerations into account in today's decision-making. This implies that customers prefer suppliers that anticipate what they will value in future and approximate customers' expectations possibly well (Flint et al., 2011). Innovative suppliers excel in their prediction of future market trends and adopt this anticipation as their core strategic approach. This form of customer value anticipation can generate customer satisfaction, trust and finally loyalty (Blocker et al., 2011; Grönroos, 2008). Ghifari and Halim (2018), Blocker et al. (2011) and Flint et al. (2011) find a strong relationship between businesses' ability of value anticipation and customer satisfaction as well as customer loyalty.

Kandampully and Duddy (1999), Zhang, Liang, and Wang (2016) , Ho et al. (2014) and Rufenacht, Steiner, Schlager, and Maas (2014b) confirm the positive impact of customer value orientation on loyalty and business competitiveness. According to Kandampully and Duddy (1999), competitive positioning is a combination of the ability to correspond to present customer needs and to anticipate future trends. Thinking ahead can put and maintain businesses in a leading market position. According to Pilzer (1990), the anticipation of future market trends and their implementation in innovative products is more important than the satisfaction of existing requirements, since innovations promise first-mover advantages, extraordinary profits, unique experience and expertise. Also, Narver, Slater, and MacLachlan (2004) find that an

anticipative strategy of guiding customers towards new future trends is more promising than just responding to existing demands. Flint et al. (2011) and Woodruff (1997) argue that anticipating companies benefit from shorter product-to-market lead times than conservative competitors. Additionally, customer value anticipation enables businesses to build up entry barriers to newly established markets (Hill, Schilling, & Jones, 2016).

According to psychological research, customers trust in a company's ability to anticipate their future needs earlier and more accurately than they themselves (Blocker et al., 2011; Flint et al., 2011). They value this competence as a unique characteristic. Customers are ready to enter into a close, unique and hard-to-imitate relationships with such suppliers, while a lack of anticipative competence can lead to dissatisfaction and a termination of the business relationship. Blocker et al. (2011) and Kandampully and Duddy (1999) confirm that customers distinguish between suppliers that just respond to existing needs and businesses that anticipate and proactively offer solutions to upcoming customer needs. Businesses' anticipation competencies put customers themselves in a leading position and thus are a source of value generation for suppliers (Flint et al., 2011; Kandampully & Duddy, 1999; Slater et al., 2010).

Concluding, the described effects of customer value anticipation are summarised in a comprehensive chart:

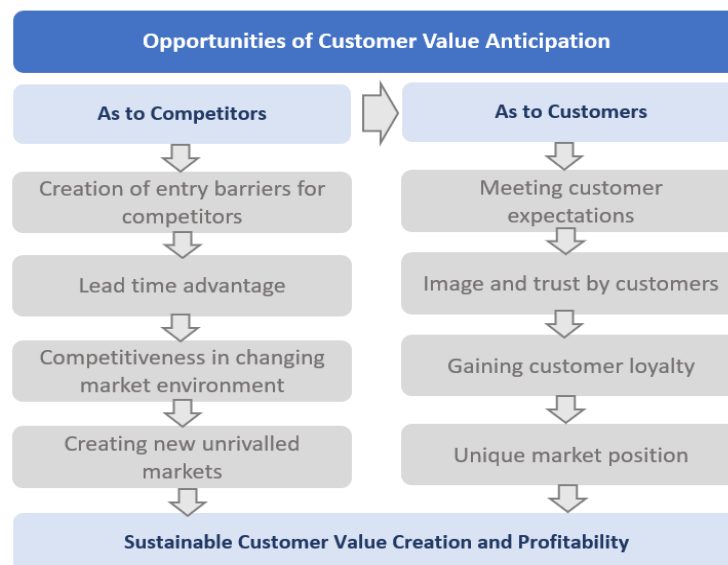


Figure 18: Opportunities of Customer Value Anticipation

Anticipating customer value is advantageous concerning the management of competitive threats and the fulfilment of customers' value expectations. Innovative companies create market barriers for tardy competitors and realise time to market advantages for innovations. In a changing market environment, an anticipative strategy promises sustainable competitiveness and enables businesses to create new unrivalled markets. Customer expectations concerning the creation of new products can be met, what enhances businesses' image with customers. Customers develop trust and loyalty towards future-oriented businesses, which puts these in a unique market positioning (Ghifari & Halim, 2018). Customer value anticipation can create sustainable customer value and ensures businesses' future competitiveness and profitability.

2.4.3 Contribution of Analysis of Customer Value Anticipation to Research Aim and RQs

Section 2.4 has contributed to answer RQ 4 "Which factors will contribute to customer value creation in the SPCE business in future?" The paragraph has shown that customer value anticipation can create future customer value, customer satisfaction and customer loyalty and that it is a powerful source of competitive advantage.

Section 2.4 has thus closed the loop from present customer value creation on competitive advantage to the necessity of anticipating customer value for the future in order to maintain this advantageous positioning. This insight contributes to accomplish the aim of the study of analysing future sources of competitive advantage in the German SPCE industry in order to support dealers with the adjustment of their businesses to emerging market trends and customer demands.

It has been shown that the anticipation of future customer value expectations and early fulfilment of these upcoming expectations enables companies to maintain a leading market position. The empirical section of this study has to further differentiate

this intermediate result for the SPCE sector, since unfortunately no previous research is available in this business field.

2.5 Conclusions from the Review

In the following sections, the findings from the literature review are summarised and a research framework is derived from it.

2.5.1 A Review-Based Research Framework

Summarising the major points of the review, the following insights have been gained:

The review has shown that competitive advantage originates from customer value, and is based on customer satisfaction, which contributes to customer trust and finally customer loyalty. Concepts of competitive advantage from the 1980s and 1990s assumed that competitive advantage is stable and lasting. In today's more dynamic business reality, however, this strategy seems outdated. Digitalisation and globalisation have created hypercompetitive markets in which the speed of change and innovation has accelerated dramatically. Businesses are in demand to constantly strive for new competitive advantage positions. The capability to develop fast and continuously has thus become the modern version of competitive advantage. An anticipatory business culture that continuously foresees the emergence of customer needs and quickly develops corresponding customer value delivery strategies is required in that context.

The review has developed the understanding that competitive advantage emerges from customer value anticipation in a cause-and-effect chain (Figure 9). Customers value when their suppliers anticipate their future desires (Flint et al., 2011; Kandampully & Duddy, 1999). Businesses are in demand to make customer value-anticipation part of their strategic orientation and business culture. By cooperating with customers, businesses can build a sustainable leading market position (Ho et al.,

2014). Trust is a crucial element in the customer value chain. Trusting customers value a supplier's competence to understand and address their future challenges, needs and goals, earlier than competitors. Trust can increase customer switching barriers and enhance customer loyalty. A loyal customer base can allow to reduce marketing cost and increase business profitability and long-term competitiveness.

The conceptual research model in Figure 19 represents the outflow of the review insights. It maps the discovered major concepts, interrelations and process flows.

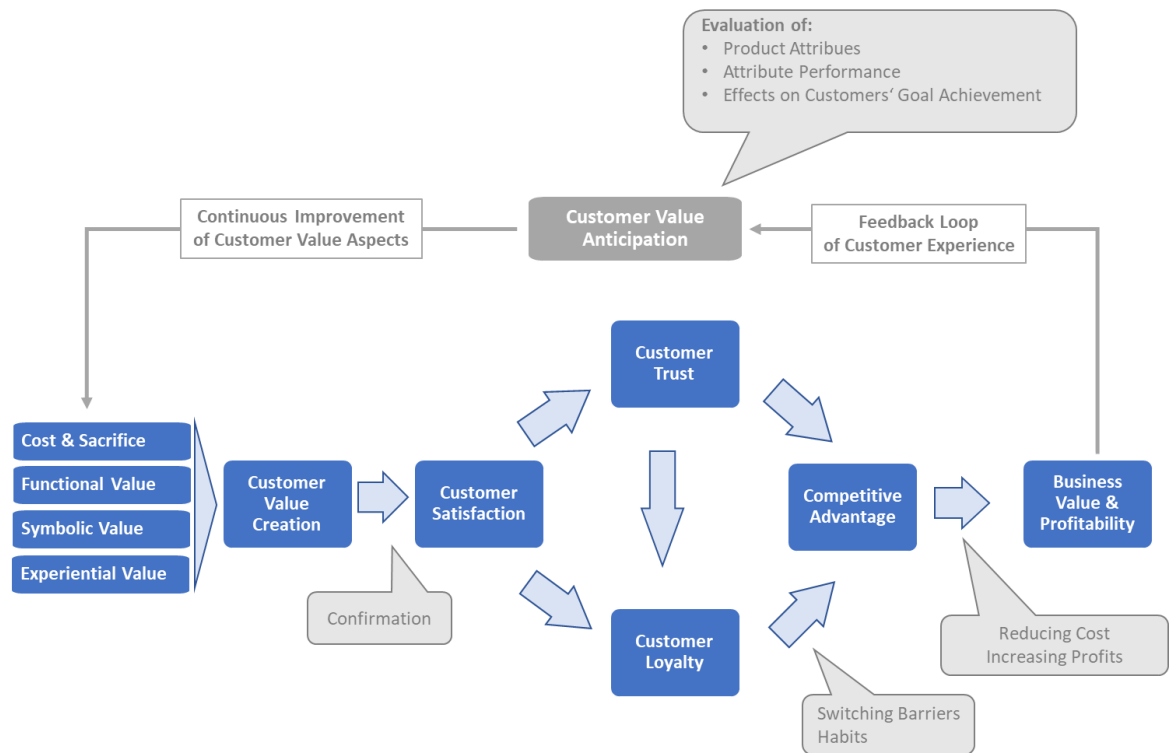


Figure 19: Conceptual Research Model

The model is based on the customer value creation chain as derived in section 2.3 (Figure 9) and includes the dimensions of customer value identified by Smith and Colgate (2007), precisely: Functional, symbolic, experiential value and the cost sacrifice aspect (for details refer to Figure 8 in section 2.2).

Customer value anticipation (refer to section 2.4) endows this value chain with a feedback loop and thus is the major driver of the customer value chain accessible to

the supplier. Based on the understanding of future customer expectations, businesses evaluate product attributes, attribute performance and their effect on customers' future goal achievement (Schuhmacher & Kuester, 2012). Customer value anticipation thus can enable businesses to launch and maintain a continuous improvement process concerning their customer value generation strategy. This process can continuously renew the customer value chain i.e., establishing customer satisfaction by the confirmation of customer expectations. Repeated confirmation supports the establishment of customer trust and loyalty. Both enable the establishment of switching barriers and the creation of customer habits. These support competitive advantage creation by reducing cost and increasing profitability. When businesses reevaluate customer expectations a new cycle starts, leading businesses from value anticipation to future value creation and competitive advantage. This way, businesses continuously reinvent their competitive advantage in a dynamically evolving, self-enforcing environment.

2.5.2 Identified Limitations in Reviewed Literature

Although the need for customer value anticipation is obvious from available literature, knowledge about the practical implementation of this ideal is rare and superficial. Most available sources refer to customer value anticipation in an abstract and theoretical manner. They lack concrete advice how to anticipate customer value in practice.

Flint et al. (2011), for instance, openly state that their work explicitly excludes the processes that enable firms to anticipate what customers will value. Ho et al. (2014) propose customer value anticipation directions. Based on the work of Madhavaram and Hunt (2008), they suggest combining organisational resources and transform them into dynamic business capabilities. But this advice to anticipate customer value requirements remains superficial, lacking clear guidance for practitioners. Ho et al. (2014) themselves admit that discussing methods to anticipate customer value or transferring value to customers is not in the focus of their analysis and acknowledge

that further research is needed to enable practitioners to better understand ways to anticipate customer value.

Correspondingly, Andadari et al. (2016), Blocker et al. (2011) and Narver et al. (2004) complain the paucity of research in customer value anticipation techniques. Rüfenacht, Steiner, Schlager, and Maas (2014a) find that neither its theoretical conceptualization nor its practical implementation has been unambiguously defined.

Research in the practical opportunities of anticipating customer value are significantly underdeveloped. More research that examines methods to anticipate changes in customer value expectations is necessary (Flint et al., 2011). Accordingly, the contribution of previous academic research to customer value anticipation in practice is limited, but useful as a theoretical underpinning of further empirical analyses.

2.5.3 Concretisation of Empirical Research Aim Based on the Review Results

The study's aim is to analyse future sources of competitive advantage in the German SPCE industry in order to support dealers with the adjustment of their businesses to emerging market trends and customer demands.

The literature review has to some extent advanced this aim, but several important points remain for further analysis in an own empirical study. To clarify this point, the achievements of the review regarding the initially formulated research questions are summarised and open issues are explained in the following.

RQ1: Which aspects of customer value creation are relevant to customers in the SPCE business?

Section 2.2.1 has come to a definition of customer value and has found that customer value results from the use of a product which is perceived valuable according to customers' perception (Parasuraman (1997)). Customer value develops from product attributes, attribute performance and the benefits resulting from these attributes

(Woodruff, 1997). Section 2.2.2 has developed a classification of customer value peculiarities and drawing on Smith and Colgate (2007) has found the categories functional, symbolic, cost/sacrifice and experiential value relevant. These review-based results, however, are of general relevance but so far lack concrete reference to the SPCE business. Since no earlier analysis for the SPCE sector is available, the subject-specific meaning and comparative relevance of the identified customer value categories for the SPCE sector is still unknown.

RQ2: How far does customers' value perception lead to customer satisfaction, trust and loyalty in the SPCE business?

The review section 2.3 has in detail assessed the process of how customer value perception evolves and what its impacts with the customer are. The identified cause-and-effect-chain leads customers from value perception to satisfaction. Repeatedly satisfied customers tend to trust, that this experience will repeat and often remain loyal to the provider to refresh this experience. Loyal customers buy products more than once and return for service and repair jobs (Parvatiyar & Sheth, 2001; Zentes & Swoboda, 2001). Trusting customers recommend the provider to peers and the positive experience of satisfaction and trust repeats with novel clients (Goddard et al., 2012).

The process of emergence and reinforcement of customer value perception has thus been detailed in the course of the review and a plausible cause-and effect chain of customer value creation results. However, to date concrete insights on the evolution of that process in the SPCE sector are missing, which requires further empirical analysis in the field.

RQ3: How far do customer trust and loyalty create competitive advantage and business value/profitability in the SPCE business?

Section 2.3.5 has detailed how satisfactory, trusting and loyal customer relationships can result in competitive advantage for the provider. Satisfied and trusting customers tend to return to “their” provider. They are likely to purchase with the provider repeatedly and order service and repair works. The provider enjoys continuous revenues from stable customer relationships which are a solid basis for his/her business (Helmke et al., 2008). Recommendations of satisfied customers support the generation of new customer contacts which promise additional turnovers from sales and service jobs. The image of reliability and seriousness brings suppliers competitive advantage on other companies and on potential new market entrants, since established customers usually trust in their provider and are more reluctant to try new companies (Barney & Hoskisson, 1990).

The continuity of harmonious business relationships is the basis for any business. The review, however, has not provided any information on the impact of customer trust and loyalty on competitive advantage generation in the SPCE sector. Further research has to be done to clarify this effect.

RQ4: Which factors will contribute to customer value creation in the SPCE business in future?

Section 2.4 has shown that competitive advantage – although based on stable long-run customer relationships – is no guarantee for continued market success. Today, the SPCE market changes dynamically and has become much more flexible. Companies are continuously challenged by new products and market entrants. To keep their market advantage, dealers are advised to adapt to changing customer requirements and desires. They increasingly should anticipate emerging trends in order to put themselves in a leading first-mover position (Day & Moorman, 2010; Kandampully & Duddy, 1999; McGrath & Gourlay, 2013). The anticipation of what will make out customer value in future e.g., by observing evolving customer needs and upcoming trends diligently, is essential to maintain existing customers and acquire new ones. To answer to this necessity, a customer value anticipation exercise for the SPCE industry

in Germany needs to be conducted, which is carried out in the empirical part of this study (from section 4 onwards).

Based on the review, a comprehensive model of the cause-and-effect chain of customer value creation shines up (Figure 19). Based on the perception of customer value, customer satisfaction starts to develop. Customer satisfaction turns into customer trust and loyalty. Loyal customers are likely to return for business and to engage into lasting relationships with their suppliers. Such stable customer relationships represent a competitive advantage for the supplier. Customers that are deeply engaged with their supplier and who value its contribution to their business, are loyal and usually ready to pay a price premium. This allows suppliers to realise higher profits than competitors and maximise their returns (Kumar & Reinartz, 2016). This contributes to business value and profitability. Customer value anticipation (refer to 2.4) ensures continuous adjustment of the supplier value proposition to future customer needs. Thus, it drives competitive advantage sustainability what makes it the major driver of the customer value chain accessible to the supplier. The following Figure 20 fits the research questions into this model.

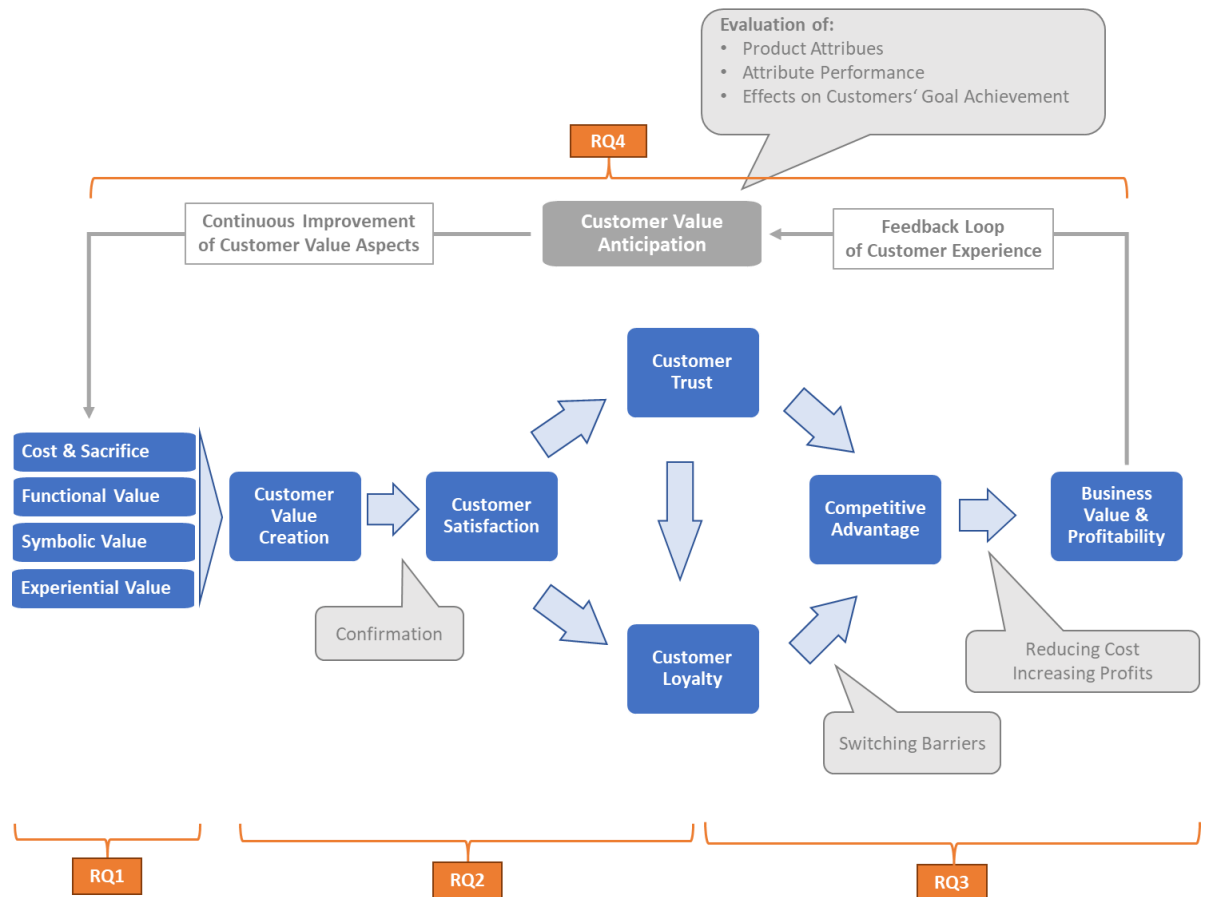


Figure 20: Research Model and Contingent Research Questions of the Empirical Part

According to the observations of section 2.4 strategies of customer value anticipation should be useful to enhance customer value and generate sustainable future competitive advantage. However, further research of how customer value anticipation can be implemented in the SPCE sector is necessary, since the retrieved sources are very general.

Essentially, the empirical part of the study has to concretise the model and answer the research questions for the SPCE sector. This empirical study thus makes major contributions to previous research in the impact of customer value creation and anticipation on competitive advantage.

To accomplish the research aim (refer to 1.4), a thorough, methodological research approach is required. This is developed in the following Chapter 3

3 Empirical Research Philosophy and Method

Academic research has to define procedures and techniques employed to collect, generate, process and analyse the data, required to answer research questions (Kothari, 2004). The empirical research design has to demonstrate its suitability for accomplishing the research aim and answering the research questions (Bryman & Bell, 2015; Creswell & Creswell, 2017).

Chapter 3 develops and discusses the chosen research design, which includes the discussion of the philosophical standpoint (section 3.1), research strategy (section 3.2), sampling approach (section 3.3), data collection (section 3.4) and data analysis (section 3.5), and links them to the research aim (Opoku, Ahmed, & Akotia, 2016). Generalisability, validity and reliability as well as possible weaknesses and limitations of the developed methodology are assessed (section 3.1.5). Ethical measures to ensure compliance with the University of Gloucestershire's Research Ethics principles are discussed (section 3.4.3).

3.1 Philosophical Underpinning and Conceptualisation as a Case Study

Section 3.1 classifies the study in the context of constructivist phenomenology and chooses a case study methodology as research design.

3.1.1 Interdependence of Ontology, Epistemology and Research Methodology

Research philosophies or paradigms differ in their underlying belief systems, values, opinions and attitudes (Moses & Knutsen, 2012). Kuhn (1962, p. 62) defines paradigms as "a set of common beliefs and agreements shared between scientists about how problems should be understood and addressed." Paradigms determine how researchers see the nature of reality (ontology), how they inquire into the nature of the world (epistemology) and which tools are employed to understand that reality

(methodology) (Guba & Lincoln, 1994; Saunders, Lewis, & Thornhill, 2009). Paradigms define the characteristics of a research project, such as language, mode of inquiry or analysis approach (Bryman & Bell, 2015). The philosophical standpoint determines researchers' world views, applied methodology and nature of research outcome.

A research paradigm is defined by the three fundamental perspectives on ontology, epistemology and methodology (Guba & Lincoln, 1994).

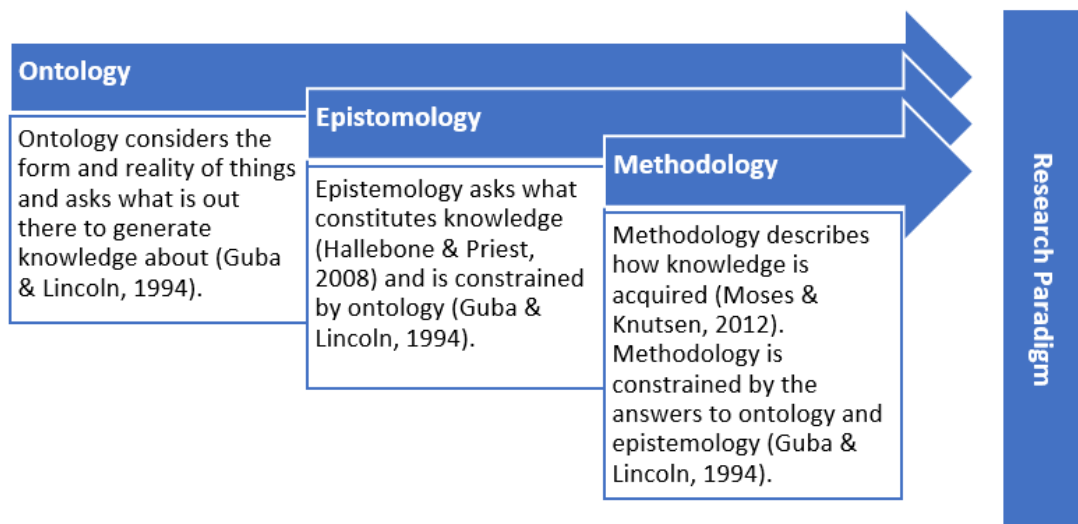


Figure 21: Implications of Ontology, Epistemology and Methodology for Research Design

Ontology, epistemology and methodology are determinants of a study's paradigm and have to be chosen progressively since one builds on the other (Guba & Lincoln, 1994) (Figure 21).

3.1.2 Ontological Positioning in Phenomenology

Positivism and phenomenology are the major two opposing philosophical research directions. Here a phenomenological internal realist research paradigm is selected, for the reasons explained in the following.

Positivism is based on the ontological assumption that the world is concrete, static and external to the observer. (Bryman & Bell, 2015; Creswell & Creswell, 2017). Positivism

aims at the development of laws by testing theories mathematically or statistically (Bryman & Bell, 2015; Creswell & Creswell, 2017). Positivistic studies assess correlations of variables and causalities (Liu & Liu, 1997). External influences are controlled to prevent dilution of findings (Moses & Knutsen, 2012). The methodologies of positivism are quantitative data collection and statistical analysis to verify hypotheses. Positivism attempts to unveil a universal or generalisable truth (Bryman & Bell, 2015). Easterby-Smith, Thorpe, and Jackson (2015) classify this ontological standpoint as realist or modernist. Both assume that observable facts are directly accessible by science (Eysteinson, 2018).

A positivist standpoint is inadequate to the issue of this research project. Positivism does not address the exploratory nature of the research aim of this study, since the examination explores a phenomenon for which only fragmented prior theory or causal link are available. The positivist approach is therefore not appropriate. Particularly the analysis of competitive advantage resulting from customer value anticipation is no issue adequate for a positivistic perspective, since value perceptions and competitive advantage are concepts of an individual, context-bound, subjective qualitative nature (Goodwin & Ball, 1999). They cannot be measured on an unequivocal mathematical scale.

Phenomenology reflects on the shortcomings of positivism and incorporates that the structures of the human mind determine our perception and understanding of reality (Detmer, 2013). Human perception, experience and reflection work as a filter to incoming environment information and select and partly change data according to prior expectations or simply based on the limited capability to perceive and understand. The result is that our brain does not reliably reconstruct reality, as positivism suggests, but delivers an incomplete and biased image of the reality. A “real world” is basically existent but not perceivable or understandable at first sight (Stewart & Mickunas, 1990). To compensate for this effect, academic research is required to look behind observed phenomena and profoundly analyse different representations of perceived reality in order to thoroughly reconstruct the true structure of facts (Moran, 2002).

Phenomenology differentiates between an inductive and a deductive research approach (Paredes, 2010). The deductive research starts from one or several existing theories about reality and questions and explores their validity based on own empirical analysis (Mayoh & Onwuegbuzie, 2015). The deductive approach is not apt for this empirical study, since previous customer value anticipation research in the SPCE sector and more specifically SPCE dealers is unavailable. Thus, an own research theory has to be constructed based on initial research. Inductive research is apt for this purpose. It sets off from own empirical observation and attempts to build up an own understanding of the world based on own data.

Inductive phenomenology is based on the ontological position that reality is socially constructed (Bryman & Bell, 2015; Saunders et al., 2009). Consequently, reality is not understood as a static construct, but in a state of constant revision. Therefore, research should seek to understand phenomena in their social context (Moses & Knutsen, 2012).

Depending on a researcher's view on truth and facts, Easterby-Smith et al. (2015) distinguish different phenomenological positionings. Internal realist ontology assumes that an objective reality exists but finds that these facts are neither clearly visible nor directly accessible. According to relativism, many truths exist, depending on the viewpoint of the observer. Nominalism rejects the existence of any truth, arguing that all facts are the result of human imagination.

For this study, an internal realist phenomenological positioning offers itself. Customer value creation and anticipation are the result of individual human perception and reflection and therefore not visible and accessible at first sight (Goodwin & Ball, 1999). Still these phenomena are real world and thus can be discovered and analysed. Therefore, this study is undertaken from a phenomenological stance. It is "centrally concerned with the understanding of things rather than measuring them" what is the major differentiator between positivism and phenomenology (Gordon & Langmaid, 1988, p. 2). This perspective is based on the ontological belief that the reality of the

participants is socially constructed rather than objectively determined. It is local, specific, context bound and formed by the lived experiences of the participants. The study emphasises personal knowledge and subjectivity, thereby honouring personal perspectives and interpretation (Lester, 1999). The focus lies on understanding the subjective and lived experience of the individuals, for deeper understanding of their motivations. Thereby it sharply differentiates from positivistic studies. Epistemologically, the researcher and the respondents create the empirical data in an interactive process through semi-structured interviews, so that the researcher plays an active role in the data generation process (Grossoehme, 2014). In summary, this study is committed to the values and principles of phenomenology and consequently derives an according research approach from it that is further explained, refined, and argued for in the following.

3.1.3 Epistemological Positioning in Constructivism

Among the huge variety of research paradigms (Creswell & Creswell, 2017), this study chooses a constructivist perspective. The following sections explain what that means, why this choice has been made and why other paradigms have been discounted.

Phenomenology comprises several epistemological directions, which in contrast to positivism all accept subjective thoughts, feelings and experiences in the interpretation of phenomena (Easterby-Smith et al., 2015; Towers, Abushaikha, Ritchie, & Holter, 2020). The phenomenological perspective is the epistemology of choice for this study, since here socially constructed realities exploring human perception, experience and expectations are assessed. Positivism anchored paradigms are consequently excluded from the following selection process.

All phenomenological perspectives share the ontological assumption that truth is manifold and facts are socially constructed (Moses & Knutsen, 2012). Research undertaken under the phenomenological paradigm seeks to understand and explain

them using an empiric epistemology. Phenomenological methodologies are usually of a qualitative nature (Bryman & Bell, 2015).

The most common phenomenological paradigms are constructivism, interpretivism, post-positivism and post-modernism. To find the choice of a phenomenological approach, Table 4 summarises the major phenomenological standpoints and contrasts the positivistic perspective.

	POSITIVISM		PHENEMOENOLOGICAL			
Item	Positivism	Modernism	Constructivism (chosen here)	Interpretivism	Post Positivism	Post Modernism
Ontology	Naïve realism – ‘real’ reality but apprehensible	Rational rule-based set of beliefs	Relativism – context bound, socially constructed realities, multiple truths	Reality is mind-dependent dualistic	Critical realism – ‘real’ reality but only imperfectly apprehensible	Historical realism – virtual reality shaped by social, political, cultural, economic, ethnic values
Epistemology	Dualist/ objectivist; findings true	Science as ultimate source for all true knowledge	Empiricism, Knowledge is indeterminate	Social science based; meanings placed within a context, value relevance, empathetic	Modified dualist/ objectivist, critical tradition/ community; findings probably true	Transactional/ subjectivist; value – mediated findings
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Scientific knowledge of the world and rational knowledge of value	Hermeneutics, qualitative methods, active engagement of researcher, understanding of meaning and explanation of phenomena	Hermeneutic process with no absolute beginning and end points. Context- bound, qualitative	Modified experimental. Manipulative; critical multiplism; falsification of hypotheses; mainly qualitative methods	Dialogic/ Dialectical

Table 4: Basic Beliefs of Alternative Inquiry Paradigms. Adapted from Guba and Lincoln (1994)

Starting from the right end of the table, the *post-modernist* paradigm, sees reality as apprehensible and influenced by social, economic, political, cultural and ethnic aspects. The researcher’s values influence research process and outcomes (Saunders et al., 2009). This perspective offers itself for historical and social issues.

The *Post Positivism* Paradigm assumes an external objective reality that is imperfectly apprehensible. Objectivity is seen as a regulatory ideal. The methodological approach

is hypotheses falsification. Qualitative methods are the preferred approach for the collection of data. A post positivist paradigm is inadequate here, since preliminary hypotheses do not exist.

Interpretivism attempts to gain in-depth insight into individual meanings and motives behind human behaviour. It emphasises empathetic understanding. Reality is perceived as mind-dependent. Knowledge is context bound and value-dependent. “To understand a particular action an understanding of its context is required, and understanding the context requires an understanding of the particular actions” (Smith, 1983, p. 12). Interpretivism aims at multiple, complex understandings through applying qualitative methods, without a clear beginning or end point. Interpretivism offers itself for psychological studies.

The *constructivism* paradigm is anchored in realist ontology, which sees truth as existent but its interpretation as context bound, socially constructed and multiple (Easterby-Smith et al., 2015). Individual, subjective experiences, observations, feelings and senses are the preferred source of human knowledge. Data is collected through qualitative methods that foster understanding of meaning and explanations of phenomena. The researcher is actively engaged with the study participants in the research context (Creswell & Creswell, 2017). It is suitable in a marketing context, where research should participate and observe sentiments but also attempt to discover the psychological processes and reasons behind these phenomena. This ontological perspective best addresses the research aim of analysing future sources of competitive advantage in the German SPCE industry, for which individual human perception and reflection on perceived customer value need to be assessed. This study is thus committed to a constructivist epistemological positioning.

3.1.4 Choice of a Qualitative Case Study Research Methodology

A research methodology is the systematic approach of data collection and analysis, and uses defined tools and procedures (Creswell & Creswell, 2017; Mackenzie & Knipe,

2006). It is the “general plan of how the researcher will go about answering the research questions” (Saunders et al., 2009, p. 90).

As detailed in section 3.1.1, the choices of ontology and epistemology determine the selection of study methodology (Guba & Lincoln, 1994) (Figure 21). An epistemological positioning in the field of phenomenology invites a qualitative research approach (Bryman & Bell, 2015).

Authors such as Benbasat (1984); Creswell and Creswell (2017); Moses and Knutsen (2012) see research questions as key determinants of a study’s research methodology. Also, for Yin (2017), the formulation of the research question is an indicator of the appropriateness of the research methodology. This study has developed the research questions in section 2.5.3 based on the research model which has emanated from the review of previous studies in Chapter 2.

Yin (2017) provides a comprehensive framework for the identification of an appropriate research methodology.

Table 5 indicates the selection of the research method according to the framework of Yin, by marking fitting framework items in green and non-fitting items in red. The final choice is a case study approach, which fits to the questions concerning all criteria. This process is explained in the following.

Method	Form of Research Question	Underlying Ontology	Underlying Epistemology	Requires control of behavioural events?	Focuses on contemporary events?
Experiment	How, Why?	Relativism	Empiricism	Yes	Yes
Survey	Who, What, Where, How many, How much?	Realism	Rationalism	No	Yes
Archival Analysis	Who, What, Where, How many, How much?	Realism	Rationalism	No	Yes/No
Historical Analysis	How, Why?	Relativism	Empiricism	No	No
Case Study	How, Why?	Relativism	Empiricism	No	Yes

	No fit with research question nature
	Fit with research question nature

Table 5: Relevant Situations for Different Research Methods. Adopted from (Yin, 2017)

Questions containing “who”, “what”, “where”, “how many”, “how much” indicate the tendency towards a rationalist epistemology. Surveys and archival analysis are appropriate strategies to investigate into such questions. In contrast, “how” and “why” questions relate to a relativist epistemology. Case studies, exploratory experiments or historical strategies are suitable to research such questions (Yin, 2017).

The research questions applied here are “how” questions RQ2 to RQ4 directly use “how”. RQ1 uses “which”, but in fact is a “how” question since the constituents of customer value creation are not predefined but still have to be selected and possibly redetermined in the research process. Following the logic of Yin (2017) in Table 5, either a case study, experiment or historical analysis should be applied. Surveys and archival analysis should be excluded, since these refer to a rationalist epistemology, while here a phenomenological constructivist paradigm has been chosen. To make the final choice between experiment, historical analysis and case study, Yin’s questions on required control of behavioural events and focus on contemporary events have to be answered (two final columns in Table 5) (Yin, 2017).

Experiment strategy is not suitable, since research on the impact of customer value creation on competitive advantage cannot control the circumstances of phenomena emergence in a predefined laboratory environment. It can only observe study participants, individual perceptions, experiences, expectations and anticipations in a real-life context.

The analysis of the competitive advantage resulting from customer value anticipation is a contemporary event and does not involve historical analysis. Thus, the methodology of historical analysis is inadequate (Yin, 2017).

In summary, case study is the methodology of choice, as it does not require a controlled test environment and is focussed on contemporary events. The study explores how customer value anticipation creates competitive advantage in a real-life and contemporary context.

Case study research is an “empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used” (Yin, 2017, p. 45). Case studies are suitable to document practice experience and to develop new theories in that process (Benbasat, Goldstein, & Mead, 1987). The case study method can be applied in both, positivistic studies (Yin, 2017) and in phenomenological research, provided these are based on a relativist ontology (Stake, 2005). Case study is the method of choice for constructivist studies as implemented here.

Case studies offer themselves for early research stages (Roethlisberger & Lombard, 1977). They fit for "sticky, practice-based problems where the experiences of the actors are important and the context of action is critical" (Bonoma & Wong, 1985, p. 12). This study explores the impact of customer value anticipation on competitive advantage in the German SPCE business, a field hardly explored before and characterised by a paucity of proven research techniques (Andadari et al., 2016; Flint

et al., 2011; Ho et al., 2014; Narver et al., 2004). Case studies are typically “used to explore those situations in which the intervention being evaluated has no clear, single set of outcomes” (Yin, 2017, p. 51). Whilst the case itself is of secondary interest, the case study is predominantly used as a tool to expand insight into a characteristic issue (Baxter & Jack, 2008).

To sum up the results of section 3.1, the empirical study classifies in the context of phenomenology and is constructivist from an epistemological perspective. This choice is contingent with the study objective of assessing the effect of the anticipation of customer value creation on competitive advantage. The case study is an adequate research methodology since current real-life phenomena are observed using how-questions predominantly.

3.1.5 Caveats and Requirements of Case Study Design

To develop a case study design in an adequate manner, potential problems have to be controlled.

Common points of critique concerning the case study approach are:

- a) Lacking representativeness
- b) Lacking analytical generalisability
- c) Potential researcher’s subjectivity
- d) Lacking validity
- e) Lacking reliability

These concerns are addressed in the following sections to ensure that a well-fitting research strategy is applied to this study.

a) Representativeness

The case study method has been under critique for its potential lack of representativeness (Easterby-Smith et al., 2015; Flyvbjerg, 2006; Yin, 2017). “One cannot generalise on the basis of an individual case; therefore, the case study cannot contribute to scientific development” (Flyvbjerg, 2006, p. 3). This criticism seems not valid for exploratory research projects as planned here. This study is the first assessing the impact of customer value anticipation on competitive advantage in the German SPCE industry and as such constitutes the initial knowledge base. Any research findings concerning this new issue contribute to a deeper understanding of it and provide the ground for follow-up studies in the same field, that might then target the generalisation of the issue.

To foster representativeness, cases should not be chosen as individual samples but be representative for a broader class of cases in order to contribute to new knowledge in the field as a whole (Yin, 2017). Case studies can thus prevent the risk of low representativeness by choosing representative cases. To ensure case representativeness case studies should define and map the considerations motivating the choice of particular cases. Case selection and typicality is argued in section 3.3.1

b) Analytical Generalisation

Lacking analytical generalisation refers to the critique that case studies describe individual cases, which do not fit to earlier academic research or established theories. To be generalisable, case studies further have to classify in the research context. They have to link back to the theoretical underpinnings of the discipline and apply operational and proven measures of analysis, to reconnect the study to existing contexts and pave the way for future contingent research (Yin, 2017).

The design of this study meets the requirement of analytical generalisation. The key concepts customer value creation and anticipation as well as competitive advantage have been developed in a comprehensive analysis of literature in Chapter 2. The key components have been condensed to a research model (Figure 19) and the research

questions have been derived on that basis (Figure 20). The case study design is thus well anchored in existing theory, complying with the concept of analytical generalisation.

c) Researcher's Subjectivity

Researcher's subjectivity refers to the critique of researchers' possible tendentiousness, such as the unconscious preference for preconceived notions and the neglect of evidence contradicting initial positionings (Flyvbjerg, 2006). Undoubtedly, the tendency of verifying existing opinions is a fundamental human characteristic (Bacon, 1853; Flyvbjerg, 2006) and researcher subjectivity exists for every type of study (Yin, 2017).

However, researcher subjectivity according to Flyvbjerg (2006) is much more frequent in qualitative than in quantitative research and is a particular threat to case studies, leaving wide room for researchers' subjective judgement and interpretation. The quality of case study research, nevertheless, is not necessarily inferior to other methodologies. In fact, human learning is most prolific and intense, when it takes place in a real-life environment, such as a case study (Flyvbjerg, 2006). Explorative case study research can avoid researcher subjectivity when – like in this study – the gained insights are mostly new and correspond to the natural process of individual learning and pre-formed notions are not available (Baxter & Jack, 2008; Yin, 2017). Furthermore, the embedment of the research into a scientifically developed, comprehensive and sound conceptual framework prevents researcher subjectivity to pollute the study outcome.

d) Validity

In qualitative case studies, validity refers to the credibility of the design and results. Case studies are commonly criticised for a lack of validity (Flyvbjerg, 2006; Yin, 2017). To maximise validity researchers should meet the following requirements (Baxter & Jack, 2008):

- The study perspective and concept should be appropriate for the research issue:
This step was implemented in detail in section 3.1 referring to Yin's (2007) classification of research methodologies. Furthermore, the case study design was discussed with and found appropriate by two professional researchers of the University of Gloucestershire.
- Case studies should use clear and substantiated research questions:
Comprehensive, sound research questions were developed in section 2.5.3 based on the research model which has emanated from the review of previous studies in Chapter 2.
- Case studies should be based on purposeful sampling:
Section 3.3 of this study thoroughly and comprehensively determines the participants.
- To ensure validity, data should be collected and managed in a systematic manner:
Section 3.4 differentiates the approach of data collection using a systematic interview guideline and links the part questions to the research model (Figure 20).
- Validity requires correct data analysis following a pre-defined scheme, which is well anchored in the conceptual framework of the study and corresponds to its epistemological, ontological and methodological assumptions:
Data analysis methodology is developed in section 3.5, in congruence with the study's conceptual framework and its philosophical underpinnings. Additionally, the data analysis approach was found appropriate by two professional researchers at the University of Gloucestershire.

The research design complies with the validity relevant requirements of Baxter and Jack (2008) so that validity of the study is ensured.

e) Reliability

Reliability in case study research implies that the study can be repeated with the same results (Rowley, 2002). Joppe (2000, p. 1) defines reliability as “...the extent to which results are consistent over time and are an accurate representation of the total population under study” where, “the results ... can be reproduced under a similar methodology.” This meaning of reliability is not compatible with the constructivist paradigm of this study. According to constructivism, reality is context bound and socially constructed. Stenbacka (2001) holds that reliability has no relevance in qualitative research and is irrelevant to the judgement of quality of qualitative research.

Healy and Perry (2000), Lincoln (1985) and Patton (1990) on the other hand argue that reliability is generally required for qualitative research, but the concept of reliability has to be adapted to the ontology, epistemology and language of qualitative paradigms. This study for instance, accounts for context and time-bound, individual, unique, socially constructed situations and insights. Time and social constructions are not replicable but change over time. Therefore, the concept of reliability in the sense of consistency and reproducibility as defined by Rowley (2002) and Joppe (2000) is not applicable here. Still, the study is reliable in the sense of Healy and Perry (2000), Lincoln (1985) and Patton (1990): An authentic document representing the context from which it has emerged in a reliable way.

Summarising this chapter on caveats and requirements of case study design, the study complies with the requirements of representativeness, analytical generalisability, avoidance of researcher’s bias, validity and reliability in so far as these categories are applicable to case study methodology.

The following sections specify the research strategy, case selection, sampling, data collection and data analysis applied to meet the above requirements.

3.2 Research Strategy

To analyse the impact of customer value anticipation as a driving factor on the path from customer value creation to future competitive advantage, a well-fitting research strategy has to be found. This section analyses several research strategies and finds lead customer analysis a useful instrument for the research purpose.

3.2.1 Aptitude of Classical Market Research Strategies for Customer Value Anticipation

Customer value anticipation has been found a key competence driving the process of generating future competitive advantage by predicting future customer requirements. To implement the empirical study, a strategy to access future customer value preferences has to be developed. Section 3.2.1 discusses the aptitude of classical market research strategies – trend analysis, data mining and ethnographic analysis – but finds these insufficient, for evaluating the model suggested in Figure 19.

The research techniques of classical trend analysis and data mining are usually based on the evaluation of secondary data. Secondary data analysis refers to previously published information e.g., stock prices or consumption data, and evaluates these data in a novel way or brings several data sources together to come to novel information or conclusions, like regression modelling or causal inference (Johnston, 2017). Secondary data analysis is essential to become informed on any subject issue in a profound way at all. Thorough research of previously found data and relationships is preconditional to any novel research. Particularly, when a certain amount of diverging data has been collected on an issue earlier, secondary data analysis is required to gain new comprehensive information. The following sections detail several strategies of secondary data analysis, but explain that in the present case (i.e., for the analysis of customer value creation in the SPCE sector) secondary data analysis alone is insufficient.

a) Market-Research Based Trend Analysis

Trends are “social and economic processes and phenomena, forming tendencies of future activities” (Illiasenko & Rosokhata, 2016, p. 70). According to Mason, Mattin, Dumitrescu, and Luthy (2015, p. 46), trends are “new manifestations among people – in behaviour, attitude or expectation – of a fundamental human need, want or desire.” Interpreting these definitions in the light of customer value, trends indicate that new customer value conceptions have gained importance and that this development takes up pace. Trends offer new and growing potentials for future value creation, which promises customer satisfaction, customer loyalty and finally competitive advantage (Kavadias, Ladas, & Loch, 2016). Knowledge about trend emergence is crucial to customer value anticipation.

The present trend towards higher expected supply chain transparency for example exemplifies this proposition: The logistics provider Amazon pioneers by promising on-time delivery to consumers online, which justifies its striking market success (Chen, Gillenson, & Sherrell, 2004). The transportation platform Uber targets at the same trend in passenger transports, allowing customers to track the precise location of available taxis real-time on their smartphones. Customers are provided precise information about the availability of the desired service (Mason et al., 2015). Car producer Volkswagen, similarly, enables customers to monitor the production-progress of their car orders real-time using a smartphone app, which grants supply chain transparency (Eisert, 2017). As these examples show, identifying trends (and developing corresponding products) is crucial to successful customer value generation. These examples also show that general social trends, in this case supply chain transparency, can spread across diverse markets, industries, product and service categories (Mason et al., 2015).

The early understanding of market trends is thus essential to business success. Classical trend analysis is based on market research, which refers to shifts in customer value preferences that have already happened i.e., it is backward-orientated. It enables companies to retrospectively react to these developments by adjusting value propositions to already existing customer value expectations (Kandampully & Duddy,

1999). This retrospective strategy entails several risks. Market research usually follows market developments but does not anticipate them. Businesses relying on market research only, risk losing of uniqueness and reduce their potential of differentiation from competitors who follows the same adaptive strategy (Flint et al., 2002). They also risk losing market shares to other earlier trend adopters. According to Beheregarai-Finger et al. (2014) and Blocker et al. (2011), B2B customers doubt that a pure follower strategy is a source of enduring competitive advantage.

Barney's (1991) resource-based view on competitive advantage generation supports this intuition. Market research provides information on past developments which are easily accessible to all market participants, for example from market research institutes offering their analyses on the market. These data are not exclusive, rare or restricted in access and hence unlikely to be a source of competitive advantage (Ho et al., 2014). Following Porter's Three Generic Strategies model (Porter, 1980), the reliance on open-access market research alone cannot establish unique strategic advantages. Given the missing opportunity for uniqueness, this is likely to result in a competition on cost and price alone, where profits by unit equal marginal cost (Banker, Mashruwala, & Tripathy, 2014).

Concluding, trend analysis based on market research alone, is inadequate to anticipate customer value development and gain a unique competitive position, since it relies on past data which usually are available to all market participants.

Trend analysis, however, is a generally useful strategy to explore the research aim of analysing future sources of competitive advantage in the German SPCE industry in order to support dealers with the adjustment of their businesses to emerging market trends and customer demands. The review section has shown that businesses base their insights on customer value on the analysis of customer satisfaction and trust in their service and product offers. By assessing in what way customer utility develops, businesses can anticipate what could create customer value in future. Trend analysis is generally a strategy to achieve this aim. However, market research alone is not

adequate to accomplish successful trend analysis since it is backward-oriented. Future-oriented strategies have to be developed for the SPCE sector.

b) Data Mining

Data mining is a research technique based on historical data, which recognises patterns and interrelations between apparently unrelated attributes from large data sets (Hand, 2007). It aims at generating descriptive, prescriptive or predictive insights (Assunção, Calheiros, Bianchi, Netto, & Buyya, 2015). According to Assunção et al. (2015), predictive data mining enables firms to gain a deeper understanding of the drivers of future customer needs and empowers businesses to foresee emerging customer demands and preferences.

Although, in theory, data mining can support the process of customer value anticipation, by recognising so far unknown attributes and interrelationships exclusively (Blocker et al., 2011), there are important limitations to the technique. Data mining success entirely depends on the availability of large amounts of relevant data-sets. In the age of digitalisation, these are often largely available in B2C research like from social media communication (Tuarob & Tucker, 2014). In B2B marketing and particularly in the SPCE industry, however, large and reliable data pools are usually unavailable. Beyond that, data mining requires high initial investment in information technology (IT) hardware, software as well as IT operational skills (Assunção et al., 2015; Hand, 2007). Considering these barriers, the potentials of data mining in a B2B context and particularly for small and medium-sized companies in the German SPCE sector is rated very limited.

c) Ethnographic Analysis

Ethnographic marketing research intends to gather in-depth real-world information on the dynamics and change of customer behaviour patterns and emotions. It relies on an detailed analysis of qualitative customer data, usually retrieved by long-term observation or in-depth interviews in a purchase environment (Boddy, 2011). It usually

includes the study of the impact of social and cultural identities (Elliott & Jankel-Elliott, 2003).

Blocker et al. (2011) find ethnographic research an effective tool for the exploration of future consumption trends due to the researcher's physical, emotional and mental proximity to customers' real-life use situation. Ethnographic research mediates a detailed understanding of customers' perceptions and expectations and the use and effectiveness of innovative products in particular (Boddy, 2011; Elliott & Jankel-Elliott, 2003). Ethnography enables researchers to observe and experience customers' upcoming needs and judge on the limitations with existing products under real-life conditions. Even the adequacy of product prototypes can be tested in a real-life environment. Ethnography opens unfiltered insights into use circumstances, is free of participant subjectivity and self-interpretation error. In concrete application situations, participants frequently develop own their ideas on useful product improvements and thus provide highly valuable unique information to suppliers (Elliott & Jankel-Elliott, 2003).

Due to the high implementation requirements, ethnographic research, however, lacks practicability. To provide reliable prognoses on future customer needs and desires, ethnographic studies require a well-defined, pre-selected group of experienced customers willing to be monitored and analysed over a certain period (Churchill, von Hippel, & Sonnack, 2009; Lüthje & Herstatt, 2004; Mahr, Lievens, & Blazevic, 2014). Ethnographic research is time-consuming and thus costly. Model customers have to be motivated and tend to behave less authentically in a supervised experimentation environment, which may falsify the retrieved information (Churchill et al., 2009; Mahr et al., 2014). Due to assumed high cost and low practicability, businesses rarely see the necessity of spending time and effort on ethnographic studies (Jeffrey & Troman, 2004). This is also the case for this study, so that ethnography is disregarded.

Summarising the results of the analysis of the aptitude of classical market research strategies to analyse customer value anticipation, neither approach is adequate. Market research-based trend analysis does not provide unique information. Data

mining requires large data pools at the cost of high financial and knowledge efforts, which limits its application in a B2B context. Ethnographic research is expensive and suffers from low practicability.

The evaluation of classical market research strategies however provides a catalogue of desirable characteristics of a suitable methodology for research in customer value anticipation, as follows:

1. The strategy should foster deep insights on upcoming customer requirements.
2. The strategy should enable a deeper understanding about products facilitating customers' future goal achievement and upcoming trends.
3. The strategy should inform on changes in customers value perception.
4. The strategy should support efforts to foresee future trends that are likely to influence the industry.

3.2.2 Lead Customer Analysis as Methodology of Choice

Section 3.2.2 examines the aptitude of lead customer analysis to match the above requirements and amend on the limitations of the classical market research strategies cited in section 3.2.1. The SPCE sector is given special regard as to applicability.

a) Concept of Lead Customer Analysis

Lead customer analysis has been found as a valuable strategy which amends on the difficulties of the research techniques discussed in section 3.2.1. Lead customer analysis is a strategy of future-oriented market research which uses the experience of particularly demanding and innovative users in a targeted way to develop products and services so that future market requirements are met (Franke, Von Hippel, & Schreier, 2006; Urban & Von Hippel, 1988).

Lead customer analysis has been proven to track and profitably make use of upcoming industry trends early (Dwyer et al., 2008). Trends are emerging developments, that often define tendencies in specific markets/areas in future (Müller & Müller-Stewens, 2009). Megatrends in contrast excel in their importance, impact, and perseverance. Megatrends impact success and life conditions across various markets/areas, influencing societies from different angles. They can change consumption behaviour and impact the profitability of existing business models (Naisbitt & Aburdene, 1990). Lead customer analysis is an effective strategy to keep track of industry trends in their emergence, since lead customers can be initiators of megatrends.

Figure 22 illustrates the revenue generated by lead customer innovation in the semiconductor industry from 1990 to 2000. It shows that value creation by lead customers can have an important and growing share in annual business (Thomke & Von Hippel, 2002).

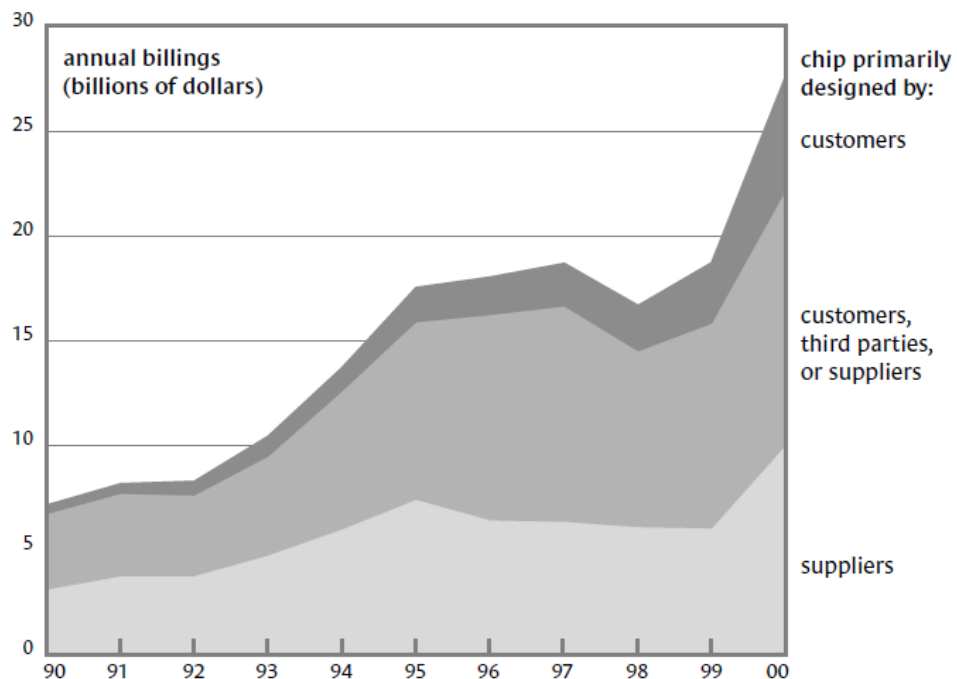


Figure 22: Creating Value with Customers as Innovators (Thomke & Von Hippel, 2002)

Businesses relying on customer experience in a targeted way enjoy the opportunity to anticipate market trends early and gain a competitive advantage systematically. Customer-developed innovations tend to become commercially successful because

they meet customers' value expectations (Lin & Seepersad, 2007; Morrison, Roberts, & Midgley, 2004; Piller & Ihl, 2009; Schreier & Prügl, 2008; Tsinoopoulos & Al-Zu'bi, 2012; Von Hippel, 1986). Current customers are the most probable future customers for future products in the same market and as such are the most important external source for information in the innovation process (Mahr et al., 2014; Schuhmacher & Kuester, 2012). Grevet and Steffen (2016, p. 4) postulate to "partner, collaborate, and co-create with business partners and even customers" to maximise customer value.

Lead customers are a small group of customers – businesses or private persons – with particular usage requirement, which existing products do not yet fulfil (Churchill et al., 2009; Schuhmacher & Kuester, 2012; Von Hippel, 1986). These are of particular interest to innovating companies, since their usage requirements may represent upcoming market trends.

Lead customer analysis has its roots in the work of Von Hippel (1986, 1988). The semiconductor industry was the first to rely on the innovation capacity of lead customers from the 1990-ies onwards. The relevance of lead customers in product innovation has grown constantly since then. Lead customer analysis attempts to involve lead customers in product design explicitly and identify future customer needs to discover opportunities of future customer value creation by product innovation (Churchill et al., 2009).

b) Lead Customer Characteristics

According to Lüthje and Herstatt (2004), lead customers dispose of the competency to recognise, memorise and make sense of innovation-related information. This qualifies lead customers for customer value anticipation. Lead customers apply new products before they are marketed commercially, discover trends and frequently become trend-setters themselves. Figure 23 classifies lead customers concerning their position in the timeline of innovation adoption.

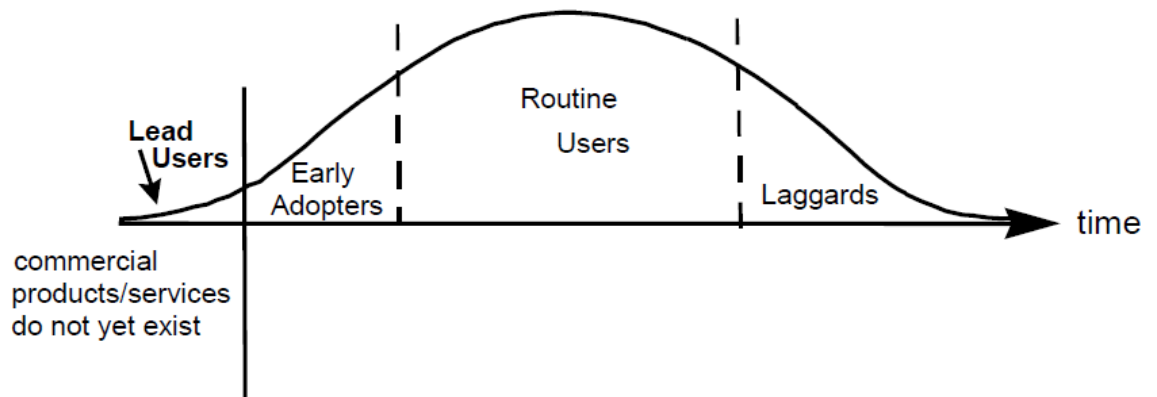


Figure 23: User Categories (Churchill et al., 2009)

Lead customers ideally dispose of five characteristic traits:

1. Lead customers are ahead of the market trend and precisely are amongst the first in an industry to experience a novel need, due to their progressive own requirements. The usage pattern of lead customers exemplifies future trends and potential mainstream requirements (Von Hippel, 1986). Lead customers are often dissatisfied with suppliers' existing product portfolios, because they do not correspond to their progressive requirements (Franke & Shah, 2003; Lüthje, 2000; Lüthje & Herstatt, 2004).
2. Lead customers expect personal benefits from innovative solutions to their progressive needs and are willing to participate or even invest in the exploration of new products (Herstatt, 1991; Olson & Bakke, 2001; Von Hippel, 1986, 1988).
3. Lead customers dispose of extensive usage experience resulting from the intensive and long-term use of a particular product (Jeppesen & Frederiksen, 2006; Lettl, 2013). This enables them to recognise and address their progressive needs and expectations and encourages them to suggest own solutions (Bilgram, Brem, & Voigt, 2008; Franke & Shah, 2003; Hoch & Deighton, 1989; Lüthje, Herstatt, & Von Hippel, 2005; Schreier & Prügl, 2008).

4. Lead customers dispose of extensive product-related knowledge e.g., in-depth understanding of the functions, processes, technology and materials of a product category (Lüthje & Herstatt, 2004). This competency enables lead customers to translate advanced needs into concrete product requirements (Bilgram et al., 2008). Lead customers are frequently highly educated and informed in fields related to the product-category (Franke & Shah, 2003; Lüthje & Herstatt, 2004; Schreier & Prüggl, 2008). They use a wide range of functions and thereby gain holistic knowledge about the product. Lead customers often tend to bring products to their performance limits, using them in extreme situations, for instance. They understand product capabilities and limitations. Lead customers attempt to get the maximum benefit out of product usage and – dissatisfied – tend to constantly analyse product weaknesses to conceive solutions and, if successful, apply and test these in real-life circumstances (Weisberg, 1999).

5. Lead customers frequently are opinion leaders in their industries e.g., dispose of a good business reputation and influence a significant number of peers (Franke & Shah, 2003; Franke et al., 2006; Olson & Bakke, 2001; Schreier & Prüggl, 2008). Lead customers frequently are amongst the first to communicate their views in their communication networks (Childers, 1986).

c) Opportunities of Lead Customer Analysis

Due to their described characteristics, lead customers are promising partners for innovative companies (Churchill et al., 2009; Mahr et al., 2014). Slater and Narver (1998, p. 103) describe them as “window into the future”. According to Lüthje and Herstatt (2004), lead customers are valuable, given that their particular usage of a product is not yet a mass phenomenon, but has got future potential for conventional customers. Lead customer demands are likely to become a standard requirement in future (Bonner & Walker Jr, 2004; Churchill et al., 2009). They are comparable to an early warning system for suppliers concerning potential future customer value and market trends (Blocker et al., 2011; Flint et al., 2011).

Due to their capability to initiate product developments self-reliantly, lead customers are an important and low-cost source of innovation for businesses (Cohen & Levinthal, 2000). The cooperation with lead customers promises knowledge gains and competitive advantages to businesses (Mahr et al., 2014).

Compared to conventional customers, lead customers, provide more realistic estimates on viable innovative product attributes due to their in-depth experience (Lüthje & Herstatt, 2004; Mahr et al., 2014; Slater & Narver, 1998).

Lead customer analysis makes systematic use of the unique, advanced customer knowledge informs businesses on future market trends and eases the development of innovative product (Lüthje & Herstatt, 2004; Von Hippel, 1986, 1988). Sometimes highly innovative and sophisticated lead customers have even built their own prototypes that have formed the basis of novel commercial products (Bonner & Walker Jr, 2004; Churchill et al., 2009; Mahr et al., 2014).

Lead customer analysis thus is a preferable strategy of future-oriented market analysis (Lüthje & Herstatt, 2004). Therefore, it is a useful strategy for application in the empirical section of this study in order to evaluate how far the anticipation of customer value can support SPCE dealers in Germany to discover future sources of value creation and competitive advantage.

In summary, lead customer analysis widely matches with the requirements to analyse customer value anticipation:

1. Lead customer analysis provides deep insights on upcoming customer requirements.
2. Lead customer analysis enables a deeper understanding about products. facilitating customers' future goal achievement and upcoming trends.
3. Lead customer analysis informs on changes in customers value perception.

4. Lead customer analysis supports in foreseeing future trends that are likely to influence the industry.

Lead customer analysis is apt for application in the empirical section of the study on customer value anticipation in the SPCE industry.

d) Critical Evaluation and Preconditions to Successful Lead Customer Analysis

The following limitations and preconditions to successful lead customer analysis implementation have to be observed.

Lead customers are rare and more difficult to detect than customers with ordinary needs. Belz and Baumbach (2010) Lüthje (2000) indicate expected lead customer shares of 1 % to 3 % for typical customer databases. Lead customer identification is a particular challenge in a B2B context. Industrial customers partly can be reluctant to share innovative ideas with suppliers, fearing that their ideas and the related benefits might be disclosed to their competitors (Belz & Baumbach, 2010; Lin & Seepersad, 2007; Lüthje & Herstatt, 2004). Motivating lead customer to participate in innovation projects can be challenging. Engaging lead customers in the innovation process can require a considerable investment of time, money and resources. Also, intellectual property aspects can mean a hurdle to supplier-customer collaboration in innovation processes (Lüthje & Herstatt, 2004).

To convince lead customers to enter business co-operations, companies can offer incentives, such as monetary compensation. Sometimes lead customers are sufficiently motivated by the perspective of improving the product they use daily (Churchill et al., 2009; Mahr et al., 2014). Finally, the psychological desire to belong to a community of experts and the feeling of being honoured and selected to join an elite group may motivate lead customers (Franke, Schreier, & Kaiser, 2010; Nambisan & Baron, 2009). After all, the quality of the customer-supplier relationship and the efforts expected from lead customers co-determines type and price of lead customer compensation (Mahr et al., 2014). Depending on the individual traits of the partner, monetary,

personal or psychological motivators may be combined. The conclusion of lead customer agreements prevents lead customers from cooperating with competitors and avoids knowledge outflows (Mahr et al., 2014).

A potential issue with lead customers is that their innovations and requirements can appear too futuristic and not representative for the wider customer base (Churchill et al., 2009; Schuhmacher & Kuester, 2012; Von Hippel, 1986). Low adaption rates of product innovation resulting from lead customer involvement can impair the profitability of lead customer market analysis (Magnusson, 2009). Investments based on lead customer input might show low adaptation rates and fail to deliver the expected return, when lead customer innovations address niche-markets or high-end users only (Lin & Seepersad, 2007). Adequate lead customer selection respecting the identified lead customer characteristics can prevent useless efforts and innovation failure. Lead customers who are opinion leaders facilitate the adoption of their innovations by a larger audience, which reduces the risk of spurious customer value outcomes (Olson & Bakke, 2001; Schreier & Prügl, 2008).

If the mentioned potential problems with lead customer cooperation are carefully managed, lead customer analysis is a preferable strategy to anticipate future customer value developments and at the same time a suitable empirical methodology. It amends the difficulties of classical market research - specifically low practicability - in an SPCE context.

3.2.3 Summary of Results on Research Strategy

Summing up section 3.2, lead customer analysis has been found the best fitting strategy to anticipate customer value development in the framework of this empirical study. It focusses on the analysis of the requirements and ideas of advanced, progressive customers, whose needs are ahead of the market and who dispose of influence in consumer networks and high usage experience. Understanding lead customers' unsatisfied needs – which tend to go beyond those of ordinary customers

but expected to become mainstream in the future – gives suppliers the opportunity to anticipate future customer value potentials. By cooperating with lead customers, companies collect market data signalling change in value preferences continuously. By following a strategy of close collaboration and continuous exchange with progressive customers, suppliers can make out new needs earlier than competition. It puts anticipating companies in a good position to spot signs of a change in customers' value preferences very early, ideally before competition, to gain first-mover advantages (Flint et al., 2011).

By referring to lead customers, this study can explore, how customer value anticipation drives the process of generating competitive advantage by creating customer value. Lead customer analysis is a promising instrument for measuring the impact of customer value anticipation in the research model displayed in Figure 20.

3.3 Sampling Strategy

Sampling comprises the selection of case study companies and participants and has to comply with the requirements of representativeness, analytical generalisability, validity and reliability as specified in section 3.1.5 (Bryman & Bell, 2015).

The idea of the case study is to inquire determinants of customer value creation and the relevance of customer value anticipation for competitive advantage generation with the customers of German SPCE dealers. This plan requires the identification of SPCE dealers who disclose their customer base.

3.3.1 Justification of Single Case Approach and Selection of Case Company

Motivating SPCE dealers to participate in the study has proven extremely difficult, as they are very concerned about the privacy of their customer data, particularly when competitive dealers are meant to be involved in the project (for this study dealers' entire customer database would have been analysed to allow identification of lead

customer characteristics). Additionally, the fact that the author was a at the time of data collection employed at a specific German SPCE dealer made all other potential dealers reject participation, due to their competition with this dealer. Ultimately, the only accessible SPCE is the author's employer, *Kraemer Baumaschinen GmbH & Co KG* (KB). The study is thus designed as a single case study.

According to Yin (2017), single case studies are compatible with the research paradigm of constructivism and the underlying phenomenological positioning. From an academic perspective a single case study is acceptable (Bryman & Bell, 2015; Creswell & Creswell, 2017; Easterby-Smith et al., 2015). A single case study approach allows an in-depth understanding of a real-life phenomenon and considers its real-life context in detail (Yin, 2017). A single case study offers itself for the consideration of the complex circular cause-and-effect relationship of customer value anticipation customer value creation and competitive advantage, as drafted in the research model (Figure 20), since the diverse cross effects can thus be considered in detail. Practically, the selection of a single case has the advantage that the researcher disposes of deep knowledge of the selected dealer's organisational structure. Due to personal relationships with KB's management and its staff in customer contact, the author obtains access to relevant insider data.

According to Starman (2013); Thomas and Myers (2015); Yin (2017), case study design requires a clear definition of the subject and object of the selected case. The object of a case is the research field, that is the analytical framework (Starman, 2013) within which the subject, respectively the case or the phenomena, are understood and illustrated. The subject is the case upon which the object is applied and analysed (Starman, 2013; Yin, 2017).

The object of research is the analysis of the impact of customer value anticipation on competitive advantage. The case subject is KB, a privately-owned SPCE dealer business established in 1965. It is headquartered in Rheda-Wiedenbrueck and operates branches in Lippstadt, Dortmund and Osnabrück (Kraemer_Baumaschinen, 2018b).



Figure 24: Kraemer Baumaschinen Headquarters

KB employs 90 people and is active in the distribution of SPCE ranging from 1 to 80 tons operating weight. Spare parts business, service, maintenance works and machinery rental business encompass the company's portfolio (Kraemer_Baumaschinen, 2018b). In 2018, KB realised a turnover of € 29.5 million. 51 % of the revenues came from international trading activities in construction equipment parts of different brands. This business field is not common for SPCE dealers in Germany. Usually, dealers only sell parts of their exclusive brands to customers within their exclusively assigned territories. Thus, KB holds a unique market position in this business amongst German SPCE dealers. Further 49 % of the revenues resulted from typical SPCE dealer business, machinery sales, aftermarket business, and rental activities in products of three strategic original equipment manufacturers (OEM) partners: DOOSAN Construction Equipment (heavy and compact SPCE), Kubota (compact excavators), and Atlas Weycor (compact wheel loaders). 57 % of the SPCE sales revenues in 2018 were realised from Doosan Construction Equipment, 13 % from Kubota and 24 % from Atlas Weycor. The remaining 4 % came from sales of used equipment of other brands (Kraemer_Baumaschinen, 2018c).

Geographically, the company operates in a territory spanning the eastern border of the city of Paderborn to the Ruhr Area as the most western point. It comprises the town of Schmallenberg in the south and reaches to the city of Osnabrück in the north. KB is an

exclusive distributor for its strategic OEM partners in this area (Kraemer_Baumaschinen, 2018c).

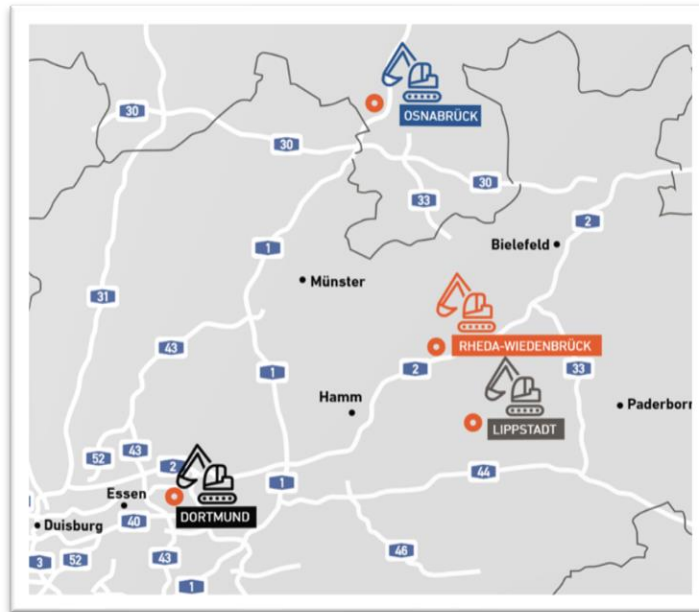


Figure 25: Kraemer Baumaschinen Sales Territory Map (Kraemer_Baumaschinen, 2018c)

KB's market potential amounted to 490 units of heavy SPCE (machines of 14 tonnes and more) and 1,102 units of compact equipment (machines of 1 to 14 tonnes) in 2018 (Kraemer_Baumaschinen, 2018c). The company achieved a market share of █████ in heavy equipment and █████ in compact equipment in these markets in 2018. With that, KB is considered a major player in the SPCE business within its territory.

KB is a suitable case for the exploration of the impact of customer value anticipation on competitive advantage in the German SPCE business for the following reasons:

1. The company is a relevant player in the German SPCE business.
2. KB's business comprises machinery distribution as an exclusive retailer of OEM SPCE brands, aftersales services and rental business and thus is comprehensive in the SPCE distribution sector. Its portfolio is typical for SPCE dealers in Germany. Yin (2017) recommends the selection of typical cases in case study research to realise representative results.

3. KB is accessible to the author of this study and has consented to the study, which is a major practical reason for the selection (Easterby-Smith et al., 2015; Rowley, 2002; Yin, 2017).

Yin (2017) demands sharp boundaries e.g., inclusion and exclusion criteria, defining the scope of a case study. Time, place, activity, context, geographic area and social group are possible delimitations (Baxter & Jack, 2008; Yin, 2017). According to Baxter and Jack (2008) and Yin (2017), the definition of research boundaries follows case selection. As explained, KB's operations mainly comprise parts trade business and SPCE distribution. The case study is limited to the SPCE distribution segment. The international parts trade division is exempted from the study, since it is an unusual business activity for German SPCE dealers. Customers in the spare part business are frequently dealers themselves and differ from SPCE owners in their characteristics and customer value preferences. The focus on a limited customer group – owners of SPCE – concretises the study and ensures homogeneity and comparability of results.

The analysis focusses on SPCE machinery customers registered in KB's customer database. Potential new customers are not included since their requirements are not yet known and they are difficult to access for a survey since their data are not filed in the customer database, yet.

Geographically, the selection of customers is limited to the contractual territory, KB is assigned as an exclusive OEM dealer since it is generating 60% of its revenue with customers in this area. Consequently, the intimacy with customers in that territory is highest, fostering the reliable identification of lead customers and increasing the likelihood that they agree to participate in the study.

The lead customer involving part of the study is limited to the period of October 2018 to January 2019.

3.3.2 Selection of Research Participants

Chapter 3.2 has chosen lead customer analysis as a research strategy. Lead customers are a valuable source of information to assess the impact of customer value anticipation in the cause-and-effect chain leading from customer value creation to competitive advantage in the SPCE sector.

Since the study is designed as a single-case study at KB, lead customers are meant to be retrieved from KB's customer database. As detailed in section 3.3.1, only customers - usually companies - registered in the dealer's customer database and located in the key area of operation (refer to Figure 25) are qualified for selection.

The internal database of KB is referred to, in order to identify customers matching with the desired lead customer characteristics according to section 3.2.2. Since no sampling frame listing all lead customers of KB is available, a non-probability sampling approach is chosen for this study. According to Miles and Huberman (1994), purposive sampling is the most common non-probability sampling form in qualitative research. DiCicco-Bloom and Crabtree (2006) state that the sample in qualitative research should share critical characteristics related to the research question. Selection criteria should be derived from relevant theory (Easterby-Smith et al., 2015). Bloom and Crabtree (2006) suggest selecting research participants who share characteristics that correspond with the purpose of the study and who meet defined eligibility criteria. This is why this sampling approach is also called criterion sampling (Miles & Huberman, 1994).

Section 3.2.2 has developed definite criteria in the form of lead customer characteristics and behavioural indicators signalling them for lead customer selection. Lead customers should:

- be ahead of market trends:
 - Faced with needs that will become mainstream only in the future
 - Dissatisfaction about existing product portfolios

- Constantly looking for ways to reengineer key business processes
- expect personal benefits from innovative solutions:
 - Make investments to develop own solutions
- dispose of extensive usage experience and product-related knowledge:
 - Total period of product-use
 - Frequency of product use
- dispose of extensive product-related knowledge:
 - Professional and non-professional background
 - Frequency of use of relevant information-sources
 - Constantly analyse product weaknesses, conceive solutions and apply and test in reality
- ideally are opinion leaders in their industries:
 - Speed of innovation adaption
 - Communication of use-experiences to networks

These criteria are used to identify suitable research participants. Although these restrictions significantly limit the number of possible participants, this selective choice allows to identify lead customers who best fit with the research concept and the research questions.

To understand how lead customers meeting the above criteria can be identified in practice, two approaches for lead customer identification listed by Lüthje and Herstatt (2004) were looked at: The qualitative approach and the quantitative approach.

a) The Qualitative Approach

The qualitative approach of lead customer identification is a process of networking and referrals. The researcher starts by contacting an initial small group of addressees, who he knows to be lead customers. These are asked for further contacts to other progressive users and experts in the field. Thereby, the pool of potential lead customers grows further (Lüthje & Herstatt, 2004). The risk with the qualitative approach is, that due to each referrer's individual perception of lead customer

characteristics, the resulting pool of lead customers can become very heterogeneous regarding expertise field and level. To avoid arbitrary recommendations and selection of lead customers, the researcher must carefully filter the referred customers, based on the defined lead customer criteria.

Alternatively, the customer facing part of an organisation can be used for identifying lead customers. Sales representatives are in regular contact with customers and therefore possess deep knowledge about progressive customers, or about such that in the past may have disclosed so far unrecognised needs or desires for not yet existing products (Lüthje & Herstatt, 2004).

b) The Quantitative Approach

Quantitative lead customer selection identifies lead customers from corporate databases. Researchers could thus refer to complaint databases for instance. It can be filtered for those customers that in the past have appeared to be unhappy with the existing product portfolio, asking for an upgrade in performance or the addition of features. Such unhappiness is a strong indicator for an above average benefit expectation, which is a characteristic of lead customers (Lüthje & Herstatt, 2004). Referring to a more general customer database, the researcher could contact all customers personally and interview them as to their fulfilment of lead customer characteristics (Lüthje & Herstatt, 2004). Quantitative approaches deliver a homogeneous pool of lead customers selected according to standardised characteristics. However, the contact approach can only be applied when the total customer pool is relatively small. Big customer pools risk low sampling efficiency and high screening cost (Belz & Baumbach, 2010).

The study originally planned a quantitative screening approach referring to KB's customer relationship database for lead customer identification. The database contains 897 active customers (Kraemer_Baumaschinen, 2018a). This was plan was dropped, because the database does not contain relevant information classifying lead

customers e.g., information on product knowledge, opinion leadership or frequency and quality of complaints.

Instead, the qualitative lead customer identification approach was applied, and the KB sales team was asked for hints to identify lead customers. To engage with the sales team on lead customer identification, the researcher blocked a 2-hour slot in KB's weekly sales team meeting on November 14, 2018 and had a workshop with the seven salesmen that cover the entire customer base plus two sales administrators and one sales director. The team was introduced to the research project two days before the meeting by email, in order to stimulate upfront thinking and enhance the efficiency of the meeting. The material covered the role and relevance of lead customers as well as desired lead customer characteristics and indicators. To ensure a common understanding on the desired outcome, the researcher presented on the lead customer issue at the beginning of the meeting. The meeting participants received a handout showing the desired lead customer characteristics and their respective indicators. Based on that, an open discussion emerged. Lead customers suggested by team members were supported or challenged by the other team members. The role of the researcher was to moderate and structure the discussion and advised the sales team to systematically assess the suggested lead customers concerning the desired characteristics. The outcome of this process was documented by the researcher. This is presented in the matrix in Table 6, which displays the desirable lead customer characteristics, seen in the top row of Table 6 and the behavioural indicators signalling each characteristic, left column of Table 6. To visualise the relationship between each lead customer characteristic and its related behavioural indicators, different colours were used. The number of each lead customer who shows a desired characteristic was inserted in the respective cell of the matrix. For reasons of anonymity, each lead customer was assigned a number in the matrix). This straightforward analytical approach allowed for a very transparent and reliable selection process, based on sharply defined criteria, developed from existing lead customer literature (refer to 3.2.2).

Behavioural Indicator \ Lead Customer Characteristic	Ahead of the market-trend	Expect high benefits from finding innovative solutions to advanced needs	Deep use experience	Deep product related knowledge	Opinion leadership
Faced with needs that will become mainstream only in the future	1,2,3,4,6,8,10,11				
Dissatisfaction about existing product portfolios	1,2,5,6,7,8,9,11,12				
Constantly looking for ways to reengineer key business processes	3,4,5,6,8,9,11,12				
Making investments to develop own solutions		1,3,5,6,11			
Total period of product-use			3,4,6,7,8,10,11,12		
Frequency of product use			2,4,5,7,8,10,11,12		
Professional and non-professional background				1,2,3,5,6,7,8,9,10,11,12	
Frequency of use of relevant information-sources				2,4,6,7,9,12	
Constantly analyse product weaknesses, conceive solutions and apply and test in reality				1,3,4,5,6,8,10,11	
Speed of innovation adaption					1,3,4,6,8,11
Communication of use-experiences to networks					3,4,6,8,10,12

Table 6: Matrix of Lead Customer Characteristics and Classification of Eligible Lead Customers

The matrix assigns desirable characteristics (top-row in Table 6) by indicators that represent them (left column in Table 6) to the proposed lead customers, represented by anonymous numbers, according to the assessment of the sales team. It unveiled that none of the proposed lead customers shows all behavioural indicators. Consequently, the inclusion requirements had to be adjusted. Such downgrading of the requirements in lead customer identification is in line with practice. In a study about lead customer identification using netnography, Belz and Baumbach (2010) used six characteristics to identify lead customers. Since none of 40 screened potential lead

customers showed all desired characteristics, the minimal number of lead customer characteristics was reduced so that an adequate sample size was achieved. Correspondingly, it was decided for this project that the eligible lead customers should show at least four out of the five desired characteristics. To be classified as meeting a characteristic, the customers had to show at least 50 % of the respective indicators.

Based on the above scheme, the proposed lead customers number 1, 3, 4, 5, 6, 8, 10, 11 and 12 were accepted for the sample. The proposed lead customers number 2, 7 and 9 were rejected. The selection process resulted a total sample size of nine lead customers.

LC No.		
1	4	Yes
2	3	No
3	5	Yes
4	4	Yes
5	4	Yes
6	5	Yes
7	2	No
8	4	Yes
9	3	No
10	4	Yes
11	5	Yes
12	4	Yes

Table 7: Number of Lead Customer Characteristics of Potentially Eligible Customers

Detailed profiles of the selected lead customers can be found in Appendix III: Lead Customer/Interviewee Profiles. An overview of the composition of the sample, clustered by different characteristics like company size and participant age are available from Appendix IV: Lead Customer/Interviewee Clusters.

Considering that the population of KB customers is 897 (Kraemer_Baumaschinen, 2018a), the identified share of lead customers is 9/897, or 1 %. Belz and Baumbach (2010) and Lüthje (2000) indicate expected lead customer shares of 1 % to 3 % for typical customer databases. Thus, the number of identified lead customer of KB is

within expected dimensions. That gives confidence that all lead customers of KB have been identified and that no further lead customers could have been included beyond the initial selection.

3.3.3 Sample Size Justification

There are no definite rules regarding the appropriate size of the sample in qualitative research (Marshall, Cardon, Poddar, & Fontenot, 2013; Patton, 1990). Several authors, however, present concepts to approach this matter.

a) Saturation

Glaser and Strauss (2017) propose the concept of saturation to determine the adequate sample size in qualitative research. Saturation describes the state in data collection and data analysis at which collecting data from incremental participants does not result in additional perspectives, insights or any other valuable information about issues under review. During data collection and concurrent data analysis of this study it became obvious that after six interviews a level of saturation was reached at which additional data was unlikely to add something new to the overall picture. According to Strauss and Corbin (1998) this signals saturation. The preferences for specific customer value categories did not vary at a relevant level anymore. The mentioned relevant industry trends fit with the previously gathered data. No new, unexpected codes emerged, anymore, and data generated from the material could be classified under the existing codes. As the study progressed, saturation was reached where the study where the participants began to repeat existing themes. Thus, given the perceived saturation, the sample size is appropriate.

b) Resource Planning

According to Patton (1990), the sample size in qualitative research depends on available resources and time. Analysing qualitative data from large samples can be labour intensive and time-consuming.

The time and resource plan of this study was constrained by the working capacity and the overall thesis plan of the researcher. The data collection phase was foreseen to take four weeks, totalling twenty workdays (data collection could only take place during working days due to the unavailability of the lead customers on weekends). Fifteen days were planned for pure data collection, with one interview taking place every second day, allowing for eight interviews with lead customers. The fourth week was reserved for transcribing the interviews. Result extraction and data analysis was supposed to take another eight weeks. The rationale was to plan four days for analysis by interview, resulting in 32 calendar days (data analysis could take place any day of the week). The remaining 29 days were reserved for synchronisation, sense-making, conclusion and write-up. For the sample of nine lead customers, the resource plan (15 days for data collection and one interview taking place every second day = eight interviews) was slightly exceeded by one interview but remained within manageable boundaries.

c) Numerical Sample Size Directions

Some authors suggest concrete sample sizes. Creswell (1998) finds 5 to 25 participants adequate for phenomenological studies. Morse (1994) proposes a minimum number of six. Englander (2012) states that the ideal number of samples in phenomenological studies lies between three and fifteen individuals. Marshall et al. (2013) find that 45 % of the single case studies they analysed included less than twenty interviews. Concluding from the foregoing facts, the sample size of nine lead customers of this this singles case study is appropriate for a qualitative study.

Nevertheless, the numerical justification of sample size in exploratory, inductive constructivist research appears inadequate, because the underlying realist ontology,

understands truth as context bound, socially constructed and multiple (Easterby-Smith et al., 2015). It is determined by individual, subjective experiences, observations, feelings and senses (Henry, 2015). This entails that it is crucial to gather relevant data from a relevant sample, not necessarily much data from a large sample (Anderson, 2017). It is the richness of the data gathered, the depth of the insight gained, the relevance of the data for answering the research questions and for achieving the study aim that determines the appropriateness of the size of a sample (Yardley, 2000). Furthermore, it is the comprehensibility and coherence of the sampling approach that give rigour to sample selection and thereby determine sample appropriateness (Anderson, 2017; Robinson, 2014). Evaluating this study against the argued sample size suitability indicators in exploratory, inductive constructivist research, its sample size of nine lead customers is judged appropriate and sufficient. The data gathered from the sample is relevant and allows a scientific investigation and a deep insight into the impact of customer value anticipation on competitive advantage, thereby enriching the knowledge in this area. Due to that, the conclusions derived from the analysis of the data allow to answer the research questions and thus, to achieve the aim of the study. The comprehensibly presented sampling approach is based on a defined and developed set of lead customer characteristics, thus rigour and reliable. Relaxing the sample inclusion criteria would have created a larger sample but generated inferior data, less relevant and less appropriate for answering the research questions. This justifies the sample size of nine lead customers in this study.

3.3.4 Sample Access

To motivate the identified lead customers to participate, an adequate access strategy is essential. Since lead customers are businesses, usually several individuals are involved in the buying decision making process for new for new SPCE there. The number of individuals depends on the size of the business. However, it is normal that one final decision maker is involved in the buying process. Reflecting this, this decision maker role was sought to become the lead customer for this study. In companies up to 10 employees, this is usually the owner. In companies up to 100 employees very often

a SPCE fleet manager holds this responsibility. Above 100 employees, construction companies often employ a procurement manager who takes the final decision on SPCE buying decisions.

To address to the selected lead customers effectively, the researcher asked KB’s sales-team for the most suitable contact persons to provide data relevant for the research area at the identified lead customers. To structure this process and develop a common understanding of the desired characteristics of the contact persons, the informant criteria of Gläser and Laudel (2010) are applied:

1. Who possess the relevant information?
2. Who is most likely to have the ability to provide relevant information?
3. Who is most likely willing to inform?
4. Who of the experts is available?

This resulted in a comprehensive overview indicating for each lead customer a contact person, the position, contact detail and miscellaneous information, where relevant.

LC No.	Contact Person	Position	Phone	Email	Miscellaneous Information	Possess the relevant information	Is most likely to have the ability to provide relevant information	Is most likely willing to inform	Is available
1	Mr. ABC	Fleet Manager	0049 2953/...	ABC@LC1.com	Not available before 10 AM	Yes	Yes	Yes	Off in January
2	Mr. XYZ	General Manager	0049 171/...	XYZ@LC2.com	Usually very open to support academic work	Yes	Yes	Yes	Yes

Figure 26: Lead Customer Personal Information Overview Example

To increase contact persons' motivation to participate, their internal account managers at KB established the contacts and prepared the lead customers for the contact making through the researcher. Afterwards the researcher contacted the lead customers and arranged the personal meetings.

Ultimately the study had one research participant per lead customer, the final buying decision maker, who was interviewed for the study. This has several advantages and disadvantages for the project:

Advantages:

- Keeps efforts for managing the interviews at manageable level for a single researcher.
- No need to align and calibrate potentially varying opinions amongst multiple buying decision process stakeholders within one lead customer.
- No risk of individual, differing interpretations of the research questions amongst multiple participants per lead customer.

Disadvantages:

- Risk of not having identified the final decision maker.
- No chance for intra lead customer data triangulation.
- Risk of data access in cases of sudden unavailability of participant or personal tensions/lack of sympathy between interviewer and interviewee.

Through controlling the disadvantages, the single respondent approach proved to be the most suitable approach. Due to the structured participant identification approach, which was supported by the scheme from Gläser and Laudel (2010), the most suitable participants, the final buying decision makers, were identified and selected. The lack of intra lead customer data triangulation was covered by critically challenging interviewees on answers and in situations where subjectivity was sensed by the interviewer. No situations of data access problems due to short notice cancellations of meetings or interpersonal sympathy issue occurred.

3.4 Method of Data Collection

A research method is the systematic approach to collect and analyse data using defined tools and procedures. It is devised to draw conclusions concerning the research questions from available data and must fit with the philosophical paradigm of the research project, (Creswell & Creswell, 2017; Mackenzie & Knipe, 2006) i.e., constructivism for this study. The research method should establish a transactional and dialectical dialogue between researcher and study participants, to foster informed consciousness (Easterby-Smith et al., 2015). The above sections have decided on the methodology of lead customer approach which is implemented in a qualitative design comprising nine participants.

3.4.1 Semi-Structured Interviews as Method of Data Collection

There are two types of qualitative data, primary and secondary data. Secondary data has not been generated for the purpose of research but is useful for the research project. Primary data is explicitly collected for the study purpose (Easterby-Smith et al., 2015).

Due to the exploratory nature of this study, assessing the impact of customer value anticipation on competitive advantage in the German SPCE industry, no secondary data concerning the research questions is available. Primary data must be collected.

Focus group analysis and interviews are established forms of primary data collection. Focus group analysis refers to group interviews with all participants aiming at the joint generation of knowledge and meaning (Easterby-Smith et al., 2015). Focus groups are helpful when interaction and dynamics within the group of participants are an additional object of interest (Bryman & Bell, 2015; DiCicco-Bloom & Crabtree, 2006). This approach is not suitable for this study, since the synchronisation of several customer representatives of different, partially competing business, in one place at one time is hardly feasible. Furthermore, insight into potential group dynamics is of no relevance to this study.

Interviews are the most established strategy of data collection in qualitative studies (Bryman & Bell, 2015; Saunders et al., 2009). Interviews refer to a directed conversation concerning a specific topic. They are based on a series of questions in order to explore a topic of interest within a defined context (Easterby-Smith et al., 2015). According to Robson (2002, p. 59) interviews are useful “...to seek new insights”. Moses and Knutsen (2012) explain that interviews offer themselves for constructivist research to understand motivations and drivers behind phenomena and to gather background information. According to Bryman and Bell (2015), interviews provide deep and unique insight into the specific cases under examination and give access to interview partner’s views, beliefs and emotions.

There are three types of interviews: Structured, semi-structured and unstructured interviews (DiCicco-Bloom & Crabtree, 2006).

- Structured interviews are based on a list of predefined questions presented in a definite order. Background Information is not desired. Structured interviews aim at assessing the reliability and validity of a measurement instrument (Bryman & Bell, 2015) and support quantitative research. The structured interview technique is inadequate due to its quantitative nature and does not correspond to the study rationale and its qualitative character.
- Unstructured interviews are frequently applied in ethnographic studies and resemble guided conversations (DiCicco-Bloom & Crabtree, 2006). They are not based on a set of pre-determined questions, although the interviewer has a general topic in mind. Sometimes just one initial question is asked to initiate a conversation developing self-reliantly later. The atmosphere is flexible, informal, natural and unrestricted (Edwards & Holland, 2013). The unstructured interview is loose in format and lacks reproducible structures. It is inadequate to reflect the conceptual framework of the study reliably and reproducibly and thus inadequate in this context.

- Semi-structured interviews are in between these types: They use pre-formulated questions. However, the method allows the researcher to change their order flexibly, depending on the development of the discussion. Semi-structured interviews invite open in-depth conversation about interviewees' beliefs and feelings concerning the topic (Saunders et al., 2009). Due to their interest in social factors and personal positions semi-structured interviews are a typical qualitative research technique. Semi-structured interviews fit best with the methodological requirements and concept of this study. They are qualitative and at the same time guided by a structure, corresponding to the conceptual framework. Semi-structured interviews balance flexibility and structure and offer the opportunity to include unexpected but relevant aspects (Saunders et al., 2009). Thus, semi-structured interviews with the selected lead customers are apt for the purpose of this study and planned in the following.

Although semi-structured interviews are widely applicable, there are some conceptual weaknesses, which can be mitigated by adequate planning:

- Interviews are difficult to replicate due to questionable reliability (Mills & Casey, 2012).

The interviews are given structure through an applied interview guide that is corresponding to the study's conceptual framework, fostering replicability.

- Another common concern with the interview technique is that small sample sizes impair generalisability and external validity (Bryman & Bell, 2015).

This study does not aim at generalisation but is of inductive, exploratory nature, and as such it intends to generate a first body of knowledge that prepares the ground for future research on the subject.

- Interviews tend to produce plenty and relatively unstructured qualitative data. Recording, structuring and interpreting this information is a complex task for a single researcher (Bryman & Bell, 2015).

Semi-structured interviews control the variety of provided information and limit that effort (Saunders et al., 2009). Digital recording allows automated, digital transcription (e.g., using the software tool NVivo) into written format for textual analysis. This limits the necessary efforts and makes data from semi-structured interviews manageable for a single researcher.

Concluding, potential issues of semi-structured interviews are mitigated and controlled. Thus, the technique is apt for data collection for this study. The next section discusses the development of the interview schedule.

3.4.2 Interview Schedule

The interview schedule comprises the design of interview questions and the practical implementation of the interviews.

Qualitative, semi-structured interview questions should be designed to generate data answering the research questions (Gläser & Laudel, 2010). Here, the generated data should enable the researcher to conclude on the customers' current and future value preferences (customer value anticipation) and on the dealer's value creation chain.

Interview questions should use appropriate terminology and syntax, be comprehensible and use the terminology and language of the research participants. They should be formulated in open-ended (Bryman & Bell, 2015), direct and plain language (DiCicco-Bloom & Crabtree, 2006). These recommendations are considered in the research question formulation of this study. Since the mother tongue of the

interviewees is German, the interviews are conducted in German to facilitate understanding and to enable the interviewees to express themselves precisely.

An interview guideline listing the intended questions is used to facilitate a smooth and directed flow of the conversation ensuring that the interviews correspond to the conceptual framework underlying the study (Bryman & Bell, 2015). It contains an introductory section that deals with category data, introducing and explaining the research and its background to the interviewee. Furthermore, it covers ethical issues and deals with organisational aspects like interview duration and confidentiality. In this study, the interview guide was additionally employed as a template for the researcher to take structured notes on relevant aspects of the interview. This study's interview guide can be found in Appendix I: Interview Guide.

The interviews refer to customer value creation and customer value anticipation and for each section refer to the categories of customer value creation (refer to section 2.2.2; Figure 8), the categories of the work model (Figure 20).

- Functional/instrumental value
- Symbolic/expressive value
- Cost/sacrifice
- Experiential value

Using this classification matrix, the semi-structured interview questions result as follows:

	Customer Value Creation	Customer Value Anticipation
Functional-instrumental Value	<p>Which concrete desired attributes of novel SPCE related products/ service can you imagine that could help you tackling your future challenges?</p> <p>What should such product service do for you?</p>	<p>Looking ahead, what trends do you think will impact your business the most?</p> <p>How do these trends influence your future strategic direction and business goals?</p> <p>In how far do you think your SPCE dealer could help you in tackling the future challenges?</p>
Experiential Value	<p>Describe the relevance of the relationship-quality with your SPCE dealer for buying-decision making.</p>	<p>What role will the relationship with your dealer play in future buying-decisions? Will it change versus today?</p>
Cost/Sacrifice	<p>Describe the role the initial purchase price plays in your SPCE buying decision making?</p> <p>Besides initial purchase price <u>do</u> you consider other cost/sacrifice aspects in your SPCE buying decision making?</p>	<p>How will the role of price develop looking forward?</p>
Symbolic-Expressive Value	<p>Can you elaborate on the relevance of SPCE brand image for you and the potential influence it has on your SPCE purchase decision making?</p>	<p>How do you foresee the influence of brand image on your purchase decision making to change in the future?</p>

Table 8: Interview Questions by Customer Value Category

3.4.3 Ethical Considerations

Research ethics are meant to protect all stakeholders of a research project. They minimise potential harm and grant research integrity. Furthermore, they assure trust and generally increase the sum of good (Israel & Hay, 2006). In social science it is mandatory to ensure that ethical principles are respected throughout all research

phases (Gläser & Laudel, 2010). According to the University of Gloucestershire's Research Ethics Handbook (2018, p. 4) they intend to:

- “Ensure that any foreseeable harm to the physical, psychological, social well-being, health, values and dignity of participants, researchers and other stakeholders is minimised, and that
- the rights of participants, researchers and other stakeholders are upheld, including participants' right to informed consent, privacy, confidentiality and anonymity.”

For humanity reasons, which must be the first principle of every researcher, the avoidance of physical and psychological harm to the research stakeholders was an important aspect in this study. Research interest may never impair the interests of anyone involved or affected by the research. The assurance of privacy, confidentiality and anonymity was extremely important to the success of this study. This was because it was conducted in a business environment. Here, customer information is a sensitive resource that can heavily damage the competitive positioning of businesses if not managed properly. If, for example, the representative of a construction company states that his company struggles to comply with the ever-increasing environmental regulations, this could harm his company if this would become public. Public bodies who award contracts and for whom environmental regulations are important could disregard this construction company. Moreover, competitors could use this knowledge to discredit this company and harm its competitive positioning.

To ensure privacy, confidentiality and anonymity, and avert potential physical and psychological harm to the research participants as well as potential negative consequences for their companies, the following measures were taken:

- Participants were informed that their participation was entirely voluntary and that they could withdraw from the project at any time.

- Privacy, confidentiality and anonymity was assured through:
 - prior notification of participants on the possibility to reject data-recording devices
 - strict anonymisation of personal and company names in written documentation, reports, summaries and final thesis
 - safe storage of such data that could not be made anonymous, like interview recordings in offline storage devices that were fully and exclusively under the control of the researcher
 - data storage time limitations (storage until the University of Gloucestershire's exam board confirms the results of the dissertation)

- To ensure an informed consent between researcher and research participants, a form was signed by each research participant prior to data collection (refer to Appendix II: Participant Consent Form). This document introduces the background of the research project to the participants. It also ensures that participants are informed beforehand about their right to withdraw from the project at any time. Furthermore, it covered important aspects related to the use of the shared information, anonymity, confidentiality, and data storage aspects.

- All interviewees were treated with respect, interest, and kindness.

- The physical well-being of study participants was ensured by leaving the choice of the interview place entirely up to the interviewees, assuming that they would choose places, fitting with their preferences concerning surroundings, equipment temperature and convenience.

- Interviews were arranged so that stress for the participants was minimised:
 - no travel needs for the participants
 - interviews were planned outside the main business operation hours, ideally late afternoon

- interviews were planned to take no longer than 78 minutes to avoid an overly impactful interruption of the daily routines of the interviewees.

No interviewee withdrew from the project or refused digital data collection devices. To ensure that the ethical measures were effective and allow potential corrections, interview participants were asked afterwards on their perception of the interview regarding stress, convenience and potential discomfort with the interview questions. No interviewee reported any aspect that would have meant a violation of the University of Gloucestershire's Research Ethics (2018, p. 4) or that would have required correction of the ethical measures taken.

3.4.4 Interview Implementation

A pilot interview helped to guarantee the comprehensibility of the questions and to ensure that the developed data collection plan would work in practice as to timing, data recording, and overall implementation. The pilot interviewee is personally well known to the researcher and due to this established relationship was open to provide critical feedback about the comprehensibility and his personal perception of interview questions. Pilot interviewee feedback and additional personal interviewer perceptions were taken down and used to improve the interview organisation as follows:

- The provided background information on the project itself and the role of the interview are adequate. No further information was requested.
- With a duration of 62 minutes, the interview stayed within the set timeframe.
- Using two audio recording devices was practical and important, because one device failed during the interview. It was learned that taking pre-interview recording probes to ensure suitable audio recording quality. Generally, the quality of the recordings was sufficient for transcription.

- The interviewee was struggling with two of the questions concerning customer value anticipation. The respective questions were reformulated in a more direct style, using more simple terminology and shorter, more targeted sentences. The reworked questions were presented to the pilot interviewee candidate after revision. He acknowledged that now he was able to better locate himself within what was intended by these questions. The questions shown in Table 8 represent the final version of the questions.

The described measures ensured the frictionless implementation of the planned interviews and validity of data collection.

The optimal interview duration was calculated considering the time needed to flexibly cover all intended questions. The time plan was as follows:

▪ Introduction:	10 minutes
▪ 12 main interview question * 4 minutes:	48 minutes
▪ Closing:	05 minutes
▪ Reserve for unforeseen developments/questions:	15 minutes

	78 minutes

All interviews stayed within this defined timeframe.

Corresponding to Bryman and Bell (2015); DiCicco-Bloom and Crabtree (2006), interviews were organised and scheduled in advance concerning dates, timing and locations. Bryman and Bell (2015) advise to choose a convenient, quiet and comfortable interview setting possibly outside the business routine, a demand that could mostly be met. Seven interviews were held personally. One was done by video conference and one via phone. The interviewees determined the interview-settings. Out of the seven personally held interviews, six took place in the premises of the interviewees' companies. Three interviews took place in quiet, suitable meeting rooms, three in interviewees' offices. One interviewee chose his convenient, private

garden house as the interview location. The video and phone interviews took place in undisturbed home office rooms. Six interviews in total could be conducted without external interruption. Three were interrupted by phone calls of the interviewee. Nevertheless, the interviewees arranged quiet interview atmospheres that allowed concentrated conversations.

Overall, thanks to respecting the discussed ethical and practical guidelines, as well as the structure fostered by the interview guide, all interviews went directed, smoothly and proceeded in a very collaborative manner. Interviewee well-being was ensured throughout the interview sessions. All interviewees confirmed at the end of the interview that they enjoyed and valued the conversation because of the style, the atmosphere and especially because of the context that was of high interest to all participants.

3.5 Data Analysis

Data analysis is required to answer the research questions of the study using the data retrieved from the empirical project (Creswell & Creswell, 2017; Moses & Knutsen, 2012). Strategies of data analysis should be guided by the research strategy, the conceptual framework and the research questions (LeCompte & Schensul, 1999). The study uses a qualitative methodology, which results qualitative data and requires a qualitative technique of data analysis. Data analysis comprises the stages of data reduction, data display and drawing conclusions (Miles & Huberman, 1994). Data reduction selects relevant data to focus on and develops an evaluation plan. Data display refers to the organisation and presentation of complex and extensive datasets in a comprehensible manner. Conclusion drawing interprets and explains the evaluation (Kawulich, 2004; Miles & Huberman, 1994).

In the following, the data analysis strategy of the study is developed, explained and justified.

3.5.1 Interview Data Coding and Presentation

This study used a template analysis to evaluate the interview protocols. For this technique a pre-defined coding template is applied in data analysis. The codes reflect the theoretical concepts underlying the study. The codes were hierarchically mapped to ensure consistency throughout the analysis phase and for transparency to the reader.

Template analysis summarises themes that are important to a study and organises them in a meaningful manner to allow a thematic, qualitative analysis. Codes are defined in advance, but the approach remains flexible to allow unexpected themes to emerge. Codes can still be changed or rearranged, or new codes can be added as the researcher works through the data (King, 2012). This makes it explicitly applicable to exploratory research. The approach is useable within a range of philosophical positions. It allows the researcher to keep a flexible position to reality and to assume multiple truths (King, Cassell, & Symon, 2004). As such, it fits well with the epistemological and ontological foundations of constructivism, the paradigm underlying this study. For this study, the analysis starts with the familiarisation with the data through several rounds of reading through. After, a first round of open coding is applied to the data, after which in a second-round codes, stemming from the research questions and the study's conceptual framework, are narrowed down and analysed for potential intra-code relationships. During the process new codes emerge, that are either supported by more data and thus kept or discarded if no further evidence is found in the data.

The computer-aided qualitative data analysis software (QDAS) NVivo is used for data analysis. QDAS software can support researchers in the preparation of their data for analysis and interpretation. It is useful to structure and analyse lengthy and multiple interviews (Bryman & Bell, 2015; Guest, MacQueen, & Namey, 2012). Access to the QDAS software NVivo was granted by the University of Gloucestershire for free, which saved time and financial resources. The software is used to apply codes to the interviewee statements and allows a systematic evaluation by issue. While working

through the interview transcripts which are uploaded to the software in a first round of open coding, texts passages fitting to one of these categories are assigned to the respective codes, using the software's drag-and-drop functionality. This strategy of data clusters enabled large sets of textual data reduced down to chunks that are relevant for answering the research questions. Working this way, focus areas shine up, as NVivo presents the analysis results in a tabular format showing for example the number of codes for each concept under study, for example "trust" and the quotes falling under each code. Using NVivo makes it easy to search the entire data set for specific statements and to jump back to its origin in the transcripts to spot potential relationships to other concepts. The software enables to the data to be saved and accessible anywhere and anytime, if stored in a data cloud. NVivo also reduces the risk of losing data and allows for flexible analysis schedules, for example working with the data when being on a business trip. On the downside, using the program was sometimes complex and familiarising with it took time, specifically because its functionality and layout is not comparable with the one of other widely used and more familiar office software. Another experienced disadvantage is that data reduction can happen too fast because it is so easy to do. That may lead to rushed conclusions and limits the chance of surprising discoveries that may be made through repeated manual data processing exercises. Once that was realised, the interview transcripts were read through in full regularly to ensure that the big picture was kept, and no relevant data and relationship was overlooked because of too early and too drastic data reduction.

The assigned codes reflect the theoretical concepts underlying the study. In a second round of axial coding, the interview results were assigned to the research questions linked to the research model in order to derive contingent answers, through the interpretation of the meaning of codes. To this end, the main codes are organised so that the research questions are addressed.

New topics are assigned, and additional codes and existing codes are changed or rearranged if necessary. This keeps the study flexible to new positions and interpretations of the topic (King et al., 2004) in line with the phenomenological understanding of constructivism (refer to section 3.1.3).

a) Guiding Codes

In correspondence with the key research questions, the guiding codes are defined as follows:

- Fields of customer value creation, in correspondence to RQ1
- Effects of customer value creation on customers, in correspondence with RQ2
- Effects of customer value creation on dealer business, in correspondence with RQ3
- Customer value anticipation, in correspondence with RQ4

b) Sub-codes

The following sub codes are assigned to further classify the main categories and results by research question:

Fields of customer value (RQ1)

In correspondence with the research model, fields of customer value creation (RQ1) comprises four categories. The detailed categories of qualitative data analysis are presented referring to the structure resulting from the coding process. Accordingly, customer value creation and anticipation concern the following four fields:

- Cost/Sacrifice
- Experiential/Hedonic/ Social-Relational Value
- Symbolic/Expressive Value
- Functional/Instrumental Value

These categories have been derived from the review of previous studies, particularly Smith and Colgate (2007) and are confirmed by the interviews. The Interviews

however, further specify the value aspects for each value creation category. For instance, the cost/sacrifice aspect comprises four items which are economic value, psychological value, personal investment and perceived risk.

Effects of customer value creation on customers (RQ2)

Sub-codes for effects of customer value creation correspond to the model categories customer satisfaction, customer trust and customer loyalty in correspondence with RQ2.

Effects of customer value creation on business (RQ3)

Sub-codes for effects of customer value creation on the dealer business comprise competitive advantage, switching barriers, cost reductions, business profitability and business value in correspondence with the research model (Figure 19) and RQ3.

Future customer value anticipation (RQ4)

The sub-codes of “customer value anticipation” are initially chosen in correspondence with the sub-codes for “value creation categories”: This classification is plausible since according to the research model customer value anticipation establishes a feedback loop to customer value creation concerning future value creation opportunities.

Interview data analysis however reveals several future trends and product innovations, that lead customers suggest or identify. These contributions are assigned new sub-codes named “Future Trend” and “Future Product”.

The textual evaluation is structured according to the codes and sub-codes. For each customer value sub-aspect, sample interviewee statements representing the respective customer value aspect are quoted. Condensing the interview results, conclusions on the overall relevance of the customer value main category are drawn. To ease identification of interview quotations they are typed in italics. Based on the collection of statements concerning each issue, conclusions concerning the research questions are drawn.

The following Table 9 summarises the coding scheme for the evaluation of the interviews:

Coding Scheme for Interview Evaluation	
Guiding Codes	Subcodes
RQ1 Fields of Customer Value	• Cost/Sacrifice
	• Experiential/Hedonic/ Social-Relational Value
	• Symbolic/Expressive Value
	• Functional/Instrumental Value
RQ2 Effects of Customer Value Creation on Customers	• Customer Satisfaction
	• Customer Trust
	• Customer Loyalty
RQ3 Effects of Customer Value Creation on Business	• Competitive Advantage
	• Switching Barriers
	• Cost Reduction
	• Business Profitability
RQ4 Customer Value Anticipation	• Cost/Sacrifice
	• Experiential/Hedonic/ Social-Relational Value
	• Symbolic/Expressive Value
	• Functional/Instrumental Value
	• Future Trends
	• Future Products

Table 9: Coding Scheme for Interview Evaluation

3.5.2 Triangulation for Critical Classification of Interview Results

Triangulation is used to critically classify the interview statements of the lead customers. Triangulation refers to the approximation of valid results by examining several perspectives in a comparative way (Flick, 2011). Data triangulation is a common strategy to confirm research validity in case study research and amend interview results by factual information. It uses at least two data sources and methods to assess an issue and compare different perspectives in order to extract common points and in this way confirm validity (Baxter & Jack, 2008; Yin, 2017).

To critically classify lead customer statements on expected future customer value aspects, the insights of the interviews are triangulated as follows:

a) Weighed against each other (concerning the interview results for RQ1 and RQ2)

To assess the reliability of lead customers' value anticipation the clarity and homogeneity of the answers collected concerning each issue is assessed. The clearer and the more homogeneous the answers are, the higher is the assumed lead customer capability for customer value anticipation. The comparison of interview results is employed in the context of RQ1 and RQ2 mainly, where further data sources apart from the interviews are unavailable, since the research questions refer to the personal impressions of the lead customers.

The following attributes are referred to in order to classify the answers:

- Correct/Accurate Attributes & Appropriate Performance:
 - Lead customers' ability to give direction to suppliers for innovative products that they believe can offer high customer value in the future.

- Appropriate Outcomes:
 - Lead customers' ability to give insight into the future goals of their organisations.

- Future Trends:
 - Lead customers' ability to provide an outlook on trends that will strongly impact the construction industry in the future.
 - Lead customers' ability to anticipate trends is assessed based on the clarity and homogeneity of the given answers.

b) Contextualised with regard to media publications (concerning RQ3 and RQ4)

To classify lead customers' assessment of future trends in a larger context (RQ4) and evaluate the impact of customer satisfaction, trust and loyalty on competitive advantage (RQ3) additionally, document analysis, a common strategy of qualitative research, is employed. Document analysis is helpful here to augment the interview

data by additional information. According to Bowen (2009, p. 33) document analysis is a process of “evaluating documents in such a way that empirical knowledge is produced and understanding is developed.”

To implement document analysis in the context of future customer value anticipation, here, public documents referring to future industry trends are evaluated to assess the relevance of lead customer estimates and recommendations. Secondary sources comprise academic publications, reports and articles on emerging trends as available from international consultancies, equipment vendor institutes, public institutions and industry-associations. These sources are screened for information on industry trends in the construction sector, that could result in shifts in SPCE customer needs. The areas of examination include technology and market developments as well as changes in the legal and social environment, as recommended by Lüthje and Herstatt (2004). A quantitative assessment scheme is used to rate the reliability of the material depending on its source, the applied research approach, topicality, and outlook horizon. The assessment criteria are assigned individual weights, representing their significance to the total assessment.

The weighting criteria are as follows:

- Assumed trustworthiness of the source: 20 %
- Methodological soundness and transparency of the applied research approach and data resources: 30 %
- Topicality of the prediction: 35 %
- Reach of the outlook: 15 %

Based on this classification, identified trends are ranked in table form as exemplified in Table 10:

Rank	Trend	Publication Type	Title	Publisher	Reference	Score				
						Source (20%)	Research Approach (30%)	Topicality (35%)	Outlook Horizon (15%)	TOTAL
10.	New Construction Materials	Study Report	Construction Trends & Developments, Annual	BauInfoConsult	BauInfoConsult, 2018	3	2	5	3	3,65
		Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3,95
		Total Score								

Table 10: Construction Industry Trend-Nomination Assessment Scheme

To reliably and transparently rank the data by relevance, each criterion (source, research approach, topicality, outlook horizon) is rated with a score between one and five. The score for each criterion is defined according to Table 11, to improve reliability and transparency of the assessment.

Score	Scale: Source	Score	Scale: Research Approach
1	Online Article	1	Research approach unclear and poorly referenced
2	Periodical	2	Research approach unclear or poorly referenced
3	Professional Consultancy Report, Governmental/Public Institution	3	Research approach partially unclear, mostly referenced
4	Academic Journal Article	4	Research approach mostly transparent, mostly referenced
5	University	5	Research approach fully transparent, fully referenced

Score	Scale: Topicality	Score	Scale: Outlook Horizon
1	2014 and older	1	9 -x Years
2	2015	2	7-8 Years
3	2016	3	5-6 Years
4	2017	4	3-4 Years
5	2018 and younger	5	0-2 Years

Table 11: Construction Industry Trend Criterion Score Schemes

The scales are constructed as follows:

a) Scale: Source

Assuming that the source of information influences its quality and trustworthiness, the information source is ranked as follows:

- Information published by universities is rated with the highest score “5”. University research emerges from scientific analysis that meets academic standards and is not biased by economic interests and thus is rated as neutral, objective and reliable.

- Information from academic journals is usually peer-reviewed and meets academic standards but varies in quality and thus is rated at the second highest score of “4”.
- Information from professional consultancies and governmental/public institutions is usually detailed, emerges from intense market research but usually is biased by partly hidden economic or political interests and thus is rated with a “3”.
- Information from articles in periodicals, are not representative or academically founded but usually represent the opinion of the author and thus are ranked with a “2”.
- The lowest score “1” is assigned to information from online articles, because these frequently lack profound information, definite data sources or authors.

b) Scale: Research Approach

An additional weighting scale is devised to measure the academic standard of the applied method of data acquisition, which, as assumed, co-determines content reliability. The scale assesses the level of compliance with academic standards, transparency about the research method and clarity on the used data sources.

c) Scale: Topicality

The topicality scale classifies content depending on the recency of the publication, assuming that topical predictions about the future are more likely to fulfil than less topical ones.

d) Scale: Outlook Horizon

The scale outlook horizon rates the length of the future outlook of the contribution on a descending scale, assuming that far-reaching predictions are less accurate than promptly forecasts due to growing uncertainty of distant events.

Summing up the weighted scores for each criterion, an overall score for each trend nomination per source results that in sum make up the total score of each trend and allow to rank the trends. The result determines the relevance of the identified trends and is useful to classify lead customers' trend estimates.

3.5.3 Integration of Results

Result integration follows the analysis of individual data from interviews and public documents and endows the retrieved data with a comprehensive meaning concerning the research question. To this end, common patterns and general themes coherent across several data sources are identified (Moses & Knutsen, 2012). The process of interpretation usually is a repetitive and integral process starting right after data collection. Initial ideas about potential themes emerge rather early but are questioned or reconfirmed in the process of detailed data analysis (Weitzmann, n.a.). In order to systematise the process of theme or pattern identification, Miles and Huberman (1994) suggest noting patterns, counting, making metaphors, clustering, partitioning variables or building chains of evidence. Identified themes or patterns should be illustrated by supporting quotes, to allow the reader to assess the analyst's understanding and interpretation and enhance the reliability of the findings.

Corresponding to the objective of this study of identifying sources of future competitive advantage, fields of customer value creation are retrieved from the interviews and public sources systematically from the beginning. The way innovation creates customer value is traced across the sources and assigned to the categories determined in the process of coding. In the process of interview- and document

analysis, the frequency of nomination of coded elements is documented. The level of impact and the meaning for the aspect under study is assessed by recognising repetitions/emphasis and by evaluating the adjectives/descriptions accompanying the respective customer value supporting concept. For example:

LC "B": *"Humans work with humans and the interpersonal relations, the sympathies, the trust that develops over time, make a **big** difference."*

LC "I": *"**Everything** happens based on trust, reliability and competency".*

LC "G": *"I believe that digitalisation will become a **monster** trend."*

This way, the key themes, respectively the main influences on future customer value generation emerge from the data analysis.

Referring to the work model, the elements appearing impactful to future customer value in the customer value chain are pursued and analysed to trace origins of the businesses' potential future competitive advantage.

3.6 Research Strategy Summary

The following paragraph summarises the research approach as developed in Chapter 3.

The study is anchored in the domain of phenomenology, based on a constructivist research philosophy and uses a qualitative research design. This approach is apt considering the nature and novelty of the research issue - the impact of customer value anticipation on future competitiveness in the German SPCE industry.

The empirical study refers back to the research model and potential causalities extracted from a review of previous research in the research field and assesses four

research questions (refer to 2.5.3), emanating from the research model (refer to Figure 20):

The novelty and conceptual openness of the research issue justifies the choice of an exploratory single case study methodology, which is ideal to assess real-life phenomena from the perspective of the involved lead customers. Semi-structured interviews are chosen as approach. They correspond to the qualitative nature of the study. Additionally, they are structured enough to link the results back to the work model and at the same time open enough to discover new, unexpected relationships and aspects.

The conceptual framework of the study guides the process of data analysis and interpretation as recommended by LeCompte and Schensul (1999). Template analysis is apt to link the conceptual foundations and research questions of the study to the empirical data. At the same time is flexible enough to value and explore newly emerging topics. To implement template analysis, interview results are coded using a QDAS software. The main codes link the results to the research questions, while sub-codes explore the relationships behind the conceptual framework. Triangulation with secondary public sources and in between the interviews is used to verify the validity of interview results.

The interpretation of results brings together the insights gained from the interviews and the secondary sources and classifies these in the context of the research model. The research model is adjusted, validated, and accomplished referring to the empirical data.

4 Empirical Study Results and Analysis

In this chapter the interview results are presented and analysed. The presentation and analysis follow the structure of the conceptual research model and the logic of the research questions.

- Section 4.1 classifies aspects of customer value creation that are relevant to customers in the SPCE business (research question 1 (RQ1)).
- Section 4.2 evaluates the effect of customers' value perception on customer satisfaction, trust and loyalty in the SPCE business (RQ2).
- Section 4.3 explores how far customer trust and loyalty create competitive advantage and business value and profitability in the SPCE business (RQ3).
- Section 4.4 analyses which factors could in future create customer value in the SPCE business (RQ4).

Progressing according to the research questions ensures conceptual congruence of the study and prevents that relevant conceptual aspects are missed in the analysis. Each sub-chapter concludes with a summary of findings.

In correspondence with the methodology of data analysis developed in Chapter 3.5, Chapter 4 presents the interview results (RQ1 to RQ4) and combines the insights with results retrieved from secondary sources using triangulation (for RQ3 and RQ4).

4.1 Fields of Customer Value Creation (RQ1)

The following paragraphs present and analyse the empirical study results that deliver insights, useful to answer RQ1.

According to the research model (Figure 20) customer value classifies in four categories:

- Cost/Sacrifice Value
- Functional Value
- Symbolic Value
- Experiential Value

These categories structure the evaluation of the interviews.

4.1.1 Cost/Sacrifice Value

The cost-utility ratio indicates to what extent the utility of using or buying the product exceeds the cost and efforts for obtaining it. Customers estimate a product if the cost/sacrifice ratio is perceived lower than one, meaning the benefit of usage should exceed the cost/sacrifice for product acquisition and operation (Ravald & Grönroos, 1996). The cost and efforts to obtain a product comprise economic expenses e.g., the price that has to be paid, the psychological effort, the personal investment, like the engagement necessary to obtain the product and the risk customers incur.

The customer value aspect of economic price comprises the initial purchase price of self-propelled construction equipment (SPCE) and the cost of operating it.

a) Purchase Price

According to the interview participants the purchase price plays a minor role for customer value creation.

LC "D": *"For us purchase price plays a subordinated role."*

LC "E": *"For me, purchase price does not stand in the foreground."*

Customer value from economic cost is based on the idea that customer value can be created by purchasing a product at a lower price, but without sacrificing quality (Walter et al., 2003). From the customer's perspective, quality in SPCE procurement is evaluated from two angles: The piece of SPCE and the aftersales service of the respective dealer. This is an inseparable bundle.

LG "G": *"Regarding machines, the cooperation with the dealer in aftersales issues logically plays a big role and not just the pure sales price."*

LC "F": *"I compare (purchase) prices. Not doing this would be foolish. Nevertheless, I do buy my machines almost exclusively from one and the same dealer. Through price comparison I ensure that prices of this dealer generally fit in. They (the dealer) are not the cheapest. But you need to put this in the overall context."*

...

"The purchase price represents the biggest chunk, but it is just one element in the cost assessment."

...

"The reliability of the machine and of the dealer supporting it is more important for me than the initial purchase price."

LC "C": *"Customers have realised that the 1,000 € that they saved on purchase price does not benefit them, when they do not have support when the machine fails and no one comes to repair it professionally."*

LC "B": *"One should not be blinded by loss leaders. Often, you pay for a cheap purchase price later, through many repairs, high down times and poor service."*

Generally, the original purchase price of SPCE was mentioned by most customers as a relevant aspect of the purchase decision. However, it is not a dominant criterion and

rather of medium to low relevance for the purchase decision. The quality and reliability of dealers' aftersales service seems to be more impactful to customer value creation.

b) Cost of Operation

In addition to the initial machine purchase price, the lead customers indicated that the cost of operating SPCE are a relevant aspect in their decision to purchase SPCE.

LC "D": *"Anything that does not work on the machine leads to follow-up-cost. Because of that, follow-up cost also play a role."*

LC "C": *"Operating cost of course play a role. They make a big difference. The bigger the machine the more important these costs become."*

LC "B": *"TCO concern indirect cost. Disregarding this cost would mean blindness."*

The interviewed lead customers believe that in addition to the initial purchase price, the operating cost of the SPCE are particularly important in the purchase decision. They are of the opinion that these cost of are more relevant than the initial purchase price. Low operational cost is an important value aspect for SPCE buyers since the products are long-term investments. High failure quotas and maintenance efforts account for a major part of the life-time cost of the machines. The acquisition price relativises over time.

c) Psychological Cost

Psychological cost refers to conflict (Lapierre, 2000), cognitive difficulties/stress and relationship cost (Ravald & Grönroos, 1996), learning cost and convenience (Woodall, 2003) and equity (Bolton & Lemon, 1999). A lower conflict level of cognitive difficulty/stress, relationship cost, learning cost and a higher level of convenience and fairness of payment can positively influence the perception of customer value. Risk associated with obtaining SPCE also relates to psychological cost. A low risk reduces

stress for customers and thereby creates value. Furthermore, psychological cost in the form of stress can be reduced and thus generate customer value by avoiding personal investments such as time, effort and energy required to purchase and use a product (Woodall, 2003). Aspects related to psychological cost were rated as very important by many lead customers.

LC "B": *"Concerning stress: In the daily operations everything needs to run smoothly. I need to be able to concentrate on my core business."*

LC "B": *"The guys on the construction sites they know very well what it means when you know your dealer and when you have an established relationship with him. Everything goes quicker and is less complex."*

LC "F": *"The trouble and the stress that susceptible machines create is not quantifiable, but it plays a big role for me. I have no interest and time to deal with such problems. My time is better invested, when I focus on my customers and construction projects."*

The interviewed lead customers highly appreciate low psychological cost. Expected savings in psychological cost can have a positive influence on their purchasing decision. Lead customers also consider a low level of complexity, ease of doing business and a low level of required personal commitment to purchase, operate, repair and maintain SPCE, important factors in their purchase decision. Thus, these customer value aspects offer opportunities to generate competitive advantages.

4.1.2 Functional Value

Functional value is related to the level to which a product has the expected attributes for the buyer, shows the performance expected by the customer and leads to the desired outcome to support buyers' goal achievement (Smith & Colgate, 2007). The

lead customer interviews confirm these categories of functional value and are coded accordingly, to assess the impact of functional value in the SPCE business.

a) Appropriate Product Attributes

It lies at hand that the functionality of machinery in the SPCE business is essential. Product attributes describe desirable product-characteristics such as durability, reliability, and product quality (Lapierre, 2000; Sheth et al., 1991).

The product details are important to functionality:

LC "I": *"What I would wish to have is an engine oil indicator that prevents the engine from starting in case of insufficient oil-level. A small detail – with a huge effect. I always look for technical solutions to prevent the ignorance and stupidity of operators."*

After all, however the function of the product counts:

LC "A": *"A machine must offer the customer what he needs most, namely quality and reliability. The easier it is to maintain, the better the reliability of the equipment, the lower the risk of machine failure and the resulting disruption to the value chain."*

Machinery in the SPCE industry is perceived as value creating when it operates reliably and shows high component quality. These features prevent operation risk and downtimes.

b) Product Performance

Appropriate performance refers to a product's capacity of achieving the desired output from a given input (= efficiency) (Sweeney & Soutar, 2001). Interview quotes prove that product performance is essential to customers.

Maintenance efforts should be possibly low in order to keep the product going and work routines efficient.

LC "A": *"Generally, it would be best if no maintenance would be necessary at all. But this is certainly a bit unrealistic. But one first step would be longer maintenance intervals, so less maintenance."*

Customers show little interest in getting deeply engaged with technical issues themselves but desire that the equipment runs smoothly and that experts are available to manage potential problems.

LC "C": *"I believe that customers want to concentrate on their core businesses more and more. Everything non-core needs to run smoothly aside and needs to be taken care of by specialists."*

LC "F": *"The trouble and the stress that susceptible machines create is not quantifiable, but it plays a big role for me. I have no interest and time to deal with such problems. My time is better invested, when I focus on my customers and construction projects."*

Product attributes and performance accordingly create customer value. All taken, however, there are only few interview contributions on product functionality and performance. Obviously, customers presuppose that the products do their job efficiently. It seems that a certain, overall product performance has become industry standard and therefore offers less room for differentiation and competitive advantage generation.

4.1.3 Symbolic Value

Symbolic value describes to what extent a product mediates a personal meaning, self-expression or has got social and conditional meaning (Holbrook, 1999, 2005; Reed II et al., 2012; Sheth et al., 1991; Sweeney & Soutar, 2001; Woodall, 2003). Symbolic value frequently involves the value customers attribute to brands as symbols for product quality, reliability and perseverance (refer to section 2.2.2). The following overview of lead customer interview statements on symbolic value supports the understanding on the extent to which symbolic value is of relevance to customer value creation in the SPCE business.

According to the research model, the benefits brands can offer to customers can be of great value and provide competitive advantage for a supplier. As the interviews reveal, these benefits, which arise from symbolic customer value, are connected to product operation quality and the ability of the servicing SPCE dealer.

a) Product Operation Quality Promise

Brands that stand for calculable product quality offer customers added value by reducing operating risk. This is the risk that products do not perform as expected or even impair the customer's value chain due to poor performance or failure (Ballantyne & Aitken, 2007). The following lead customer statements confirm this observation.

LC "C": *"A good image stands exemplary for high quality, little down time. Overall, a very good price/benefit ratio. Overall satisfying. When the machine is needed for its original purpose, then it works and does what is expected. This is what customers associated with a highly reputative brand. This means that it is less an emotional relationship, but practical considerations that speak for specific brands."*

LC "A": *"The machines (of the brand) we operate have run reliably in the past. This is the experience we made. It is a good portion of trust and peace of mind that*

grew over the years.” ... “A machine must offer the customer what he needs most, namely quality and reliability. This is best embodied by established brands.”

These statements indicate that lead customers perceive an increase in product and brand value if operation quality and reliability is maximised, meaning the risk of operation is minimised. Conversely, a perceived reduction in operating risk is the result of positive brand experience.

SPCE customers reconnect brand quality to product performance above all, whilst the brand as a symbol is less important than for consumer products. However, customers develop quality expectations due to positive experience with the brand and reconnect the brand symbols to operation quality due to positive prior experience.

b) Service Quality Promise

The interviews reveal that product reliability and quality in the SPCE industry largely depend on the service quality of the dealer, who takes over maintenance and repair work. Serviceability describes the ability of a supplier to serve its customers. Serviceability offers customer benefits in the application of the product and in the cooperation with the supplier (Ballantyne & Aitken, 2007). When asked about the relevance of brands in the SPCE industry, most lead customers state that the service experience they have had with a particular brand has a strong influence on future purchasing decisions.

LC “B”: *“This has a lot to do with experience and trust. As I said, reliable machines and an even more reliable aftersales service when we have machines failure are an extremely important aspect to us in our daily business and for our purchase decisions. The (SPCE) brand that we run, and I explicitly include the servicing dealer in that, is connected to a certain experience based on which I form expectations for the future, namely that it will continue perform as satisfactory as so far. This makes the purchase decision for this brand easier.*

You know what you will get. This makes it more difficult for unknown brands.”

LC “I”: *“Brands play an important role in our purchase decision-making. A strong brand stands for reliable aftersales service.”*

LC “C”: *“What matters most about a brand is that they have a service department that is available when I need them. The cooperation with the dealer’s workshop staff must work properly. Competent help must be available, and problems must be solved fast and adequately.”*

In the SPCE business the dealer stands for the brand they distribute, and the service quality provided that represents the brand image of the product. Product quality and service quality are inseparable attributes of serviceability in an industry requiring high repair and maintenance expertise to safeguard product quality over the whole lengthy period of utilisation.

The above interview statements show that in the SPCE industry the service competence of the dealer is decisive for the image that customers have of specific brands. The dealer is more important than the brand of the product itself. The dealer service quality expected by the customer and the trust in the dealer have a strong influence on the purchase decision.

4.1.4 Experiential Value

Experiential value has been defined in Chapter 2.2.2 as a product’s capability of delivering customer value by stimulating desirable feelings and emotions (Sweeney & Soutar, 2001). Experiential value refers to sensory impressions, social and emotional relationships (Sheth et al., 1991). The interviews reveal that experiential value is of high practical relevance to customers in the SPCE business.

In the SPCE business, however, experiential value concerns the social-relational aspect above all. The interviews reveal that customers estimate networking and connectedness and specifically trust-based personal relationship as value creating factors. The data gathered by evaluating the interviews is coded accordingly.

a) Networking and Connectedness

Network relationships describe the benefits customers derive from their supplier relationships by giving them access to resources that can improve their business processes (Möller & Törrönen, 2003). Connectedness refers to the level of integration between a customer and his supplier. Networking produces connectedness and both generate customer value. That is the case, when customers obtain improved quality, more accurate planning/forecasting, more efficient supplier support and lower transaction cost as a result of their connectedness with the supplier (Ulaga, 2003).

In the SPCE business, connectedness with suppliers is e.g., achieved by internet-based, data exchange technology. High-tech equipment is supported by technology, linking SPCE equipment with the servicing dealer over the air. This way, the supporting dealer can remotely analyse technical failures and eventually even directly repair the machine, thereby minimising down times. Customers estimate this functionality.

LC "A": *"Through Komtrax (a GPS machine monitoring system of the manufacturer Komatsu) they (the dealer) get the machine's error code directly fed into their system. Even before we report the malfunction. In most cases they can directly tell you the root cause of the problem. This leads to a reduction of machines downtimes and less delay on our construction sites."*

High technological standards require and enable increasing levels of interconnectedness with service partners as LC "G" explains.

LC "G": *"Machines are becoming more complex and more difficult to repair and to maintain. That means in return that we are becoming more dependent on*

our suppliers and in that, trust and a close relationship will play an even bigger role as today.”

LC “G” explains that connectedness increases customer value, since close cooperation with the provider enhances support and service quality and reduces operation risk. Additionally, trust contributes to connectedness.

Business efficiency in the construction sector depends on the operability of the machines and continuous service is necessary to ensure functionality. Long-lasting customer-dealer connections ease the scheduling of maintenance and repair work. When customer and dealer employees cooperate closely, machines can be monitored continuously by the dealer so that machine failures can be anticipated and avoided through preventive repair and maintenance. This can prevent costly downtimes and thereby connectedness can generate customer value.

b) Personal Relationships

Personal relationships are psychological and social bonds between customer-employees and supplier personnel. They create customer value in the form of social benefits e.g., the perception of being part of a social group (Grewler, 1995). Social bonds enhance trust and mutual understanding between customer and supplier personnel. Harmonious personal relations frequently ease problem-prevention and enhance problem-solving efficiency (Ulaga, 2003).

Trust between customers and supplier implies that reoccurrence of positive past behaviour and consequent future cooperation is expected (Chiu et al., 2012; Williamson, 1993). Trust provides value to the customer in the form of a purchasing decision. Trust eliminates search cost and generally reduces transaction cost, leading to increased profitability (Ulaga, 2003). Personal relationships are very frequently mentioned as key sources of customer value in the lead customer interviews.

- LB "B": *"Humans work with humans and the interpersonal relations, the sympathies, the trust that develops over time, make a big difference."*
- LC "H": *"Trust into the acting people generates trust into the supplier and through that, trust into their products."*
- LC "C": *"When a relationship has been established, you begin to know and respect each other. That generates trust. This gives you a feeling of security, that you can count on each other in difficult situations. It gives you a kind of peace of mind."*
- LC "G": *"We want to have a good relationship to the acting people at our suppliers and we want to trust them."*
- LC "I": *"Everything happens based on trust, reliability and competency. The first deal is arranged by the salesman, all following ones are the result of reliable aftersales services."*
- LC "F": *"We are all human beings, and we cannot escape our human characteristics and desires. This is also true for our professional life. Also here, or maybe even specifically here, we strive for security, a good feeling, satisfaction and interpersonal interaction and acceptance. And the base for all that, in my eyes, is trust. Trust, that a decision made does not need to be regretted or justified. Trust is also the base for establishing a good relationship with business partners, that pretty often can grow into a friendship. And then, similar to the private world, you prefer dealing with people you like and that you have a good relationship with than vice versa. All that explains in my eyes, why the interpersonal aspect has such a high relevance in buying decision-making. I could not imagine placing an order for a 200,000 euros machine, without a good feeling, without trust into the acting people. Because they are the ones who later on have to ensure that what was promised is realised and kept."*

LC "D": *"I firmly believe that as long as humans are the decision makers, trust plays the major role. It is so important, because it can help to reduce the collection and analysis of information through existing trust. When I have a high opinion of my suppliers and the acting people there, I trust their statements and assume that they will still be present in a few years, to help me out if problems should occur. Once such level of trust is there, it is very important and helpful."*

LC "B": *"With the ever-growing complexity of machines (...) you need a partner, this is how we call our dealer, who runs when you call for him. This gets more important as construction projects are planned more and more tightly. No one can afford machine-down times. In such situations the dealer needs to come with solutions. If you don't trust him in that regard, you cannot collaborate with him."*

The gathered interview statements indicate that healthy interhuman relationships are very valuable to lead customers and are extremely important drivers in the buying decision-making process. Customers agree that the value the machinery creates for their business largely depends on the establishment of a personal and lasting relationship with the dealer staff. Trust appears a very impactful driver of the quality of personal relationships.

c) Dealer Responsiveness

Responsiveness results from strong social relationships and refers to the supplier's ability and willingness to respond to changing customer needs. The resulting customer value consists in the reduction of cycle time in the supply chain and the ability to benefit from rapid adaptation to changing conditions (Handfield & Bechtel, 2002). Lead customer "B" exemplary emphasises the high relevance of responsiveness in the SPCE industry.

LC "B": *"With the ever-growing complexity of machines (...) you need a partner; this is how we call our dealer, who runs when you call for him. This gets more important as construction projects are planned more and more tightly. No one can afford machine downtimes. In such situations the dealer needs to come with solutions. If you don't trust him in that regard, you cannot collaborate with him."*

Responsiveness is influenced by stable social relationships and mutual understanding between customer and supplier personnel. These two drivers of responsiveness foster constructive cooperation, communication, and timely response to problems, as the statement of LC "B" shows.

LC "B": *"The guys on the construction sites they know very well what it means when you know your dealer and when you have an established relationship with him. Everything goes quicker and is less complex."*

Responsiveness in the SPCE sector matters to the interview lead customer in the form of fast reactions to machine failures causing value chain interruptions. Given this important influence of responsiveness on customer operations this field has to potential to generate meaningful customer value.

4.1.5 Summary of Identified Fields of Customer Value Creation

Summarising the points on fields of customer value creation extracted from the interviews, the categories suggested by Smith and Colgate (2007) and introduced in section 2.2.2 are confirmed.

a) Summative Impact of Cost/Sacrifice on Customer Value Creation

The analysis of cost and sacrifice factors influencing customers' purchase decision process in sum (section 4.1.1) shows three important points:

- Lead customers care about SPCE purchase prices. They expect the offered price of SPCE to be within a certain corridor to qualify the offer for further consideration. Beyond that the purchase price has only a limited impact on customer purchase decision making and thus offer limited potential for value generation.
- The operating cost of the machines are more decisive for the customer's purchase decision than the initial purchase price and offer higher customer generation potential for the dealer.
- Psychological cost in the form of stress, relationship cost and learning cost affect the customer value achieved. Lead customers specifically appreciate the reduction or avoidance of SPCE-related stress. Psychological cost avoidance can create strong customer value.

Table 12 summarises the textual insight presented above in a tabular format for a better overview. It indicates the relevance of each customer value aspect regarding their impact on customer value perception by the symbol “+” for low relevance, “++” for intermediate relevance and “+++” for high relevance.

Customer Value Aspect	Customer Value Aspect Sub-Category	Impact on Customer Value Perception
Cost/Sacrifice	Economic (Price)	+
	Economic (Cost of Operation)	++
	Psychological	+++

Table 12: Impact of Cost/Sacrifice Value Aspects on Customer Value Perception

b) Summative Impact of Functional Value on Customer Value Creation

Functional value is preconditional to customer value but hardly stated explicitly in the interviews. Apparently, SPCE functionality is presupposed by customers. Functional

value is represented by product attributes and product performance, where reliability and product quality are of particular importance. Due to the low frequency and degree of details provided in the interviews, both categories of functional value are rated as intermediate regarding their customer value generation capacity.

Customer Value Aspect	Customer Value Aspect Sub-Category	Impact on Customer Value Perception
Functional Value	Product Attributes	++
	Product Performance	++

Table 13: Impact of Functional Value on Customer Value Perception

c) Summative Impact of Symbolic Value Perception on Customer Value Creation

The analysis of the interview data in relation to the meaning of symbolic (brand related) customer value in the SPCE industry reveals that service experiences that tie customers to specific brands are a key source of customer value. The brand the dealer distributes, determines customer expectations of the dealer service quality and in result, product operation quality. This experience is closely related to the dealer who represents the brand of the product. The service provided by the dealer is more important than the machinery-brand as a symbol for customer brand perception. Some lead customers explicitly emphasise that interhuman relationships with the dealer company represent the essence of the customer value of a brand.

The data shows that for the group of interviewed lead customers the quality of the product and more importantly the service quality of the dealer is essential to customer perception of symbolic value in the SPCE business. Customers develop expectations on the brand based on prior positive experience with product operation quality and dealer service quality. Dealer service quality is decisive towards ensuring product operation in the long run.

Customer Value Aspect	Customer Value Aspect Sub-Category	Impact on Customer Value Perception
Symbolic (brand-related) Value	Quality Promise	+++
	Service Promise	+++

Table 14: Impact of Symbolic Value on Customer Value Perception

d) Summative Impact of Experiential Value Perception on Customer Value Creation

The focus concerning the development of experiential customer value in the SPCE business, according to the interviews is on social-relational aspects of the customer-dealer interaction. These comprise the value categories of networking & connectedness, personal relationships and responsiveness (Smith & Colgate, 2007).

Connectedness, in the sense of a close informational integration of customer and supplier, is seen as a source of value by several interviewees. Connectedness enables more efficient supplier support and reduces transaction-cost. In total, the customer value delivery potential due to connectedness is intermediate.

Personal relationships are the most frequently and most strongly stated sources of customer value in the lead customer interviews and are mentioned by virtually all interviewees. Personal relationships seem to be the core driver of customer value in the SPCE industry accordingly. Personal relationships can improve mutual understanding, enable problem-prevention, enhance problem-solving efficiency and reduce search and transaction cost.

Responsiveness results from personal relationships and refers to dealer readiness and capacity to provide instant support in case of customer problems with the machinery. Responsiveness is essential for customers to run their businesses efficiently and hence influences customer value perception. In comparison with networking and connectedness and personal relationships, its potential for customer value generation is rated as intermediate.

Customer Value Aspect	Customer Value Aspect Sub-Category	Impact on Customer Value Perception
Experiential/Hedonic/Social-relational Value	Networking & Connectedness	++
	Personal Relationships	+++
	Responsiveness	++

Table 15: Impact of Experiential/Hedonic/Social-Relational Value on Customer Value Perception

Summarising the interview insights on determinants of customer value perception in the SPCE business the research model categories (Figure 20) of cost/sacrifice, functional value, symbolic value and experiential value can now be refined further referring to the aspects the interviews reveal. The following

Figure 27 summarises categories and impact levels of determinants of customer value perception.



Figure 27: Determiners of Customer Value Perception

Figure 27 visualises that according to the interviews the avoidance of psychological cost (in the category cost/sacrifice), symbolic value and personal relationship value (in the category experiential value) are of greatest importance to the surveyed lead customers in the SPCE business, while purchase price and functional attributes are less so. All taken the categories of symbolic and experiential value score higher than the categories cost/sacrifice and functional value, which indicates that soft and psychological aspects are perceived as more important value drivers than factual product attributes and economic pricing.

4.2 From Customer Value to Satisfaction, Trust and Loyalty in the SPCE Business (RQ2)

Based on RQ2, section 4.2 evaluates the effect of customer value perception on customer satisfaction, trust and loyalty in the SPCE business. According to the research model (Figure 20) derived from the review of previous studies, customer value creation becomes visible in the form of customer satisfaction, which contributes to customer trust and loyalty. Looking back at the research model, the interrelationship between customer value creation, satisfaction, trust and loyalty comprises four part-effects, which are discussed step by step for the SPCE business in the following paragraphs, as illustrated in Figure 28. The numbers shown in the arrows represent the section number in which the respective issue is treated.

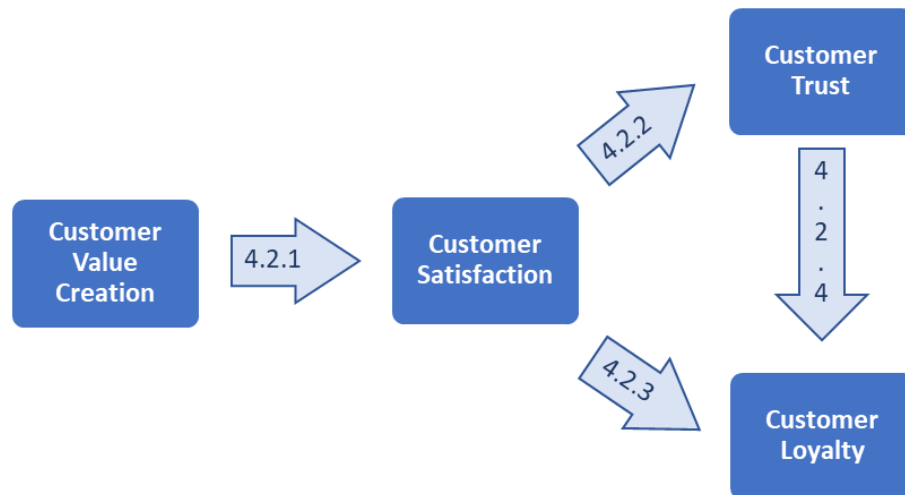


Figure 28: Customer Value Creation Chain in the SPCE Business – Organisation of Arguments

The result of the interview-based analysis is a customer value creation chain, corresponding to the scheme derived in the literature review section in Chapter 2, but specified for the SPCE business.

4.2.1 From Customer Value Creation to Customer Satisfaction in the SPCE Business

According to the research model and as developed in theory in section 2.3.2, customer satisfaction results when customers perceive that product performance meets or exceeds customers' expectations (Kumar & Reinartz, 2016). This process of customer satisfaction generation is equally mapped by the disconfirmation model (Oliver, 1980; Parasuraman et al., 1988) (refer to Figure 11). The interview results support the assumption that customers in the SPCE business are satisfied when their value expectations are met or overfulfilled. The interviewees detail three major factors that contribute to customer satisfaction in the SPCE dealer relationship, these are:

- a) Sales and Service Competence
- b) Reliable Aftersales Service
- c) Supplier Integrity

The following paragraphs detail these understandings.

a) Sales and Service Competence

Ability describes a set of skills, characteristics and competencies in which the provider is highly capable, and which are highly relevant for the customer (Mayer, Davis, & Schoorman, 1995). In the SPCE sector ability is paralleled to sales and service competence, as the exemplary below interview statements show.

LC "C": *"The cooperation with the dealer's workshop staff must work properly. Competent help must be available, and problems must be solved fast and adequately."*

LC "I": *"Everything happens based on trust, reliability and competency. The first deal is arranged by the salesman, all following ones are the result of reliable aftersales services."*

LC "E": *"We require reliable support. The trust into the supplier-staff, into his competency and reliability must be 100 %."*

To convince customers of the competencies of an SPCE dealer, the performance of the provided business routine, professionalism and personal relationships are important. LC "I" explains that he was impressed that the owner of a large dealer organisation took the time to visit him personally three times to establish a personal relationship. During those visits, he presented his market entry concept of mutual benefit for dealer and customers. He tried to convince the customer that his organisation is capable to satisfy its customers and that he himself stands for his organisation's values like reliability and honesty. This personal interaction, the homogeneity of business values of both partners and the concept of benefit for both parties nurtured the customer's confidence in the capability of the dealer and had a major impact on his decision to try this new business partner out.

b) Reliable Aftersales Service

In the SPCE sector, competence requirement does not end with the closure of the sales contract. Ideally, a year-long service partnership starts as soon as the customer utilises the equipment, he has bought. Customer satisfaction, accordingly, largely depends on the aftersales service provided, which comprises advice on usage, maintenance and repair of the equipment.

LC "I" describes the functionality of this concept in real-life SPCE environment and explains, *"The first deal is arranged by the salesman, all following ones are the result of reliable aftersales services."*

LC "B" explicitly highlights the relevance of the aftersales service to satisfy the customer: *"This has a lot to do with experience and trust. As I said, reliable machines and an even more reliable aftersales service are important. When we have machines failure aftersales service is an extremely important aspect to us in our daily business and for our purchase decisions. The (SPCE) brand that we run, and I explicitly include the servicing dealer in that, is connected to a certain experience based on which I form expectations for the future, namely that it will continue perform as satisfactory as so far. This makes the purchase decision for this brand easier. You know what you will get. This makes it more difficult for unknown brands."*

LC "C" also emphasises the high relevance of aftersales service quality for customer satisfaction: *"What matters most about a brand is that they have a service department that is available when I need them. The cooperation with the dealer's workshop staff must work properly. Competent help must be available, and problems must be solved fast and adequately."*

These statements illustrate that sales and after sales performance are considered inseparable. The customer is satisfied with the dealer since he can trust that he in being offered high-quality machinery as well as later excellent service in the operation phase.

c) Supplier Integrity

A precondition to develop customer satisfaction is supplier integrity. This stands for the extent to which a supplier bases their activities and beliefs on a set of principles that are acceptable for the customer (Mayer et al., 1995). This concept is relevant in the SPCE sector. LC "H" explains for instance: *"I only work with partners that are reliable, honest and fair, because this is the way we act as well."* LC "G" mentions: *"Well it is important that I have a good understanding of the other party. That I know what he means and that he puts himself into our shoes when he assesses situations and thereby generates an understanding what really matters to us."*

To gain customer satisfaction, suppliers need to define their business mission, values and code of behaviour according to those principles and establish a corresponding corporate culture. Customer satisfaction is supported when they can trust that their supplier behaves ethically correct - even in case of difficulties and failure.

To sum up, sales and service competence, reliable after sales service and supplier integrity are essential to satisfy customers. The interviews thus differentiate the cause-and-effect relationship of customer value creation and customer satisfaction, which so far has roughly been described referring to the confirmation-disconfirmation paradigm by three concrete enablers typical for the SPCE business:

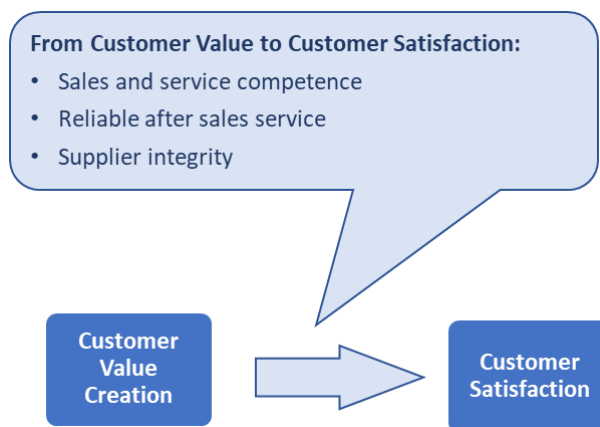


Figure 29: From Customer Value creation to Customer Satisfaction in the SPCE Business

4.2.2 From Customer Satisfaction to Customer Trust in the SPCE Business

The review section 2.3.3 has shown that customer satisfaction contributes to customer trust when positive service experiences are repeated. The interview results confirm and specify this cause-and-effect relationship concerning its mechanism in the SPCE business.

a) Satisfaction Creates Trust

The interview results indicate that there is a high likelihood that trust emerges in the customer-dealer relationship, when positive initial experiences have been made.

As LC "B" accordingly explains: *"The (SPCE) brand that we run, and I explicitly include the servicing dealer in that, is connected to a certain experience based on which I form expectations for the future, namely that it will continue perform as satisfactory as so far. This makes the purchase decision for this brand easier. You know what you will get. This makes it more difficult for unknown brands."*

This statement is psychologically founded and confirms established theories on the relevance of trust in the supplier-customer relationship (Deng et al., 2010; Kabiraj & Shanmugan, 2011; Singh & Sirdeshmukh, 2000). In the beginning of a new customer relationship, a salesman attempts to establish trust between him and the customer. When no positive past experiences of the trustor (customers) with the trustee (salesman) exists, customers could initially be reluctant. The customer has to trust in the vendor's promises of future value delivery. At this stage, the customer needs to evaluate the level of preliminary trust in the vendor and the level of risk they incur when entering a lasting relationship with the salesman/dealer.

Trust has an immense, positive effect on the quality of personal relationships and customer value that stems from it. It is a key variable in the development of long-term relationships. Trust creates social bonds and fosters mutual understanding between

customer and supplier personnel. Thereby, it enhances problem-prevention and problem-solving efficiency (Ulaga, 2003). LC "1" formulates it this way: *"Everything happens based on trust, reliability and competency. The first deal is arranged by the salesman; all following ones are the result of reliable aftersales services."*

To gauge the pros and cons of choosing a dealer, the customer assesses his level of sales competence, service ability, and integrity. In case of repeated satisfactory contacts, the customer finds associated risk levels acceptable and establishes a lasting business relationship. LC "B" confirms this: *"When a relationship has been established, you begin to know and respect each other. That generates trust. This gives you a feeling of security that you can count on each other in difficult situations. It gives you a kind of peace of mind."*

This statement illustrates that the effect of satisfaction on trust is not a one-way route but a repeatable and self-enforcing process:

b) Repetitive Satisfaction Augments Trust

Beyond the established conception that satisfaction creates trust, the interview results indicate that repeated positive experience and satisfaction increase customer trust. The dealer now is perceived as trustworthy and customers anticipate their probable future satisfaction with every new business interaction (Mayer et al., 1995). Of course, the factual aftersales customer experience has to match the customer value expectations to continuously stabilise the customer dealer relationship. Emerging satisfaction due to repeated positive dealer activity then results in a growing level of customer satisfaction and enforced trust.

The observation of LC "G" corresponds to this theory: *"All the initial relationship making, necessary when you do not yet know the actors in a deal, becomes unnecessary, when you have trust in established partnerships. In the end this reduces my risk to take wrong decisions."* LC "A" has a similar view: *"When you know the salesman you are dealing with for years, deal arrangement is quicker and easier*

because you know how the other party thinks and acts. It is a kind of trust that has developed.”

Trust is a concept that develops gradually over time and that is the result of a judgement of the reoccurrence of positive past behaviour (Chiu et al., 2012). It is generated after a number of successful transactions with a supplier that have fulfilled customer needs (Ravald & Grönroos, 1996). Trust helps to strengthen perceived customer value. The more trust is placed in the provider, the more it confirms and reinforces the trust that previously existed. This, in turn, leads to high customer satisfaction and thereby to further strengthening of trust. This means that trust develops out of trust – there is a process converting initial small trust into continuous, big trust. This relationship becomes obvious from the statement of LC “B”: *“The (SPCE) brand that we run, and I explicitly include the servicing dealer in that, is connected to a certain experience based on which I form expectations for the future, namely that it will continue perform as satisfactory as so far. This makes the purchase decision for this brand easier. You know what you will get and this makes it more difficult for unknown brands.”*

Satisfaction makes trust grow and repeated satisfaction together with previously granted trust continuously increases the trust inherent in a relationship.

c) Interpersonal Relationships Create and Augment Trust

The review further reveals an important co-determinant on the path leading from customer satisfaction to trust. This co-determinant is interpersonal relationships. Section 4.2.1 has shown that customer satisfaction develops from customer value, as customers perceive the dealer as competent and integral in the purchase process and subsequent service provision. The interviews support that the emergence of satisfaction with customers largely depends on the sales and service agents representing the dealer. Customers perceiving staff as amiable and engaged are more likely to be satisfied. Human relationships personalise the provider-customer relationship in the SPCE business and are essential to the emergence of customer

trust, as LC "B" observes: *"Humans work with humans and the interpersonal relations, the sympathies, the trust that develops over time, make a big difference."*

Due to competence and integrity of the staff of the acting SPCE dealer, interpersonal trust develops and is turned into organisational trust between customer and a supplier company. LC "H" describes this functionality as follows: *"Trust into the acting people generates trust into the supplier and through that, trust into their products."*

Customers reinforce the mutually trusting relationship by getting engaged with their sales and service agents.

LC "G": *"We want to have a good relationship to the acting people at our suppliers and we want to trust them."*

Inversely trust in the supplier is seen as a prerequisite for connectedness as the following lead customer statement shows:

LC "I": *"Everything happens based on trust, reliability and competency. The first deal is arranged by the salesman, all following ones are the result of reliable aftersales services."*

According to the concept of trust advanced by Mayer et al. (1995), trustworthiness is a precondition for trust. Trustworthiness is based on the provider's characteristics and behaviour. Trustworthiness is a personal trait related to the personality of the salesman and a measure of the likelihood that the other party is worthy of trust. Trustworthiness is therefore a precondition for trust and a necessity to create trust. If a supplier is perceived as trustworthy, the customer is likely to believe in the supplier's intention to generate benefits for the customer. They assume that both parties act according to similar values and that the supplier is competent - especially in their aftersales activities. The trustworthiness of the other party is decisive in determining whom customers trust and with whom they want to enter a new business relationship.

The personal characteristics of the salesman are therefore crucial to whether the customer can build trust in the dealer.

The concept of trustworthiness is founded on three major factors that drive a trustee's trustworthiness:

The first is *ability*. Ability describes a set of skills, characteristics and competencies in which the trustee is highly capable and are very relevant for the trustor. This is in line with what LC "G" mentioned during the LC interview: *"What matters most about a brand is that they have a service department that is available when I need them. The cooperation with the dealer's workshop staff must work properly. Competent help must be available, and problems must be solved fast and adequately."* Also, LC "E" pointed out the relevance of competency of a supplier: *"The trust into the supplier staff, in his competency and reliability must be 100 %."*

The second element of trustworthiness is *benevolence*. This is the extent to which the trustor has good intentions in his relationship with the trustee, aside from egocentric profit motives. LC "G" covered this aspect during his interview, when saying: *"Well, it is important that I have a good understanding of the other party. That I know what he means and that he puts himself into our shoes when he assesses situations and thereby generates an understanding what really matters to us."*

The third trustworthiness-factor is *integrity*. This stands for the extent to which the trustee bases their activities and beliefs on a set of principles, acceptable to the trustor (Mayer et al., 1995). LC "H" for example made a statement supporting this theory. He said that *"I only work with partners that are reliable, honest and fair, because this is the way we act as well."*

Together with ability and benevolence, the perception of integrity through customers can let trustworthiness emerge. Trustworthiness in turn can be the foundation for trust between the people acting on behalf of the customer and dealer. That can develop further into trust between a customer and a dealer organisation.

The three described trustworthiness factors are a measure for trustees to assess the level of risk they take when engaging into a new relationship. They indicate the likelihood that trust emerges later in the relationship, after positive experiences have been made. One statement of LC "1" well describes the functionality of this concept in real-life SPCE environment. He said that *"The first deal is arranged by the salesman all following ones are the result of reliable aftersales services."* Once trust is established, the customer value gained from the relationship grows, as LC "B" mentioned: *"The (SPCE) brand that we run, and I explicitly include the servicing dealer in that, is connected to a certain experience based on which I form expectations for the future, namely that it will continue perform as satisfactory as so far. This makes the purchase decision for this brand easier. You know what you will get. This makes it more difficult for unknown brands."*

The above findings do not just support the trustworthiness concept of Mayer et al. (1995) as an antecedent to trust. They also add a new aspect to it. The level on which the generation of initial trustworthiness and initial trust acts, is the interpersonal one.

LC "E": *"They (the people at our dealer) know our demand. They know how we think. The trust into the people and their competencies is what matters to us. When my salesman tells me that the machines work, you can buy it in good faith, then I trust him."*

Only when customers trust a supplier's personnel, they can develop trust into the supplier's organisation. Organisational trust is the antecedent for amplified customer value experience and cumulative competitive advantage generation.

Summarising this section, the interviews support that in the SPCE business customer satisfaction with supplier activities fosters customer trust generation. The interviews deepen this understanding. Furthermore, the interviews unveil that trust keeps on growing when experiences of satisfaction repeat. Repeated satisfaction nurtures customers' understanding that future service encounters could equally turn out as a

positive experience. Trust keeps on growing and developing in a customer-supplier relationship that continuously reconfirms customer expectations and thereby again generates satisfaction.

Interpersonal relationships are an important moderator of the cause-and effect-chain leading from value creation to satisfaction and trust. Customer experience traces satisfactory service encounters to particular personnel in SPCE dealerships and personalise these experiences. The trustworthiness of salesmen is a precondition for trust. It indicates the likelihood that trust emerges later in the relationship, after positive experiences have been made. When satisfactory experiences with dealer staff performance get repeated, these are gradually assigned to the dealer organisation as an abstract business entity. This way a lasting trustful relationship between customer and dealer emerges.



Figure 30: From Customer Satisfaction to Customer Trust in the SPCE Business

Figure 30 illustrates the mechanisms that have been found to determine the path from customer satisfaction to trust in the SPCE customer-supplier relationship.

4.2.3 From Customer Satisfaction to Customer Loyalty in the SPCE Business

Based on the literature review section 2.3.4 it becomes visible that customer satisfaction contributes to customer loyalty (Auh & Johnson, 1997; Oliver, 1999). Previous research has found several co-determinants relevant to the development of a loyal attitude of satisfied customers. The exact process leading customers from satisfaction to loyalty has hardly been explored for the SPCE business in Germany. The interviews contribute to a more differentiated understanding.

a) Combining Brand Excellence and Service Competence

LC "H" explains that the quality of the provided machinery has convinced him of the dealer selling it and makes him return: *"And then there is something like a bonus for the performing brand of which I already own machines. I am more willing to take another machine from this brand and its dealer. Placing the first machine of a new brand in a company that only operates machines of other brands is very difficult, I guess. We went that route with Hitachi machines. Today we have a large number of Hitachi machines. They have super processes. A local dealer. Strong performance. Capable staff."*

LC "B" confirms the understanding that the SPCE product disposes of symbolic, brand value which nevertheless is increased by service quality. Customers tend to stay loyal to their dealer, as they obtain both perfect equipment and service.

LC "B": *"The (SPCE) brand that we run, and I explicitly include the servicing dealer in that, is connected to a certain experience based on which I form expectations for the future, namely that it will continue perform as satisfactory as so far. This makes the purchase decision for this brand easier. You know what you will get and this makes it more difficult for unknown brands."*

Both statements obviously support the Satisfaction – Loyalty-Model of Johnson and Auh (1998) (refer to Figure 15). The experience of satisfaction encourages customers

to abbreviate their search process and stay loyal to the same dealer, which they have recognised as a reliable brand partner and equally competent in services. The continuity of the partnership with the dealer and more habitual buying behaviour reduces customer transaction cost (Johnson & Auh, 1998). Customer confidence in brand performance reduces the complexity of buying processes and creates customer value.

However, the interviews additionally provide deeper insights. The customer is satisfied and turns loyal since he is convinced of the offered brands and – equally important – of the competent dealer's after sales service. The SPCE dealer obviously guides the customer from satisfaction to loyalty by combining brand excellence and dealer service competence. Both LC "H" and LC "B" point out that the combination of brand and service quality keeps them with the respective dealer.

b) Relevance of Competent Sales and Service Staff

Moreover, the interviews corroborate the high importance of personal and competent advice from the initial purchase phase onwards:

LC "A": *"When you know the salesman you are dealing with for years, deal arrangement is quicker and easier because you know how the other party thinks and acts. It is a kind of trust that has developed."*

...

"One dealer, one mechanic, one point of contact. It's simply more easy to handle."

LC "A" obviously stays loyal with the company since he has been consulted by the same salesman for years. He has developed trust in his competence and expertise. Loyalty in the SPCE business largely depends on the competence of the people that are in continuous contact with the customer. LC "E" confirms: *"They (the people at our dealer) know our demand. They know how we think. The trust into the people and their*

competencies is what matters to us. When my salesman tells me that the machines work, you can buy it in good faith, then I trust him.”

The customer’s assumption that the dealer’s sales and service personnel are experienced concerning their individual requirements strengthens their loyalty towards that dealer. They voluntarily simplify and abbreviate their purchase process and dispense with seeking for alternatives, trusting in their familiarity and positive experience with the established dealer relationship.

Summarising the interview results concerning the path from customer satisfaction to loyalty in the SPCE business, there are two important factors why satisfied customers repeat business with the same dealer (refer to Figure 31):

- They value a combination of brand and service excellence.
- They rely on competent business partners at the customer desk they have known for years and who are well informed on their particular.



Figure 31: From Customer Satisfaction to Customer Loyalty in the SPCE Business

4.2.4 From Customer Trust to Customer Loyalty in the SPCE Business

The interviews have confirmed the positive impact of satisfaction on trust and on loyalty. It thus seems plausible that, in correspondence with the theoretical section 2.3.4, equally trust increases loyalty.

The impact of trust on loyalty is already plausible by its description: Trust between customer and supplier describes the mutual assumption that positive past behaviour will repeat in future. This expectation is the key reason for continued cooperation (Chiu et al., 2012; Williamson, 1993). The interviews illustrate that the pathway from trust to loyalty in the SPCE business depends on trust in the dealer staff to a large extent:

LC "H": *"And trust was also built through the fact that the salesman from Hitachi was the same who sold Komatsu in the past. We knew all the guys. A personal relationship and with that trust was already existing from the past. At least into the acting people."*

...

"Trust into the acting people generates trust into the supplier and through that, trust into their products."

Trust encourages customers to stay with their habitual purchasing decision and purchase routine. According to Ulaga (2003), trusting loyalty reduces supply side risks, eliminates customer search cost and generally reduces transaction cost, leading to increased profitability. The interviews confirm the relevance of this classification for the SPCE business. This is presented in the following sections.

a) Reduction of Risk

The avoidance of operational and financial risks is particularly valuable to business customers. The interruption of operational routines when machinery fails, can result in massive delays and cost, such as when a key machine in a production chain fails and

thereby interrupts the entire value generation process. By trusting in established partners, lead customers control the risk of unsatisfactory product- and dealer service quality and resulting value chain interruptions.

Trust, in the perspective of SPCE customers, reduces operational, financial and strategic uncertainties of product purchase and utilisation (Grönroos, 1997).

LC "C": *"When a relationship has been established, you begin to know and respect each other. That generates trust. This gives you a feeling of security, that you can count on each other in difficult situations. It gives you a kind of peace of mind."*

LC "G": *"All the initial relationship making necessary when you do not yet know the actors in a deal becomes unnecessary when you have trust in established partnerships. In the end, this reduces my risk of taking wrong decisions."*

Customer trust in the SPCE dealer is based on the positive experience that past transactions have yielded. Under such positive experience, they expect the same for the future. Since customers have experienced the reliability of the supplier, future corresponding business behaviour is perceived as more probable than for new, unknown competitors. Trusting customers thus mostly seem to decide to stick with the business partner they know and are convinced of. In the opinion of LC "E", loyalty diminishes the risk of making new inferior supply chain choices: *"Trust helps making deals based on positive experience. Under trust it's not necessary to check and evaluate everything again and again. Through this, the efforts to come to a good decision increases, and the risk of wrong decisions is reduced."* The same lead customer furthermore stated that: *"The trust into the people (at the dealer) and their competencies is what matters to us. When my salesman tells me that the machines work, you can buy it in good faith, then I trust him."*

LC "D" believes in the continuity of the established business partners, since he has experienced reliable and honest service over the last years. A sentiment of trust has

emerged which keeps him loyal to the dealer: *“When I have a high opinion of my suppliers and the acting people there, I trust their statements and assume that they will still be present in a few years to help me out if problems should occur. Once such level of trust is there, it is very important and helpful.”*

Trust seems to cause loyalty, since established successful business partnerships are perceived stable and save as compared to new, unknown business contacts.

b) Trust Reduces Transaction Cost

By sticking to established trustful business partners, lead customers reduce transaction cost and personal investments for developing new business relationships.

LC “D”: *“I firmly believe that as long as humans are the decision-makers, trust plays the major role. It is so important, because it can help to reduce the collection and analysis of information through existing trust.”*

LC “G”: *“All the initial relationship making necessary when you do not yet know the actors in a deal becomes unnecessary when you have trust in established partnerships.”*

LC “A”: *“One dealer, one mechanic, one point of contact. It’s simply more easy to handle.”*

LC “E” asserts that time and effort saved for the search for potential new dealers and service partners is valuable to develop their business effectively.

LC “E”: *“The extra time that this (avoiding searches for new partners) generates can then be invested in activities which add value to your business.”*

The interview statements show that trust can reduce transaction cost through the avoidance of cost for the search and selection of new business partners and for establishing a relationship with them.

c) Trust Avoids Psychological Efforts

Trust in the reliability of the supply chain partner further reduces customers' psychological efforts. Conflicts, cognitive difficulty, stress in business relationships, learning loops and lacking convenience of cooperation causes psychological cost and requires extra engagement. These efforts are reduced when business partners trust in each other. LC "G" confirms this effect for the SPCE business: *"Knowing your dealer gives you a feeling of security that you can count on the other one in difficult situations. It is, I guess, a kind of peace of mind."*

Trust provides customers with the security that past positive experience will repeat since they are familiar with the other party's cooperative behaviour, values and thinking.

LC "E": *"They (the people at our dealer) know our demand. They know how we think. The trust into the people and their competencies is what matters to us. When my salesman tells me that the machines work, you can buy it in good faith, then I trust him."*

Trust establishes social bonds and fosters mutual understanding. In trustful and loyal business partnerships, efforts for relationship-building and learning seem to diminish, since investments to establish, maintain or end business relationships, or to familiarise with the other party are avoided. Cognitive difficulty and stress tend to decrease when trust grows, since habitual behaviour replaces conscious considerations. High levels of trust can contribute to control psychological cost by decreasing cost of conflict. This is because the likelihood of conflict reduces when business partners trust in each other.

The interviews show that in the SPCE industry trust resulting in customer loyalty is specifically generated in challenging situations when customers feel the support of the SPCE dealer. LC “B” explains, for instance: *“No one can afford machine downtimes. In such situations the dealer needs to come with solutions. If you don’t trust them in that regard, you cannot collaborate with them.”*

To recap, the interviews have provided differentiated insights on the mechanism that converts customer trust into loyalty in the SPCE sector. These are summarised in Figure 32.

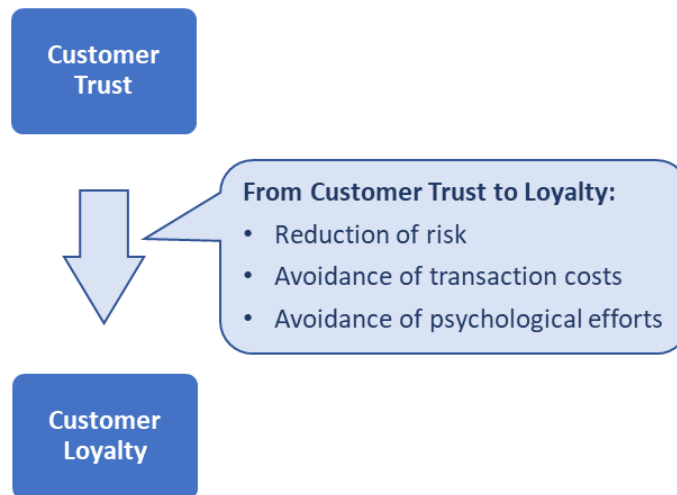


Figure 32: From Customer Trust to Customer Loyalty in the SPCE Business

Three major effects have been found:

- Trusting customers aim at reducing their business risk by preferably staying with their established dealer. Convinced of the past satisfactory performance of the business partner, they attempt to avoid the risk that this situation could deteriorate in a new partnership.
- Keeping loyal to the established trustful partnerships can avoid transaction cost for searching a new dealer and establishing a new partnership in a lengthy process of mutual learning and adjustment.

- Loyalty to a trusted dealer can avoid psychological efforts, such as stress, learning loops and lacking convenience of cooperation.

4.2.5 Summative Model Concerning the Effect of Customer Value Creation at the Level of the Customer in the SPCE Business

Chapter 4.2 has analysed the step-by-step effects of customer value creation at the customer level in the SPCE business by evaluating lead customer interviews systematically, referring back to the work model. The work model (Figure 20) comprises four blocks describing the attitude and behaviour of SPCE customers and the potential effects between these categories.

Precisely, the model assumes the following customer value chain: When dealers create customer value according to customer expectation, the customer is satisfied with the performance of their supply chain partner. As a result, the customer develops trust and loyalty. Trust increases customer loyalty and establishes a lasting business relationship. This effect chain (Figure 28) has been detailed and differentiated concerning the assumed effect causes and moderators in the SPCE business based on the interview results in Chapter 4.2. The outcome of this analysis results in a comprehensive model, which is systematically combined from the part images Figure 29 to Figure 32, as follows:

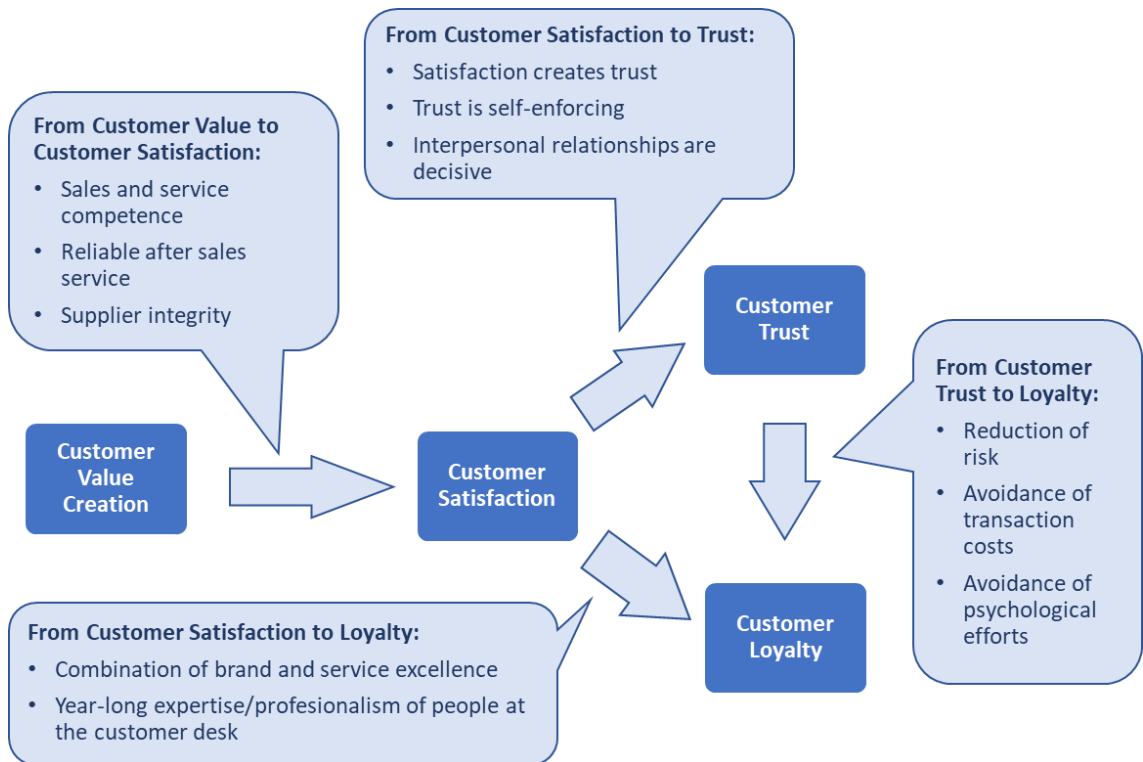


Figure 33: Customer Value Creation Chain in the SPCE Business

- SPCE dealer customer value creation – as detailed concerning the value contributions in Figure 27 – contributes to customer satisfaction. The interviews have revealed that dealer sales and aftersales service competence as well as integrity are of particular importance for customers to develop satisfaction in the SPCE sector.
- Satisfied SPCE customers develop trust in the provider. In lasting business relationships (like in the SPCE sector), the development of trust is a self-enforcing process. Growing trust frequently results due to repeated satisfactory transactions and business contacts. Interpersonal relationships are decisive to develop trust between business partners in the SPCE segment, since service encounters usually entail a high degree of personal communication and interaction.
- Satisfaction contributes to customer loyalty. In the SPCE business customers require combined brand and service excellence to the extent that they

reconnect the brand to the service encounter provided by the dealer. Customers are satisfied due to their usually long-time experience – matching their expectations – with people at the customer desk. This satisfaction drives their loyalty with the service provider.

- Finally, customer trust enforces customer loyalty. Trust reduces perceived transaction and cooperation risk. Loyalty to a trusted partner reduces transaction cost and psychological efforts. This effect is of particular relevance in the SPCE sector since the maintenance and repair of machinery requires a high degree of expertise.

In summary, the interviews have confirmed the relevance of the customer value chain developed in the literature review in Chapter 2 for the SPCE sector. The empirical part supports that the factor of trust holds a key position here, since the SPCE business relationship only starts with the acquisition of the product and continues as a service and maintenance partnership for years. This continued interaction between customer and supplier requires mutual trust. Repeated trustful transactions enforce the established trust levels.

4.3 From Customer Trust and Loyalty to Competitive Advantage and Business Value/Profitability in the SPCE Business (RQ3)

Chapter 4.3 examines RQ3 by referring to the interview results and additional secondary sector-specific publications. As detailed in the methodological section 3.5.2., triangulation of the results verifies the interview insights and amends them content-wise.

RQ3 assesses how far customer trust and loyalty can create competitive advantage business value and profitability in the SPCE business. Other than section 4.2, which focussed on the customer, Chapter 4.3 takes the perspective of the provider (i.e., the dealer) in the SPCE industry to evaluate, how customer value contributes to dealer competitive advantage and profitability. The supply-side value creation chain at the

SPCE dealer is assessed. The analysis in section 4.3 thus refers to the second part of the work model (Figure 20). The organisation of the arguments and the progress of analysis follows the logic of Figure 34.

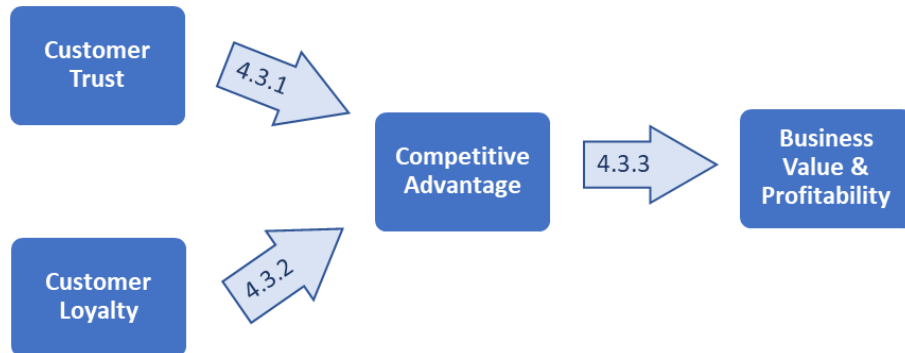


Figure 34: Supply-Side Value Creation Chain in the SPCE Business – Organisation of Arguments

The numbers indicated on the arrows in the figure, indicate the section in which the respective aspect is treated. Section 4.3.1 evaluates how customer trust creates competitive advantage. Section 4.3.2 explains how customer loyalty creates competitive advantage. Both sections rely on interview results mainly. Drawing on secondary literature, section 4.3.3 assesses how competitive advantage generates profitability and sustainable value in the SPCE business.

4.3.1 From Customer Trust to Competitive Advantage in the SPCE Business

Based on the interview results, section 4.2.4 has illustrated the way from customer trust to loyalty. It was found that the reduction of risk, avoidance of transaction cost and avoidance of psychological efforts are central motivators for customers to stay with trustworthy established SPCE supply chain partners. The analysis has shown that both parties – customer and supplier – benefit from a trusting and long-lasting relationship.

a) Avoidance of Transaction Risks and Cost

Like the customer, the supplier also avoids business risk, transaction cost and psychological efforts when customers return and stay loyal. Reliable business partnerships allow suppliers to reduce the cost of searching for new customers and cost related to business transactions. A loyal, trusting customer base is cost-effective and can save marketing expenses (Curtis et al., 2011; Deng et al., 2010; Kuo et al., 2009; Lam et al., 2004; Nyadzayo & Khajehzadeh, 2016). Trust encourages habitual customer purchasing decisions (Ulaga, 2003) and suppliers benefit from this habit through reduced efforts for transaction initialisation. LC "D" explains this process from the customers' perspective: *"It (trust) is so important, because it can help to reduce the collection and analysis of information through existing trust. When you know the salesman you are dealing with for years, deal arrangement is quicker and easier because you know how the other party thinks and acts."* The statement of LC "E" also shows the reduced need for transaction efforts in a trustful relationship: *"They (the people at our dealer) know our demand. They know how we think. The trust into the people and their competencies is what matters to us. When my salesman tells me that the machines work, you can buy it in good faith, then I trust him."*

b) Reliance on Established Interpersonal Relationships

Section 4.2.2 on the effect chain leading customers from satisfaction to trust has shown that interpersonal relationships are decisive for the customer and reassures them. Equally, the dealer benefits of trustful personal interaction processes. LC "F" explains that his feeling of friendship to his SPCE dealer's staff motivates his buying decisions: *"And the base for all that, in my eyes, is trust. Trust that a decision made does not need to be regretted or justified. Trust is also the base for establishing a good relationship with business partners that pretty often can grow into a friendship. And then, similar to the private world, you prefer dealing with people you like and that you have a good relationship with than vice versa. All that explains in my eyes, why the interpersonal aspect has such a high relevance in buying decision-making. I could not imagine placing an order for a 200,000 euros machine without a good feeling, without*

trust into the acting people. Because they are the ones who later on have to ensure that what was promised is realised and kept.”

The statement of LC “F” illustrates that in the SPCE business trust is a particularly important determinant of buying decisions, given that investment sums are comparatively high and customers further depend on the competency of the dealer after the completion of the purchase contract, as they require advice, maintenance and repair service.

The data also indicates a strong positive relationship between the expected serviceability and a customer’s purchase decision. Customers who are satisfied with the usability and reliability of a brand seem to strongly prefer this brand over others. They tend to remain loyal unless their expectations, based on past performance, are severely missed. If expectations are met, usability and reliability reduce the risk that equipment performance will not meet customer needs.

LC “B” confirms: *“This (trust) makes the purchase decision for this brand easier. You know what you will get. This makes it more difficult for unknown brands.”* And LC “H” agrees: *“Trust into the acting people generates trust into the supplier and through that, trust into their products.”*

The strong impact that trust has on the quality of personal relationships and on buying decision-making, as described by LC “B” and LC “H” , is shared by Walter, Hölzle, and Ritter (2002). They state that customer trust significantly increases customers’ perception of relationship value. The trust customers have in the acting people in the dealership influences their decisions to buy SPCE from the organisation these trusted people work at.

Customer trust in the personal engagement of the supplier (representative) thus reduces the complexity of purchase processes. Long-term relationships between SPCE customers and brands result trust, to the extent that customers habitationally prefer one brand over another. This confirms the findings of Lafley and Martin (2017), who

describe the power that routine buying behaviour has and how it can dominate the rationalised problem-solving-orientated way of purchase decision-making due to the human brain preferring the automatic way over conscious considerations.

LC "E" explains that his personal acquaintance with the dealer motivates him to buy new machinery with less personal efforts and more time efficient: *"They (the people at our dealer) know our demand. They know how we think. The trust into the people and their competencies is what matters to us. When my salesman tells me that the machines work, you can buy it in good faith, then I trust him."*

A dealer's market position benefits from this effect, as customers are likely to return and the personnel representing the brand turns more important in the customer's mind than the brand itself.

LC "D": *"The acting people are more important to me than the brand."*

Even in case of diminishing brand attractiveness, suppliers relying on interpersonal relationships with their customers can thus remain competitive. The statement of LC "H" explains the advantageous position that a dealer gains through trustful personal relationships, and beyond the image of the represented brand. In his case he remained loyal to the salesman even though the salesman changed the brand he sold: *"And trust was also built through the fact that the salesman from Hitachi was the same who sold Komatsu in the past. We knew all the guys. A personal relationship and with that trust was already existing from the past."*

The continuity in customer relationships and personal connectedness to the customers constitutes a strong, resource-based competitive advantage for the dealers that is hard to imitate. The resource of established customer relations is unique and forms a barrier to competitors intending to attack the advantageous position of the dealer. Customers tend to be more reluctant to change supplier since they are uncertain about the extent to which they can rely on the expertise of unknown salesmen and about the intimacy of that supplier with their individual needs and specifics.

Previous customer trust is reconfirmed and extended by repeated interaction and binds the customer to the dealer and the products they offer. The confirmation of interpersonal trust has the potential to transfer the trustful relationship to the level of the organisation the trusted people stand for. The repetition of positive transaction experiences supports the development of initial purchase behaviour into habitual behaviour. This represents a cumulative competitive advantage, as described by Lafley and Martin (2017). They found that while positive experience-based purchase decision-making for a specific product gets repeated, the purchase decision-making becomes even more routine and the advantage that this product already has over competing ones enforced further. They conclude that companies should invest in making the purchasing decision for their products a habit rather than a choice.

To conclude, customer trust can contribute to competitive advantage by two key mechanisms:

- Customer trust and continuity contribute to a reduction of dealers' acquisition risks and efforts.
- Customer trust has the ability to strengthen interpersonal relationships so that customers tend to habitually buy with the dealer.

4.3.2 From Customer Loyalty to Competitive Advantage in the SPCE Business

Section 4.2.3 has shown that customer satisfaction likely creates loyalty, and has found dealer brand and service excellence as well as long-term experience with the customer as fundamental determinant of this effect. In the following, it is shown that this effect is equally beneficial to the dealer, who due to brand service excellence and expertise gains competitive advantage, since these factors are central motivators for customers to rely on the long-established SPCE supply chain partner.

a) Avoidance of Service Risks and Transaction Cost

Satisfied customers tend to return to their dealer for service and repair works as well as parts sales since they attempt to avoid the risks that new business relationships entail. Dealers benefit from this experience since repeated maintenance and repair jobs together with parts sales keep their aftersales operations busy and their staff engaged. The fixed costs of SPCE dealer operation are to a large extent, covered by a continuously high utilisation rate of the aftersales organisation. The fix cost coverage contribution of machinery sales in contrast, is usually more volatile because it is more prone to external effects like economic crisis than the aftersales business. This makes the fix cost coverage contribution of profits from sales activities relatively unstable and thus less predictable. In the SPCE business, the ideal scenario for a dealer is, that all fixed costs are covered through profits from aftersales activities. The underlying logic is, that, even in a crisis period with low income from machinery sales, a SPCE dealer organisation can cover its fixed costs and keep their operations going. The extent to which a SPCE dealer organisation can cover its fixed costs through profits from the aftersales sector is called the absorption factor (Kelleher, 2014). This factor is a key performance indicator for the financial stability and healthiness of SPCE dealer businesses. It is for example employed when top tier manufacturers assess the performance and financial stability of existing or potential dealer-partners. Also, capital providers look at the absorption rate of SPCE dealer businesses when taking credit decisions. This makes the absorption factor, and the underlying aftersales fix cost contribution ability of dealer organisation highly relevant for SPCE dealer profitability.

The interview statements of the lead customers substantiate that customer trust in service departments has a positive effect on reducing operational, financial and strategic uncertainties for the dealer:

LC "I": *"Everything happens based on trust, reliability and competency. The first deal is arranged by the salesman, all following ones are the result of reliable aftersales services."*

LC "B": *"This has a lot to do with experience and trust. As I said, reliable machines and an even more reliable aftersales service when we have machines failure are an extremely important aspect to us in our daily business and for our purchase decisions."*

Positive past service experiences assure customers that future transactions are likely to lead to similar positive outcomes and are a solid business capital for the service provider. Correspondingly, Ballantyne and Aitken (2007) find that a company's ability to generate trust amongst its customers, reduces business risk. According to Morrison and Firmstone (2000), trust is a significant antecedent to risk reduction.

b) Reliance on Service Excellence and Expertise

Customers' reliance on dealer service experience and expertise has been shown to drive loyalty (refer to section 4.2.3). Dealers gain competitive advantage when customers perceive service quality high, since satisfied customers return and place service and equipment orders repeatedly. Order books filled close to capacity allow dealers to maximise fix costs digression, which contributes to higher profitability and thereby financial stability and overall higher competitiveness.

The interview statements confirm that service excellence encourages lead customers to repeatedly buy new products with their dealer.

LC "B": *"This has a lot to do with experience and trust. As I said, reliable machines and an even more reliable aftersales service when we have machines failing are an extremely important aspect to us in our daily business and for our purchase decisions."*

LC "I": *"Everything happens based on trust, reliability and competency. The first deal is arranged by the salesman; all following ones are the result of reliable aftersales services."*

High customer value from service excellence and expertise fosters the confirmation and amplification of the existing personal trust. This drives the transformation of interpersonal trust into organisational trust. The amplification of trust through the repetition of high serviceability experience supports habitual re-purchase behaviour. The continuous experience of high customer value means lasting competitive advantage.

LC "B": *"This has a lot to do with experience and trust. As I said, reliable machines and an even more reliable aftersales service when we have machines failure are an extremely important aspect to us in our daily business and for our purchase decisions. The (SPCE) brand that we run, and I explicitly include the servicing dealer in that, is connected to a certain experience based on which I form expectations for the future, namely that it will continue perform as satisfactory as so far. This makes the purchase decision for this brand easier. You know what you will get. This makes it more difficult for unknown brands."*

In summary, customer satisfaction and loyalty can generate competitive advantage for the dealer for two major reasons:

- Satisfied customers attempt to avoid transaction cost and risks resulting from the search for new SPCE dealer partners and tend to return for further business.
- Repeat customer satisfaction in service partnerships motivates customers to return for further service and SPCE purchase orders, which improve the dealer's absorption factor, enhancing their financial stability and keep them in a strong market position. Repeat customer satisfaction further strengthens customer relationships, constituting a resource based competitive advantage.

4.3.3 From Competitive Advantage to Business Value and Profitability in the SPCE Business

To assess the impact of competitive advantage on business value and profitability, secondary public sources are consulted, since the lead customer interviews reveal nothing on the profitability of the dealer's business, of course. Customers have no insight and direct interest into economic success indicators of KB. The systematic evaluation of the retrieved secondary sources on the relationship of competitive advantage on profitability and value generation in the SPCE sector reveals several important moderators to this relationship.

The SPCE industry is under high and growing competitive pressure (refer to 1.2). There is a large number of providers and competition has increased over the last decade, specifically in the European SPCE market (Sjödín et al., 2016).

SPCE dealers operate in a cyclical and volatile business (construction) and turnovers are vulnerable to external economic effects. After the long-lasting decline in the period 1994 to 2006, Germany's construction economy has returned to a path of growth since 2009, following the decade's financial crisis (Baumanns, Freber, Schober, & Kirchner, 2016). Beyond 2021, however, further growth is questionable in the face of an impending depression in the wake of the Covid-19 pandemic crisis. Demand in the SPCE industry could fall significantly (in 2020 the demand for heavy SPCE in Germany fell by 20 % (Schmid, 2021)). SPCE dealers have to distinguish themselves from the average market in order to survive and prosper in an increasingly arduous market environment.

The SPCE business is characterised by a comparatively homogenous product and service portfolio. Price sensitivity could increase during a recessive macroeconomic phase, when market offer exceeds demand (Baumanns et al., 2016). Dealers in SPCE industry struggle to differentiate on available machinery but compete increasingly on price (World Economic Forum/ Boston Consulting Group, 2016). In a price-sensitive, dense and homogenous market, competitive advantages are under continuous contention.

The SPCE distribution business has limited potentials to reduce cost of operations. While industrial production has realised labour productivity increases due to digitalisation and the automation of production, to date SPCE dealers have so far hardly participated in this trend (Weber, 2018). Machinery is rarely standardised and has to be advertised, sold, delivered and serviced with a high percentage of individualised, manual labour. Human labour is indispensable to satisfy customers and realise sales. There is relatively little potential for cost savings through digitalisation and automation for dealers.

In competitive and homogenous markets with low potential for rationalisations, prices should approximate marginal cost. The resulting question is how SPCE dealers can differentiate from competition, when price margins are under pressure and customers are choosy, given the broad range of competitors.

World Economic Forum/ Boston Consulting Group (2016) and Sjödin et al. (2016) suggests that suppliers in the construction segment, particularly SPCE dealers, differentiate by offering superior advice and service to their customers and in this way distinguish from competition. Understanding the language of the customer, will increasingly be a success factors for suppliers. SPCE is increasingly sophisticated and people in the construction industry require information and training on the job to handle technologically advanced equipment. Dealers can bridge this knowledge gap by communicating technological innovations in the language of the people in place (Diederichs, 2015). Customers estimating dealers for competent consultation in purchase decision processes and reliable after sales services will likely prefer this relationship even if the price is marginally higher than for standard service. The view of LC "C" supports this position: *"Customers have realised that the 1,000 € that they saved on purchase price does not benefit them, when they do not have support when the machine fails and no one comes to repair it professionally."*

In accordance with previous research, the studies find that the competitive positioning of the SPCE dealer largely depends on customer trust and loyalty, which promises

stable or even growing revenues from sales and services. In macroeconomic downturns, the service business gains in importance as compared to the sales segment (refer to 4.3.2 a). Focussing on service quality could thus be a promising strategy to survive in a declining market (Kelleher, 2014). When construction companies realise low turnovers, they are unlikely to invest in new machinery, but more likely to target maintaining their existing equipment, instead. In the situation of an impending macroeconomic depression in 2021, dealers in SPCE can stabilise their business base by focussing on customer retention to benefit from the service and repair business of established customers (Hennig-Thurau & Hansen, 2013; Ravald & Grönroos, 1996). If these stay loyal to the company due to positive service encounters, they might come back to the dealer for new investments when the economy rebounds.

Weber (2018) suggests targeted knowledge management to substitute growth in productivity. SPCE dealers offering superior competence concerning the repair and service of machinery and particularly special equipment are indispensable partners to their customers and should be in a position to keep prices stable even when market demand, as a whole, declines. Life-long learning is a key resource for SPCE dealers to keep up with technological advancements in machinery and equipment and to adapt to changing market requirements (Bayerischer_Bauindustrieverband, 2015; Sjödin et al., 2016).

Triangulation of review-based insights with practitioner advice as available from business surveys in the construction industry leads to the assumption that the implementation of competitive advantage in economic profitability is less realised by cost-efficiency and profitable pricing strategies due to an increasingly competitive and homogenous market in the face of a declining macroeconomic cycle. Business value creation in the SPCE distribution sector more likely depends on three fundamental business-specific parameters:

- Superior consultation and service competence
- High service quality
- Targeted knowledge management

4.3.4 Summative Model of the Impact of Customer Trust and Loyalty on Competitive Advantage in the SPCE Business

Summarising the insights from the interviews and secondary sources, concerning the impact of customer trust and loyalty on competitive advantage and sustainable value growth and profitability, the work model now can be accomplished.

Section 4.3 has shown that customer satisfaction, which results in customer trust and loyalty, supports competitive advantage generation for SPCE dealers. Essentially, there are three paths leading from customer trust and loyalty to competitive advantage:

The *first*, is based on personal relationships. Satisfied customers are generally convinced that “their” SPCE dealer is competent concerning sales and service of machinery and believe in the relevance of their interpersonal relationship with people at the dealer’s customer desk. Dealer staff knows about the desire of their long-established customers and serve them in a reliable and integer way. The SPCE dealer benefits from customer trust emerging from trustful customer-supplier relationships, as customers tend to stay loyal to their business partner and usually return in order to keep this interhuman relationship up (section 4.3.1).

Second, customer trust and loyalty can generate competitive advantage by saving transaction cost and reducing business risks. Customers staying with the dealer for a long time usually need less marketing but return for service and repair as well as new purchases self-reliantly. Dealers save efforts for opening up new markets, dispense with advertising to gain new customers and equally avoid high psychological investments for getting involved with new clients (section 4.3.1 and 4.3.2). A trusting loyal customer base is a hard to imitate resource and thus represents a resource-based competitive advantage.

Third, customer trust and loyalty carry a high potential to generate competitive advantage due to long expertise concerning particular customer requirements. SPCE

dealers relying on an established customer base have the opportunity to collect extensive data-sets and develop experience concerning their application requirements, typical machinery defects and are able to offer their customer optimal repair and maintenance service. This can keep customers engaged with their dealer even if prices are slightly above the market average. Customers rely on the dealer's positive image and are likely to recommend the company to their business partners (section 4.3.2).

Concluding from the interviews and the analysis of secondary public sources, SPCE dealers can transform competitive advantage into business value and profitability. Even in macroeconomic downturns and a highly competitive market environment, dealers can excel by consultation excellence, high quality service and knowledge-advantages, particularly in the field of SPCE service and maintenance (section 4.3.3). Figure 35 combines and presents the gained insights in a comprehensive format:

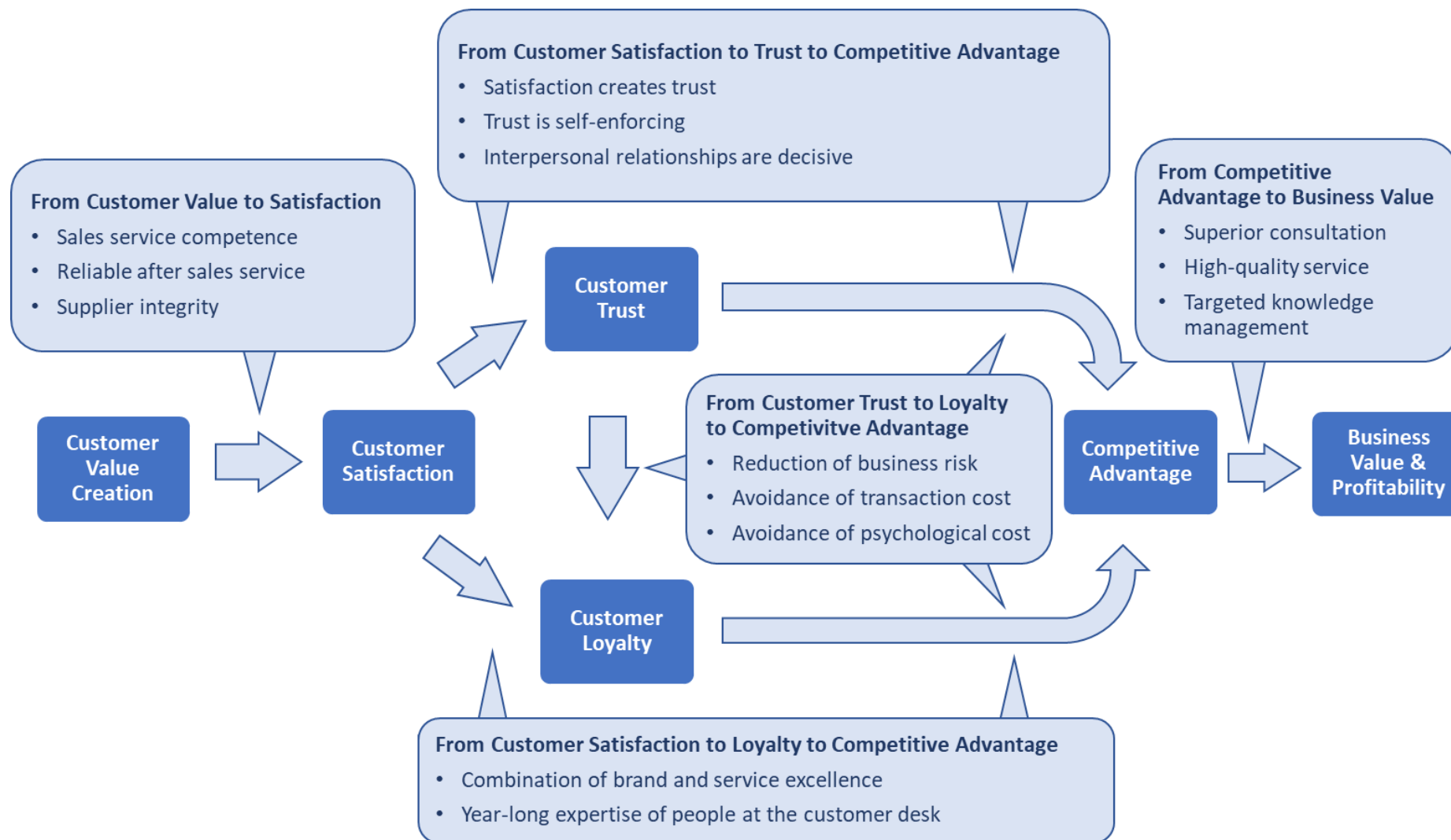


Figure 35: Comprehensive Research Model – From Customer Value Creation to Competitive Advantage and Business Value/Profitability in the SPCE Industry

4.4 Customer Value Anticipation: Relevant Value Aspects of the Future (RQ4)

Section 4.4 evaluates RQ4 “Which factors will contribute to customer value creation in the SPCE business in future?” According to the method of data analysis developed in section 3.5, future customer value is classified in correspondence with the section customer value creation (in present) (refer to 4.1) and comprises the customer value categories of the research model (Figure 20):

- Cost/Sacrifice Value
- Experiential Value
- Symbolic Value
- Functional Value

Sections 4.4.1 to 4.4.4 refer to the lead customer interviews to assess which of the above listed value categories are expected to gain or lose in relevance for customer in the future.

Several lead customer statements indicate their interest in future value anticipation. All interviewed lead customers show high interest in the subject of customer value anticipation.

LC “E”: *“Usually I do not take the time talk to people asking for interviews for research projects. But after you explained that you are working around the future of our industry, I felt attracted. I feel more and more that change has gained such speed, that we must look ahead and anticipate, because tomorrow comes quicker than 20 years ago.”*

LC “G” *“It was great discussing this topic with you. I have been thinking around many of the things we spoke about, but always quietly for myself. I know that the challenge of the future is out there and close. But too often we calm ourselves with the argument that we have more urgent things to deal with than preparing for tomorrow.”*

LC "D": *"I am fed up with being pushed forward by others, like the government that forces new emission regulations on us again and again. I hate being pushed. Because of that I decided to anticipate developments and to prepare for them before they appear in laws or market requests. And because you seem to deal with something very similar, I am very open to talk to you."*

This confirms the view of Blocker et al. (2011) and Kandampully and Duddy (1999) on the impact of customer value anticipation on supplier-customer relationships (refer to 2.4.2). They believe that customers value this competence as a unique supplier characteristic and distinguish between partners that just respond to existing needs and those that proactively offer solutions to their upcoming needs. Influenced by that the authors find that customers show a tendency to prefer entering close, unique and hard-to-imitate relationships with such suppliers than collaborating with non-anticipating ones.

4.4.1 Cost/Sacrifice Value

The evaluation of cost/sacrifice value for the present (section 4.1.1) has subdivided cost/sacrifice value into purchase price, cost of operation and psychological cost. Customer value grows when these three cost factors are minimised.

General lead customer statements on financial and organisational business objectives suggest, that efficiency and economic goal achievement is a major future target of SPCE customers.

LC "B": *"Generally, we want to develop our profit figures."*

LC "E": *"We want to become the market leader in industrial construction in a radius of 50 km around our city and we want to better control our cost base."*

LC "G": *"We want to develop our internal processes forward, to be financially well in shape for the future."*

Lead customers plan to work on their profitability through more efficient processes and better cost management. Consequently, one could have thought that low prices for SPCE be an answer to this demand. Surprisingly, lead customers deny the relevance of low machinery prices for the future. Lead customers "B" and "E" exemplary suppose that purchase price will further lose importance.

LC "B": *"I believe that the initial purchase price will lose in relevance in the future. In return the TCO viewpoint will grow in importance."*

LC "E": *"The initial purchase price will further lose in weight, because our trust in the acting people to treat us fair, will grow further."*

LC "A": *"Price will become less important. Residual value, service and relationship with the salesman, respectively the trust, will become more decisive."*

LC "D": *„The weight of price will further decrease. Servicequality, reliability will play an even bigger role."*

Pricing – according to the lead customer interviews – does not seem to be in the focus of customer interest and not supposed to be a major value factor in future. The potential future relevance of psychological cost is not addressed in the interview by the respondents at all. It can be assumed from the results of the interviews, that given its relevance for customer value generation today, it will also matter to lead customers in future. But given the lack of empirical data, no such conclusion can be conclusively deduced. Consequently, the future customer value delivery potential of the psychological cost aspect cannot be anticipated.

4.4.2 Functional Value

Functional value is represented by product attributes and product performance. The present importance of functional value has been classified as intermediate in the interviews (refer to 4.1.2). Lead customers' estimates concerning the importance of functional value in future are rather succinct. Three major requirements become obvious from the interviews.

a) Need for Facilitation to Save Qualified Labour

The interviews reveal the requirement of facilitating SPCE-related customer processes to save qualified manpower. Lead customers showed the desire to reduce operator training, parts-stocking cost and service complexity.

The reduction of maintenance intervals and maintenance cost also is found to have potential for future customer value generation. LC "D" suggests to completely outsource machinery maintenance: *"I expect, that companies will have to concentrate more on their core competencies in the future. I think that construction companies should not engage themselves in aspects like logistics or maintenance in times when qualified personnel is rare. This would be better handled from an external specialist. The work-sharing society is on the rise."*

Some lead customers mentioned standardisation as an option to enhance business efficiency in the future:

LC "I": *"We are trying to standardise more and more machine groups to reduce model complexity. This way, operators need less training, parts stock can be reduced (...)."*

LC "A": *"One dealer, one mechanic, one point of contact. It's simply more easy to handle."*

Machine standardisation and communalisation could reduce service complexity and allow customers to decrease investments in operator training and parts stock levels. This is because customers can reduce operator training efforts, when different models of their SPCE fleet have similar operator functionality. Furthermore, component communality amongst various SPCE in operator fleets reduces the number of replacement and service parts that need to be stocked. This reduces service complexity due to simplified and common maintenance procedures, independent of the SPCE type and model.

LC "G": *"We have the plan to focus more on our core business in the future, because we lack the special knowledge necessary for certain tasks and also because we do not have enough staff. The requirements or machinery diagnostics for example. You cannot have the necessary trainings and tools. That would be too complex, cost-intensive and demanding. Therefore, we will concentrate on the things we are good at in the future and where we can add the most value."*

Some lead customers suggest that dealers organise adequate staff to operate the SPCE machines, in order to save qualified staff resources in-house:

LC "C": *"It would be an idea, when the dealer would not just sell the machine but directly organise the required operator for it. That would give a dealer a unique sales position."*

LC "A": *"When a dealer would organise an operator together with a new machine, that would be a great thing. If a SPCE dealer would organise two operators, I would buy two machines from him today, regardless of the brand."*

Reorganising SPCE dealer concepts as full-range outsourcing solutions could enable dealers to distinguish from competition and become a source of competitive advantage.

b) Need for Automation

The shortage of qualified staff causes the need to replace human labour by automatisisation in the future.

LC "C": *"The amount of work will not decline in the coming years, while the number of employable people will decline. That tells us, we need less people-intensive processes. Anything that helps to automate work will help."*

LC "F": *"To automate and to replace human labour. Manufacturers and dealers need to contribute their piece for that. This way they could add enormous value to their customers."*

The need to replace human labour with automatisisation in the future is obvious. Dealers could create functional value for their customers by offering equipment to automate customers' value chain steps.

c) Need for Digitalisation

The digitalisation of SPCE products could be a field for future value-generation. Customers seem to be pushed into digitalisation at all levels of their business and the SPCE business could provide tools to integrate machinery operation and maintenance using electronic routines. Customers need dealers for support in implementing digitalisation in SPCE:

LC "B": *"That (digitalisation) requires a lot of expertise, which the dealers need to deliver as service providers. A construction company cannot manage the complexity of different brands, machines and individual systems."*

Digitalisation could be realised by dealers in the form of new service products, like data-management.

LC "G": *"All machines in our fleet already have some sort of system, that allows for example to monitor fuel-consumption. But practically speaking we cannot really use these systems efficiently, because each manufacturer uses a different kind of system. It is far too time-intensive to familiarise and work with several different systems. It would ease our life extremely, when we would have a brand-independent online platform, where all data of all machines can be analysed and displayed, regardless of the brand."*

...

"I think a dealer needs to function as a filter. They need to realise which information is relevant for me. All other data that just eats my time and attention needs to be kept away from me. It is not about making as much data available as possible. This was the request in the early days. In the future it will be about to supplying only relevant data, in the required quality at the right point in time."

The interviews disclose SPCE customers' need for digitalisation in the industry and the development of manageable systems with high usability is critical for customers in future. Such systems could create customer value and allow dealer distinction.

4.4.3 Symbolic Value

Symbolic value describes to what extent a product mediates a personal meaning, self-expression or has got social and conditional meaning and has been connected to brand value in this thesis (Holbrook, 1999, 2005; Reed II et al., 2012; Sheth et al., 1991; Sweeney & Soutar, 2001; Woodall, 2003). The future potential of symbolic value for SPCE customers is addressed by the interview partners who assume that brand value will not increase or even decrease in the SPCE segment in future. Contrary to the present value estimation of symbolic value as presented in 4.1.3, the data gathered from the lead customers on future customer value delivery potential does not allow to differentiate the anticipation between their perception for each aspect of brand related customer value, namely product quality and dealer service promise. These

participants only mentioned about brand value on a very general level, and thus this differentiation cannot be made and the anticipation for each aspect separately is not possible.

LC "B": *"Well, I do not believe it (brand-relevance) will become more important".*

LC "C": *"I think the power of the brands will remain as is."*

LC "I": *"This (brand-relevance) will not grow in the future. More likely it will go in the opposite direction."*

It seems that there is limited interest amongst SPCE lead customers in the development of symbolic brand value in future. Consequently, it is likely that it will not become a field for impactful but intermediate future customer value generation.

4.4.4 Experiential Value

Experiential value refers to the product's capability to deliver customer value by stimulating desirable feelings and emotions (Sweeney & Soutar, 2001). In the SPCE segment experiential value refers mainly to social and relational aspects. As part of the interviews, lead customers are asked how they anticipate the relevance of personal relationships and trust for their buying decision-making to develop. There is unequivocal agreement that the importance of relational value in the SPCE segment will increase further in the future.

LC "B": *"I expect that, for us, the relevance of the personal relationship will increase further."*

LC "E": *"I realise a desire in our industry for dealing on the basis of trust. Therefore, I believe that personal relationships will gain in relevance."*

LC "I": *"It (personal relationships) will become more important. We are drifting more and more towards an anonymous society in which communication is predominantly organised through digital media. But aspects like trust are difficult to transmit. In the end, humans need to get along with each other for a working business relationship."*

LC "D": *"I firmly believe that as long as humans are the decision makers, trust plays the major role."*

These statements indicate an even further growth of the relevance of personal relationships and trust in the future SPCE buying decision making process. Thus, customer value generation through personal relationships and trust seems a promising route to not only gain present, but even more future competitive advantage for SPCE dealers. Consequently, it appears very likely that the aspects of personal relationships and trust mean a major source of future competitive advantage for the SPCE dealer.

While the section 4.4.1 to 4.4.4 have dealt with the expected change in the four customer value categories, the next section focusses on the anticipation of upcoming trends in the construction industry.

4.4.5 Review of Upcoming Construction Sector-Specific Trends from Interview Results (RQ4)

The future goals of customer companies, and product innovation helping customers to achieve them, are influenced by industry-trends. Trends are "social and economic processes and phenomena, forming tendencies of future activities" (Illiasenko & Rosokhata, 2016, p. 70). They can be seen as "new manifestations among people – in behaviour, attitude or expectation – of a fundamental human need, want or desire" (Mason et al., 2015, p. 46). As such, trends indicate customer value aspects that have started to grow in importance to society and are likely to continue to do so with increasing magnitude. Future trends offer new and growing potential for future

customer value delivery, customer satisfaction, trust, loyalty and finally competitive advantage (Kavadias et al., 2016). Knowledge about trends in the industry of the customer is critical to customer value anticipation (Blocker et al., 2011).

As part of the lead customer interviews and contributing to the answer to RQ4 “Which factors will contribute to customer value creation in the SPCE business in future?”, participants were asked which trends might influence the construction industry – the industry the customers of SPCE dealers act in – strongly in future. It results from the data that environmental sustainability (a), digitalisation (b) and shortage of skilled labour (c) are supposed to become trends influencing the construction sector significantly in the future. Lead customers unequivocally support this view.

a) Industry Trend Environmental Sustainability

Environmental sustainability is a frequently mentioned future trend. Most lead customers experience that environmental sustainability is impacting society and equally the construction industry due to new regulations. Demand has been shifting towards more environmentally friendly construction techniques. Lead customers expect that this trend will intensify further.

LC “E”: *“I see growing requirements to construction in sustainability, through the use of environmentally sustainable materials, compliance with noise emission regulations and so on.”*

LC “F”: *“There is a continuous invention of new environmental regulations over which it is difficult to keep the overview: recycling, emissions and so on. And it seems there is no end in sight.”*

LC “H”: *“I think environmental sustainability is a societal mega-trend that is on the rise in many aspects of public life.”*

b) Industry Trend Digitalisation

Digitalisation is among the most mentioned trends in the interviews. It is expected that the digitalisation of processes will heavily impact and significantly transform the entire construction industry.

LC "B": *"The trend for digitalisation is obvious. As it did impact the private sector, it will also change the processes in the construction industry. And this trend will further intensify in the future."*

LC "E": *"Digitalisation will rise further. That is for sure. We will transform more and more processes into digital. For example, time registration, cost monitoring, planning progress monitoring. There is no way around that."*

LC "G": *"I believe that digitalisation will become a monster trend. Our biggest challenge will be the synchronisation of all stakeholders and the generation of true added value for us."*

c) Shortage of Skilled Labour

Lack of skilled labour was frequently mentioned and seems to be another important trend in the construction industry. The need for automation stands in close connection with the lack of qualified staff.

LC "B": *"What already impacts us a lot today, what will surely become even worse is that we cannot find people anymore that are interested in working on construction sites."*

...

"In addition, our growth ambitions are at risk – despite a very positive business climate and order situation – we will most likely have to reject additional orders, because we simply do not have the necessary people anymore."

LC "D": *"We are already forced to reject new orders, because we cannot get the needed people anymore. This hurts productivity and efficiency in the companies, because we have to improvise and work close to the limits."*

LC "F": *"We need to get used to getting more jobs done with less people."*

...

"The lack of personnel does not allow us to take on more orders. It's the opposite. We are forced to reject new projects because we cannot find additional employees. The problem will get bigger."

LC "I": *"Staff will become a major topic. We already have 2,700 open positions in our company. Many smaller companies already have to reject new orders, because they lack the required people."*

Summarising, lead customers are able to name trends that they believe will impact the construction industry in the future. There is high commonality in the answers, indicating a common view amongst lead customers on expected future trends and speaking for the validity of the data.

4.4.6 Interdependence of Upcoming Construction Sector-Specific Trends

The interviews reveal that the identified large future trends – digitalisation, shortage of labour and environmental sustainability – are interdependent.

a) Digitalisation and Shortage of Labour

The lack of labour is a major problem for construction companies. It is expected to intensify further. This shortage of personnel is affecting blue collar and white-collar workers. Employees capable to implement new digital processes and to operate innovative digital tools are badly required:

LC "B": *"Machines are already partially equipped with digital features. In the future they need to be much more integrated into the digital processes on the construction sites. This requires lots of new know-how."*

LC "F": *"To manage the new digital technology, we will need people that are better educated, and most importantly, constantly willing to learn. Finding such people is already difficult for construction companies and this will become even worse."*

The pressure to implement new digital tools and processes is creating additional demand for skilled staff. This situation is worsening the already very problematic labour shortage in construction companies. In return, the shortage of IT personnel is laming progress in business digitalisation. Grosso Sategna, Davide, and Volonta (2019) also come across these effects in their survey amongst approximately 200 SPCE representatives from the construction sector like OME executives, dealers, contractors.

On the other hand, digitalisation and subsequent automation could be a way to reduce the dependency on skilled labour in the construction industry.

LC "D": *"It (digitalisation) can also save resources: let it be labour or others."*

LC "G": *"We will need the digitalisation to become more efficient to replace the missing staff when there are no more engineers on the construction sites."*

From another angle, lead customers see digitalisation as an opportunity to raise the attractiveness of construction jobs for younger people, which have an affinity to digital tools. Additionally, digitalisation encourages new, attractive working modes like home office, what could soften the skilled labour shortage.

LC "E": *"Also the attractiveness of our company is enhanced through digitalisation."*

The digital data exchange allows for example to install flexible work models like home-office or flexible work time schemes. These are aspects which make it attractive for us to develop towards digital change.”

(Grosso Sategna et al., 2019, p. 15) also discovered this effect in their survey titled “Digitalising the Construction Sector”: “The sector already suffers from a shortage of workers because of its low appeal as it is still considered “dirty, dangerous and dull.” However, the shift towards a digital scenario might reverse this trend.”

In summary, digitalisation creates opportunities for construction companies to reduce the dependency on labour and to raise the attractiveness of the industry for potential new employees. Digitalisation could diminish the dependence on skilled labour, but equally skilled labour is required to promote digitalisation in the construction sector, creating additional demand for specialised staff.

Next to its influence on the trend of labour shortage, digitalisation also has the potential to impact the trend of environmental sustainability.

b) Digitalisation and Environmental Sustainability

Digitalisation could support environmental sustainability by improving work efficiency and by reducing resource consumption.

LC “D”: *“It (digitalisation) can also save resources: let it be labour or others. Better information leads to less mistakes and reduces waste.”*

...

“I think that autonomous operating machines are not far away anymore, which will operate more efficiently and safer than human operators.”

LC “E”: *“If we would have machines that could be operated from a remote place, this would disburden our employees and reduce travel.”*

These lead customer statements show that digitalisation has the potential to reduce resource consumption and the environmental impact of construction, in line with the trend for environmental sustainability. The responses to the survey of Grosso Sategna et al. (2019) support this assumption. They find that digitalisation means higher sustainability thanks to a more efficient utilisation of resources, driven by the advantages of digital technologies.

The trend for environmental sustainability itself, can also impact other trends, like the lack of labour trend.

c) Environmental Sustainability and Lack of Labour

To manage growing environmental sustainability skilled staff is indispensable:

LC "D": *"It will become more and more difficult for us, to know all the upcoming (environmental) regulations and to apply them. This will consume much of our skilled personnel's capacity, which we cannot find anymore already today. This will become a problem."*

LC "I": *"Today, machines are equipped with a lot of new technology, like emission-reduction components. This technology needs to be understood and mastered. You need to realise when things go wrong and take countermeasures. We do not just have a shortage of personnel, but we also need better-educated personnel in the future. This intensifies the shortage further."*

The trend for environmental sustainability intensifies the lack of labour trend because it creates needs for personnel with new and rare skills.

In summary, digitalisation can help to reduce the dependency on manual labour by partially replacing human labour by digital technologies. On the other hand, the

demand for people skilled in inventing and implementing digital tools leads to an additional need for people and intensifies the lack of labour trend. At the same time, a lack of skilled IT labour handicaps the companies' progress in digitalisation. Digitalisation furthermore interacts with the trend for environmental sustainability, due to its potential to improve work efficiency and reduce waste in construction processes. The trend of growing environmental responsibility in return, creates demand for new professional skills, worsening the labour shortage.

The following Figure 36 illustrates the interaction and interdependency of the three identified impactful trends for the construction sector.

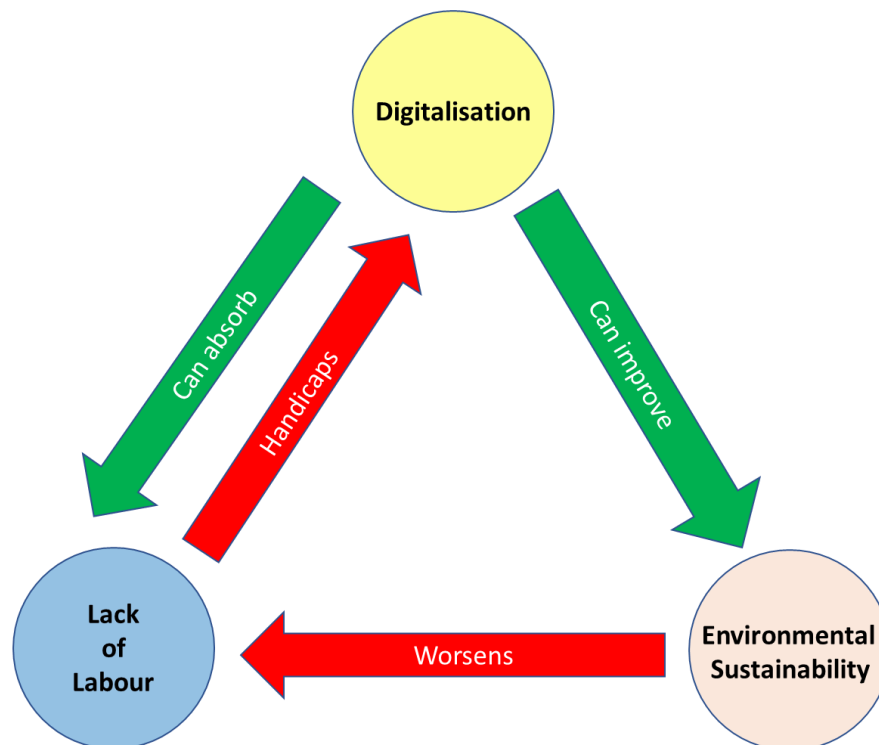


Figure 36: Interdependency of Industry Trends in the SPCE Sector According to the Interviews

Figure 36 shows that digitalisation plays a central role to interconnect major trends in the construction industry. Digitalisation is expected to change core processes in construction companies and thereby transform the way companies operate and generate value. Due to that it offers promising opportunities for SPCE dealers' future customer value generation.

4.4.7 Summary on Relevant Customer Value Aspects and Upcoming Construction Sector-Specific Trends

Summing up the interview results concerning future customer value potentials, the customer value categories corresponding to section 4.1.5, are detailed concerning the subcategories that show future value potential in Table 16. The categories are additionally contrasted and classified on their future customer value creation potential.

Customer Value Aspect	Future Customer Value Aspect - Subcategory	Future Customer Value Potential
Cost/Sacrifice	Price	Low
Functional Value	Standardization	High
	Automation	High
	Digitalization	High
Symbolic Value	Branding	Intermediate
Experiential Value	Trusting & long-term Dealer Relationship	High

Table 16: Future Customer Value Delivery Potential by Customer Value Subcategory

- Lead customers showed little interest in the cost/sacrifice aspect concerning future value generation potential.
- The future potential of functional value aspects, however, is rated high and lead customers demand higher levels of standardisation, automation and digitalisation.
- Symbolic value in the form of branding value seems to lose in importance in future according to the interviewees.

- The relevance of experiential value concerning the importance of personal trust and long-term dealer relationships, on the other hand, is supposed to grow further from an already high present relevance for customer value generation.

Overall, the lead customer answers concerning future customer value potentials in the SPCE segment, according to the four abstract value categories of the research model, are unique and novel. They allow to explore future sources of customer value and thereby competitive advantage in the German SPCE industry, based on lead customer input, for the first time.

To understand future customer value potentials even better the anticipation of future trends impacting customer is crucial in customer value anticipation (refer to 3.2.1). The lead customer interviews provide valuable insight in this regard. Environmental sustainability, digitalisation and shortage of skilled labour emerge as impactful future trends in the construction industry. These trends are interdependent. Digitalisation holds a unique, position in that regard, a view that amongst others, also shared by Roland Berger Strategy Consultants (2016, p. 3): “Digitization permeates every part of every company.” It influences both other trends and thus appears as the central emerging trend in the construction industry, holding substantial future customer value generation potential. Grosso Sategna et al. (2019, p. 5) also discovered a similar meaningful conclusion from their investigation: “Throughout the study, digitalisation is intended as a wider and more complex issue than the adoption of digital technologies per se: it means transforming businesses by leveraging the potential of digital technologies to create new revenue and provide higher value.” Corresponding conceptual product concept recommendations for the case company KB are developed and presented in section 6.2.2.

Combining the gained insight on upcoming trends with the understanding of the future customer value potentials of the four abstract value categories of the research model (refer to 4.4.1 to 4.4.4), the customer value anticipation exercise provides a novel empirical foundation for future customer value delivery strategies and focus areas.

Practical suggestions derived from this insight are presented in chapter 6.2 for the case company KB and in 6.3 for other groups and entities.

The aspect of future industry trends in the construction industry is the only one for which secondary data exists in the form of industry trend reports. This chance is taken, and this data is used for triangulation, to validate the results of the lead customer interviews concerning future industry trends. Respective inquiries are made as follows.

4.4.8 Complementary Secondary Literature Analysis of Upcoming Trends in the Construction Sector

To obtain further information on RQ4 “Which factors will contribute to customer value creation in the SPCE business in future?”, this section accomplishes the results of section 4.4.5 by analysing sector-specific trends for the construction business from secondary resources. Triangulation is applied to validate the trend anticipation outcome of the lead customer interviews (refer to 4.4.5) and thereby the trend anticipation capability of the participating lead customers.

The methodology of this section is a market-research-based trend analysis, as introduced in section 3.2.1 a).

4.4.9 Review of Upcoming Construction Sector-Specific Trends from Secondary Data (RQ4)

Using the review method described in 3.5.2, upcoming trends for the construction business are extracted from data sources and classified by weighting sources and respective relevance in the following Table 17.

Rank	Trend	Publication Type	Title	Publisher	Reference	Score				
						Source (20%)	Research Approach (30%)	Topicality (35%)	Outlook Horizon (15%)	TOTAL
1.	Environmental Sustainability	Periodical	How four Trends influence the construction Industry. More than a vision.	Bavarian Construction Association	Bayerischer_Bauindustrieverband, 2015	2	1	2	3	1.95
		Study Report	Construction 2020 - Challenges, Trends, Scenarios	BG Bau	Heinzelbecker, 2010	4	4	1	1	2.55
		Journal Article	Development of Construction Management in Research & Education 1985 - 2015 to BBBPlus	VDI Bautechnik	Diederichs, 2015	4	4	2	3	3.25
		Study	Upcoming Changes in the Construction Industry - Trends & Opportunities until 2020	Roland Berger Consultants/Hypovereinsbank	Baumanns, Dr.Freber, Dr.Schober, & Dr.Kirchner, 2016	3	3	3	4	3.30
		Study Report	Shaping the Future of Construction	World Economic Forum & Boston Consulting Group	World_Economic_Forum/Boston_Consulting_Group, 2016	3	3	3	3	3.15
		Study Report	Construction Trends & Developments, Annual Analysis 2018/2019	BauInfoConsult	BauInfoConsult, 2018	2	1	5	3	3.15
		Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Study Report	The next normal in construction - How disruption is reshaping the world's largest ecosystem	McKinsey & Company	Ribeirinho et al. (2020)	3	4	5	4	4.40
		Study Report	The new normal in construction	Roland Berger Consultants	Schober and Büchele (2020)	3	3	5	5	4.25
		Study Report	Hot trends in construction - A new era of opportunities	Roland Berger Consultants	Lecat and Schober (2018)	3	2	5	4	3.80
Total Score										33.75
2.	Digitalisation	Study	Upcoming Changes in the Construction Industry - Trends & Opportunities until 2020	Roland Berger Consultants/Hypovereinsbank	Baumanns, Dr.Freber, Dr.Schober, & Dr.Kirchner, 2016	3	3	3	4	3.30
		Study Report	Shaping the Future of Construction	World Economic Forum & Boston Consulting Group	World_Economic_Forum/Boston_Consulting_Group, 2016	3	3	3	3	3.15
		Journal Article	Development of Construction Management in Research & Education 1985 - 2015 to BBBPlus	VDI Bautechnik	Diederichs, 2015	4	4	2	3	3.25
		Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Study Report	Construction Industry - Economic Developments of the last 25 years and future Outlook	VDI Bautechnik	Mai & Schwahn, 2018	3	4	5	3	4.25
		Study Report	Hot trends in construction - A new era of opportunities	Roland Berger Consultants	Lecat and Schober (2018)	3	2	5	4	3.80
		Study Report	The next normal in construction - How disruption is reshaping the world's largest ecosystem	McKinsey & Company	Ribeirinho et al. (2020)	3	4	5	4	4.40
		Study Report	The new normal in construction	Roland Berger Consultants	Schober and Büchele (2020)	3	3	5	5	4.25
Total Score										30.35

Rank	Trend	Publication Type	Title	Publisher	Reference	Score				
						Source (20%)	Research Approach (30%)	Topicality (35%)	Outlook Horizon (15%)	TOTAL
3.	Shortage of Skilled Personnel	Study Report	Upcoming Changes in the Construction Industry - Trends & Opportunities until 2020	Roland Berger Consultants/Hypovereinsbank	Baumanns, Dr.Freber, Dr.Schober, & Dr.Kirchner, 2016	3	3	3	4	3.30
		Study Report	Construction Trends & Developments, Annual Analysis 2018/2019	BauInfoConsult	BauInfoConsult, 2018	3	2	5	3	3.65
		Study Report	Construction Industry - Economic Developments of the last 25 years and future Outlook	VDI Bautechnik	Mai & Schwahn, 2018	3	4	5	3	4.25
		Study Report	Shaping the Future of Construction	World Economic Forum & Boston Consulting Group	World_Economic_Forum/Boston_Consulting_Group, 2016	3	3	3	3	3.15
		Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Study Report	The next normal in construction - How disruption is reshaping the world's largest ecosystem	McKinsey & Company	Ribeirinho et al. (2020)	3	4	5	4	4.40
Total Score										22.70
4.	Health and Safety	Study Report	Construction Trends & Developments, Annual Analysis 2018/2019	BauInfoConsult	BauInfoConsult, 2018	3	2	5	3	3.65
		Study Report	Shaping the Future of Construction	World Economic Forum & Boston Consulting Group	World_Economic_Forum/Boston_Consulting_Group, 2016	3	3	3	3	3.15
		Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Study Report	The next normal in construction - How disruption is reshaping the world's largest ecosystem	McKinsey & Company	Ribeirinho et al. (2020)	3	4	5	4	4.40
Total Score										15.15
5.	Larger and More Complex Projects	Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Study Report	Shaping the Future of Construction	World Economic Forum & Boston Consulting Group	World_Economic_Forum/Boston_Consulting_Group, 2016	3	3	3	3	3.15
		Study Report	Construction Trends & Developments, Annual Analysis 2018/2019	BauInfoConsult	BauInfoConsult, 2018	3	2	5	3	3.65
		Study Report	Construction Trends & Developments, Annual Analysis 2018/2019	BauInfoConsult	BauInfoConsult, 2018	3	2	5	3	3.65
Total Score										14.40

Rank	Trend	Publication Type	Title	Publisher	Reference	Score				
						Source (20%)	Research Approach (30%)	Topicality (35%)	Outlook Horizon (15%)	TOTAL
6.	Globalisation	Journal Article	Development of Construction Management in Research & Education 1985 - 2015 to BBBPlus	VDI Bautechnik	Diederichs, 2015	4	4	2	3	3.25
		Study Report	Shaping the Future of Construction	World Economic Forum & Boston Consulting Group	World_Economic_Forum/Boston_Consulting_Group, 2016	3	3	3	3	3.15
		Study Report	Construction 2020 - Challenges, Trends, Scenarios	BG Bau	Heinzelbecker, 2010	4	4	1	1	2.55
		Study Report	The next normal in construction - How disruption is reshaping the world's largest ecosystem	McKinsey & Company	Ribeirinho et al. (2020)	3	4	5	4	4.40
		Total Score								
7.	Demographic Change	Study Report	Construction 2020 - Challenges, Trends, Scenarios	BG Bau	Heinzelbecker, 2010	4	4	1	1	2.55
		Study Report	Construction Trends & Developments, Annual Analysis 2018/2019	BauInfoConsult	BauInfoConsult, 2018	3	2	5	3	3.65
		Journal Article	Development of Construction Management in Research & Education 1985 - 2015 to BBBPlus	VDI Bautechnik	Diederichs, 2015	4	4	2	3	3.25
		Study Report	Upcoming Changes in the Construction Industry - Trends & Opportunities until 2020	Roland Berger Consultants/Hypovereinsbank	Baumanns, Dr.Freber, Dr.Schober, & Dr.Kirchner, 2016	3	3	3	4	3.30
		Total Score								
8.	Urbanisation - Inner City Construction	Study Report	Construction Trends & Developments, Annual Analysis 2018/2019	BauInfoConsult	BauInfoConsult, 2018	3	2	5	3	3.65
		Periodical	How four Trends influence the construction Industry. More than a vision.	Bavarian Construction Association	Bayerischer_Bauindustrieverband, 2015	2	1	2	3	1.95
		Study Report	Construction 2020 - Challenges, Trends, Scenarios	BG Bau	Heinzelbecker, 2010	4	4	1	1	2.55
		Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Total Score								
9.	New Construction Materials	Study Report	Construction Trends & Developments, Annual Analysis 2018/2019	BauInfoConsult	BauInfoConsult, 2018	3	2	5	3	3.65
		Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Study Report	The next normal in construction - How disruption is reshaping the world's largest ecosystem	McKinsey & Company	Ribeirinho et al. (2020)	3	4	5	4	4.40
		Total Score								

Rank	Trend	Publication Type	Title	Publisher	Reference	Score				
						Source (20%)	Research Approach (30%)	Topicality (35%)	Outlook Horizon (15%)	TOTAL
10.	Aging Infrastructure in Europe	Study Report	Upcoming Changes in the Construction Industry - Trends & Opportunities until 2020	Roland Berger Consultants/Hypovereinsbank	Baumanns, Dr.Freber, Dr.Schober, & Dr.Kirchner, 2016	3	3	3	4	3.30
		Study Report	Shaping the Future of Construction	World Economic Forum & Boston Consulting Group	World_Economic_Forum/Boston_Consulting_Group, 2016	3	3	3	3	3.15
		Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Total Score								
11.	New Equipment, Embodying New Technology	Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Study Report	The new normal in construction	Roland Berger Consultants	Schober and Büchele (2020)	3	3	5	5	4.25
		Total Score								
11.	Industrialisation & Modularisation	Study Report	The next normal in construction - How disruption is reshaping the world's largest ecosystem	McKinsey & Company	Ribeirinho et al. (2020)	3	4	5	4	4.40
		Study Report	Hot trends in construction - A new era of opportunities	Roland Berger Consultants	Lecat and Schober (2018)	3	2	5	4	3.80
		Total Score								
12.	Increasing Documentation Requirements from Official Bodies	Study Report	The Change of the European Construction Industry	Horvath & Partners Management Consultants	Weber, 2018	3	3	5	3	3.95
		Study Report	Shaping the Future of Construction	World Economic Forum & Boston Consulting Group	World_Economic_Forum/Boston_Consulting_Group, 2016	3	3	3	3	3.15
		Total Score								
13.	Consolidation	Study Report	The new normal in construction	Roland Berger Consultants	Schober and Büchele (2020)	3	3	5	5	4.25
Total Score									4.25	
14.	Concentration on Core Business	Study	Upcoming Changes in the Construction Industry - Trends & Opportunities until 2020	Roland Berger Consultants/Hypovereinsbank	Baumanns, Dr.Freber, Dr.Schober, & Dr.Kirchner, 2016	3	3	3	4	3.30
		Total Score								
15.	Social Responsibility	Journal Article	Development of Construction Management in Research & Education 1985 - 2015 to BBBPlus	VDI Bautechnik	Diederichs, 2015	4	4	2	3	3.25
		Total Score								
16.	Corruption	Study Report	Shaping the Future of Construction	World Economic Forum & Boston Consulting Group	World_Economic_Forum/Boston_Consulting_Group, 2016	3	3	3	3	3.15
		Total Score								
17.	Increasing Mobility Demand	Periodical	How four Trends influence the construction Industry. More than a vision.	Bavarian Construction Association	Bayerischer_Bauindustrieverband, 2015	2	1	2	3	1.95
		Total Score								
17.	Life-Long Learning	Periodical	How four Trends influence the construction Industry. More than a vision.	Bavarian Construction Association	Bayerischer_Bauindustrieverband, 2015	2	1	2	3	1.95
		Total Score								

Table 17: Trend Identification, Assessment and Ranking from Secondary Sources

Three top trends are identified from the evaluated sources, these are:

1. Environmental sustainability (33.75 points)
2. Digitalisation (30.35 points)
3. Shortage of skilled personnel (22.70 points)

Environmental sustainability in construction intends to reduce the amount and noxiousness of material for building and constructing in future and to decrease the environmental impact of construction processes.

Digitalisation is another impactful trend in the construction industry (Baumanns et al., 2016; Roland Berger Strategy Consultants, 2016; Weber, 2018). 93 % of the actors in the European construction sector expect *digitalisation* to impact the entire construction process landscape (Roland Berger Strategy Consultants, 2016). The lack of employees experienced in digital tools and processes is seen as a big future problem for implementing digitalisation.

Shortage of skilled personnel in the construction industry as a result of the demographic change and the shrinking interest in blue-collar jobs is seen as a serious threat. Additionally, the need for staff with thus far less relevant new skills in the construction sector, specifically in the digital sector, creates another staff-shortage challenge.

4.4.10 Lead Customer Trend Anticipation Capabilities

Comparing the top three trends, identified from trend reports with the results of the lead customer trend anticipation exercise, a perfect match emerges as displayed in Table 18. From both, primary and secondary data environmental sustainability, digitalisation and lack of skilled labour emerge as substantial upcoming trends in the construction sector. Also, the drivers behind the trends match between primary and secondary data. The only difference is the ranking that is applied for the quantitatively

analysed secondary data but was not possible for the qualitatively processed primary data, because here not such clear differentiation in expected trend impact emerged from the data.

Impactful Upcoming Trends in the Construction Sector		
As Expected by Lead Customers	As Identified from Secondary Sources	Drivers
Environmental Sustainability, Digitalisation, Lack of Skilled Labour	1. Environmental Sustainability	- Restrictions and Legislations - Societal Greenish Spirit
	2. Digitalisation	- Technological Innovations - Need for Efficiency Gains - Digitalisation of Up- and Downstream Value Chain Players
	3. Shortage of Skilled Personnel	- Diminishing Interest in Blue Collar Jobs - Demographic Development

Table 18: Impactful Upcoming Trends in the Construction Sector from Primary and Secondary Data

The result of the match of two different data sources through triangulation supports the view on lead customers as a valuable and competent source of trend anticipation. The anticipation outcome can give guidance to SPCE dealers in adjusting their attention and efforts to those trends that seem to become most relevant to their customers in future and thereby offer substantial customer value delivery opportunities.

4.5 Summary of Empirical Results

Summarising the empirical results, the insights gained from sections 4.4.1 to 4.4.4 and 4.4.8 are now integrated into the research model. Already in the review-based research model (section 2.5.1) (Figure 20), a feedback loop reconnecting the analysis of existing competitive advantages in the customer value chain to future development potentials and requirements has been added. By anticipating customer value,

businesses get the opportunity to continuously develop their value creation processes. They are enabled to consider upcoming industry trends to enhance customer value creation, specifically cost/sacrifice value, functional value, symbolic value and experiential value, depending on the emerging requirement of customers.

Sections 4.4.1 to 4.4.4 have referred to lead customer interviews to assess, which customer value aspects are foreseen to become more or less important and accordingly should be in the focus of future customer value creation strategies of SPCE dealers. The following Table 19 summarises the insights of the analysis of expected future value creation field and their respective potentials and compares them to present customer value aspects as derived in section 4.1.5.

Customer Value Aspect	Customer Value Category	PRESENT Customer Value Generation Potential	FUTURE Customer Value Category	FUTURE Customer Value Generation Potential
Cost/Sacrifice	Economic (Price)	Low	Price	Low
	Economic (Cost of Operation)	Intermediate	n.a.	n.a.
	Psychological	High	n.a.	n.a.
Functional value	Product attributes	Intermediate	Standardization	High
			Automation	High
			Digitalization	High
	Product performance	Intermediate	n.a.	n.a.
Symbolic (brand-related) value	Quality promise	High	Branding	Intermediate
	Service quality promise	High		
Experiential value	Networking & Connectedness	Intermediate	Trusting & Long-Term Dealer Relationship	High
	Personal relationships	High		
	Responsiveness	Intermediate		

Table 19: Present and Future Customer Value Potential by Customer Value Sub-Categories

Table 19 illustrates the prospective development of the customer value categories in the perception of the interviewed lead customers in the SPCE sector:

- Cost/sacrifice value is of intermediate importance today and is expected to diminish in the future.

- Functional value is of intermediate importance today, but functional aspects are thought to become increasingly important due to the requirements of standardisation, the possibilities of automation and digitalisation.
- Symbolic brand related value today is perceived high, but brand consciousness is expected to diminish in future as customers seem to value established trustful personal relationships over brands.
- Experiential value is intermediate to high today, particularly personal relationships with the dealer are important. Trust and long-term dealer relationships are foreseen to become even more important in future. With growing functional requirements reliable, trustful service partnerships should become essential to keep machinery going and create customer value.

Sections 4.4.5 and 4.4.9 have reviewed upcoming trends in the construction sector and the driving forces profoundly based on a triangulated review of primary and secondary data. This has significantly contributed to a better understanding of trends that are likely to strongly impact the construction sector in future:

- The necessity to reduce the intensity of qualified labour.
- The desire for increase environmental sustainability.
- The increasing potential of digitalisation.

The trend analysis has led to the conclusion that these trends are interconnected. It became visible that digitalisation holds a central position within the three trends and can soften and/or intensify the impact of the other two.

Another relevant takeaway emerged from the triangulation of primary and secondary data on construction sector-specific trends: Lead customer can be a valuable and competent source for trend anticipation. The outcome from both data types matched.

The insights gained through the interviews support the assumption that the mentioned three industry trends in the construction sector drive the change of customer values in the SPCE sector.

- The functional value requirement of standardisation and automation seems to be driven by the lack of qualified labour. Customers desire increasingly autonomous machinery, to substitute competencies at the level of human resources.
- The growing importance of experiential value in the form of stable, reliable, trustful relationships with dealers as perceived by customers appears to be driven by the increasing complexity (e.g., through digitalisation) of machinery. Keeping increasingly complex equipment running requires expertise and comprehensive involvement of qualified and trustworthy SPCE dealer staff.
- The industry trend towards environmental sustainability could be one explanation for the phenomena that cost/sacrifice value losses importance: Customers tend to be ready to spend more, provided that new machinery is technically/digitally refined, corresponds to latest ecological standards/regulations and helps automate processes and reduce the dependency on labour.
- Symbolic value, in the form of customer brand consciousness, seems to decrease with growing importance of functional and ecological factors. Rather than iconic brands, customers estimate innovative and ecologically compliant technology supported by trusted expert service staff, no matter which brand stands for these features.

The empirical insights gained in Chapter 4 are comprehensively summarised in Figure 37. The model maps the value creation chain in the interaction of SPCE customers and dealers.

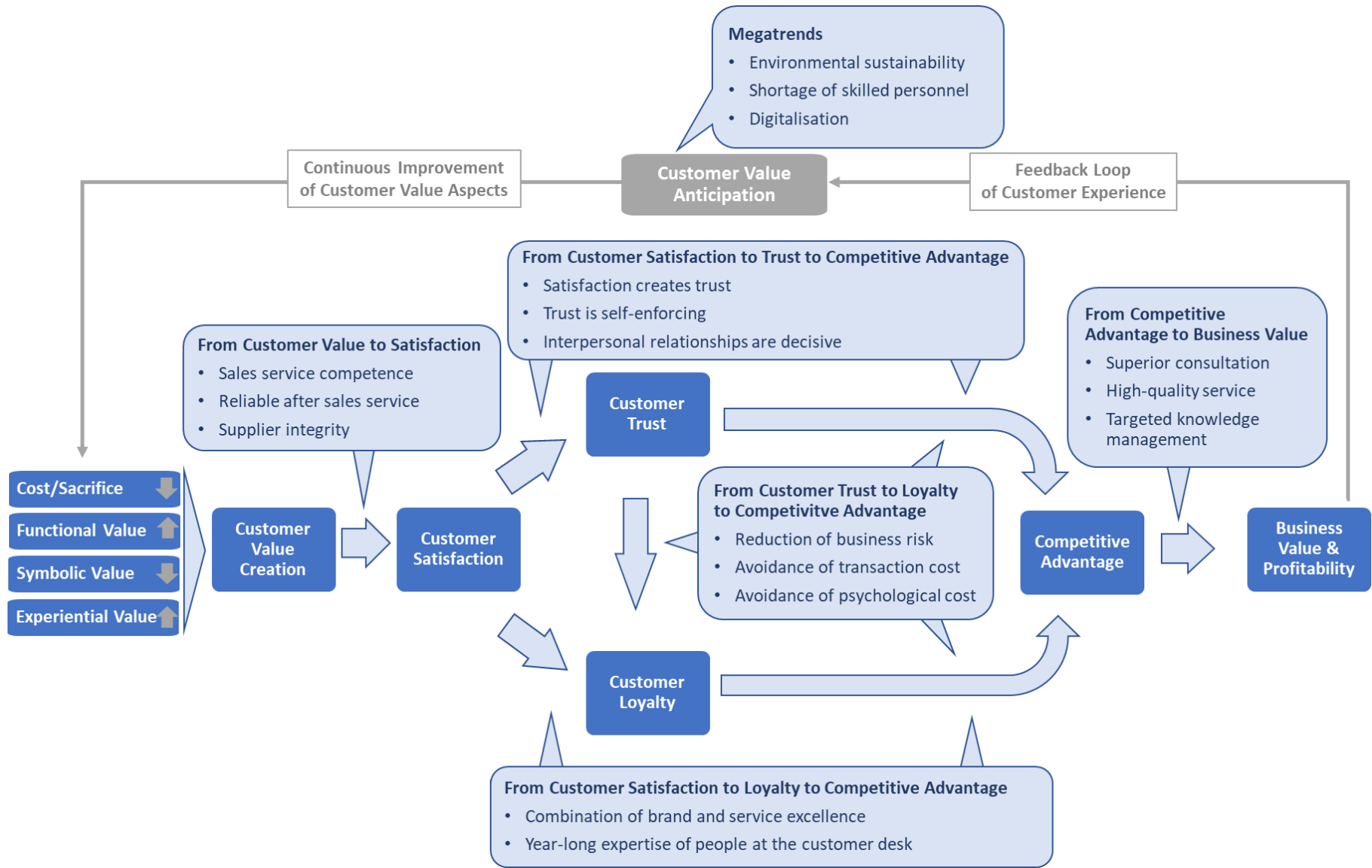


Figure 37: Empirically Founded Model of Customer Value Creation Mechanism and Customer Value Change in the SPCE Sector

Customer value creation in the SPCE sector has been found to comprise four value categories:

- Cost/Sacrifice Value
- Functional Value
- Symbolic Value
- Experiential Value

Customer value creation contributes to customers satisfaction. Satisfaction is driven by high sales service competence, reliable after sales service and dealer integrity. Repeated customer satisfaction is the foundation for customer trust and customer loyalty. To develop trust, reliable interpersonal relationships between customer and dealer are essential.

The development of customer loyalty depends on a combination of brand and service excellence and long and deep experience of the customer service staff at the dealer. Customer trust additionally reinforces customer loyalty since trusting customers reduce opportunity cost for and risk of searching new partners, by staying with their reliable and trustworthy dealer.

Customer satisfaction, trust and loyalty are a source for competitive advantage for the dealer, since trusting customers tend to stick to the established dealer, return for repurchase, service and repair and recommend their partner to colleagues.

A dealer's competitive advantage can be converted into business value and profitability growth, given that satisfied and trusting customers tend to pay higher prices than the average market price, require less marketing expenditures to be kept loyal and ensure continuous turnovers even in times of economic downturns.

Superior consultation, high quality service and excellent knowledge makes engaged SPCE dealers a hard-to-imitate resource for their trusting customer base.

Dealers cooperating with their customers intensely, have the chance to anticipate future customer value requirements, for instance, by lead customer analysis and the evaluation of public market trends. Three major market trends have been identified here:

- The necessity to reduce qualified labour.
- The need for environmental sustainability.
- The potential of digitalisation.

These trends are expected to contribute to a change of customer value expectations in the future, as lead customer analysis shows. Digitalisation holds a central role in that, as it influences the impact of the other two trends.

While the relevance of cost/sacrifice value and symbolic value is expected to diminish, functional and relational value expectations might increase. Based on these insights, SPCE dealers could adjust their customer value creation chain to keep customers satisfied, trusting and loyal in future and outperform competition to ensure lasting competitive advantage and profitability for their own business.

In the following Chapter 5 the insight gained through the data analysis in Chapter 4 are applied to answer the questions of this research project.

5 Answers to Research Questions and Discussion

Chapter 5 answers the research questions (RQ) based on the analysis of the empirical results and the research model. Results are interpreted based on this study's conceptual framework referring back to relevant literature. Condensing the results for the part questions an answer to the core question of the study "How far can the anticipation of customer value support SPCE dealers in Germany to discover future sources of value creation and competitive advantage?" is presented.

5.1 Answering the Part Research Questions 1 to 4

In the following sections, the part questions one to four of the research project are answered.

5.1.1 Answer to Research Question 1

RQ1: Which Aspects of Customer Value Creation are Relevant to Customers in the SPCE Business?

The focus of this study was the identification of sources of competitive advantage for self-propelled construction equipment (SCPCE) dealers in Germany. The review of relevant literature unveiled that the establishment of strong competitive advantage positions requires the generation of exceptional future customer value. The review has found that customer value can be subdivided into four categories (Gallarza et al., 2011; Smith & Colgate, 2007). These are cost/sacrifice value, functional value, symbolic value and experiential value. The empirical study has examined to what extent these value categories are relevant to the lead customers of Kraemer Baumaschinen (KB) (refer to Figure 27).

It has been found that customer value from cost/sacrifice is of medium importance to SPCE buyer relationships at KB (refer to 4.1.1). Within this value category, purchase

price matters least, followed by cost of operation and finally psychological cost that is of highest importance.

The category of functional customer value is of intermediate importance (refer to 4.1.2). Each of the two value aspects of this category, namely product attributes and product performance, have been found to be of medium relevance to customer value creation for KB's lead customers.

Symbolic value, with its two elements quality promise and service promise, is perceived through the dealer's service quality and through the quality promise of a brand. The brand quality promise perception depends heavily on the service quality of the dealer, so that the service quality is the main driver of customer value in this category. This relationship was confirmed in the interviews (refer to 4.1.3), verifying the theory of Ballantyne and Aitken (2007), who argued that in B2B relationships customers connect brands to serviceability and to their overall service experience with a particular supplier. The impact of both aspects on customer value generation was found to be high.

Experiential value emerged as the most impactful driver of customer value for KB's SPCE lead customers (refer to 4.1.4). Two of its three elements – networking/connectedness and dealer responsiveness – were found to be of medium impact on customer value generation. The third element in this category – personal relationships – appeared to be very important to KB's SPCE lead customers and consequently strongly impacts the generation of customer value.

Presently, the interviewed lead customers particularly estimate the avoidance of psychological cost, symbolic value in the form of product and service promises and specifically personal relationships with their SPCE. Overall, the categories of symbolic and experiential value score higher than the categories cost/sacrifice and functional value. This can be seen as an indication for the domination of soft and psychological customer value aspects over factual product and economic/pricing related categories.

Taken together, the empirical study confirms that the categories of customer value suggested by Smith and Colgate (2007), which is a fusion of earlier concepts incorporating their strengths and avoiding earlier weaknesses, fit mostly for KB's SPCE business.

Next to the confirmation of the value categories of the model for the case of KB, the study findings could imply a game changing aspect for the entire SPCE sector. Derived from the learning that the cost/sacrifice aspect is only of medium relevance to KB's SPCE buyers, it could be assumed that:

Initial purchase price is not a major source of customer value for SPCE customers!

But since the case study findings are not generalisable, but meant to constitute an initial knowledge base to prepare ground for follow up research, future research has to check how far this phenomenon is also valid for other SPCE dealers.

Instead of price, KB's SPCE buyers seem to value other aspects higher than value from cost/sacrifice aspects. This finding puts strategy models, like "The Three Generic Strategies" model of Porter (1985) (see 2.1.1), that see the cost/sacrifice aspect as a major source for competitive advantage under pressure. They do not seem to apply to KB's SPCE customers regarding the monetary sacrifice. It seems that the low relevance of cost/sacrifice value is a result of the identified high relevance of aftersales services for SPCE customers. Faultless operating equipment is key to customers' value chain operations and of higher value than a low purchase price, that is expected to correspond with less reliable machine performance (refer to 4.1.1 a). Of course, SPCE buyers care about purchase prices, but they do not seem to make this aspect the major purchase decision driver. This is good news for KB as an established SPCE dealer for two reasons:

1. KB does not need to change strategy towards aggressive, margin-hurting pricing to fight competition.

2. Low-cost competitors entering the established grounds of German SPCE dealers are likely to fail, if they build their value proposition mainly on price aggressiveness.

In essence this tells KB, that refraining from aggressive pricing strategies, but focussing on other, more impactful customer value categories like experiential value and symbolic value, offers higher chances for present customer value and resulting competitive advantage generation.

5.1.2 Answer to Research Question 2

RQ2: How far does Customers' Value Perception Lead to Customer Satisfaction, Trust and Loyalty in the SPCE Business?

Section 2.3 has differentiated the value chain that converts customer value into competitive advantage. Earlier studies confirm, that the perception of customer value contributes to customer satisfaction (Gounaris et al., 2007; Lam et al., 2004). Repeated satisfactory service encounters convince customers of the reliability of the supply chain relationship according to the confirmation-disconfirmation paradigm (Parasuraman et al., 1988). Customer satisfaction is turned into customer trust, when positive past experiences are expected for the future (Chiu et al., 2012). Trust strengthens positive supply-chain relationships – and according to Kabiraj and Shanmugan (2011), Singh and Sirdeshmukh (2000) and Deng et al. (2010) – finally drives customer loyalty. That is, customers show a higher tendency to return for new purchases, remain with their service partner and recommend the supplier to others.

The empirical study based on lead customer interviews has confirmed these theoretically founded insights for the SPCE dealer KB. The effect-chain sketched roughly in the form of the literature review (refer to Figure 19) has been detailed concerning the concrete mechanism leading customers from satisfaction to trust and loyalty (refer to Figure 37), which finally contributes to competitive advantage and business profitability in the SPCE sector.

In KB's SPCE business, customer trust emerges when positive interpersonal relationships between dealer and customer develop due to repeated successful service encounters. Trust has been found self-enforcing in accordance with the disconfirmation-paradigm (refer to 2.3.2). Satisfaction makes KB's SPCE customers loyal since they estimate combined product and service excellence with their dealer. They rely on the dealer's deep expertise with their machinery and personal requirements (refer to 4.2.3). By remaining with their SPCE dealer, KB's lead customers additionally reduce business risk and transaction cost they would incur when trying new dealers and service partners (refer to 4.2.4). Consequently, the barriers that safeguard the business relationship against invading competitors get enforced. This constitutes a resource-based competitive advantage in accordance with the model of Barney (1991) (refer to 2.1.1).

The emergence of the impactful element of trust seems closely linked to the experiences that KB's customers make with the dealer's aftersales performance (refer to 4.2.2). That underlines the importance of superior aftersales service through dealers for customer trust generation. This is not a new insight. The saying that the first machine is sold by the salesman but the second is sold by the aftersales department, is widely spread amongst SPCE dealers. The knowledge contribution of this study lies in the scientific mapping of the functionality and interaction of the elements that lead from customer value perception to loyalty and finally result in a competitive advantage for the SPCE sector in Germany (refer to Figure 37) and how trust from aftersales service experience is linked into that process. Thanks to this initial knowledge generation, research as well as practice can now develop a deeper understanding of the elements, their interaction, and ways to manipulate each element, to provoke a desired outcome and to start follow-up research from this point.

5.1.3 Answer to Research Question 3

RQ3: How far do Customer Trust and Loyalty Create Competitive Advantage and Business Value/Profitability in the SPCE Business?

The review has suggested that loyalty and trusting customers mean a competitive advantage to suppliers, since these customers

- do not easily change supply chain partners (refer to 2.3.4),
- are frequently ready to pay higher prices than in the average market refer to 2.3.5),
- and tend to require lower marketing efforts (refer to 2.3.5).

They ensure continuity and are a solid base for business growth (Dick & Basu, 1994; Zeithaml & Bitner, 2000). This insight has been confirmed for KB in the customer interviews (refer to 4.3.2 and 4.3.3). By retaining an established customer base, KB could equally reduce customer acquisition efforts and business risk. Interpersonal customer relationships and SPCE related expertise could enable the dealer to provide competent advice and high-quality service and keep customers even if the prices are slightly above the market and during economic downturns, like the present Covid-19 pandemic crisis (refer to 4.3.2).

The study results indicate a high potential for competitive advantage generation through trust and loyalty (refer to 4.3). At the same time, it is highlighted in the literature review that competitive advantages are transient and have to be reinvented continuously, and that current competitive advantages must be left behind before they are exhausted (Day & Moorman, 2010; McGrath & Gourlay, 2013) (refer to 2.1.1). Applying this logic to the case of KB, this would mean that KB should not rely and focus on competitive advantages that are based on trust and loyalty in the long run, but instead neglect or not to nurture these facets. But given the importance as shown in this study, as to the importance and relevance of trust for competitive advantage generation, this cannot be seen as suitable advice to KB. Customer trust in their SPCE

dealer was found to be crucial to customers' key operational routines. This was the same for the loyalty, as illustrated in 4.2.3. Both loyalty and trust were found to be fundamental pillars of KB's business success and continuity, and therefore should not be neglected or ignored. This finding, contradicts practice with theory, and challenges existing research which calls for a continuous reinvention of competitive advantage positions and omits the importance of loyalty and trust. This particularly the case at least for businesses, that base their business-model on reoccurring business through long-term customer relationships like in the SPCE industry. They should distinguish between competitive advantages based on the strategic business fundamentals of customer trust/satisfaction/loyalty which take a long time to develop and depend on hard to obtain resources, and between those that can be more easily and quickly replicated by competitors, like product-related advantages, such as an innovative feature on an excavator.

KB should continuously work on maximising customer trust/satisfaction/loyalty because these elements seem fundamental to its businesses anyway. These key aspects of trust and loyalty based on their relationship with its customers should not be ignored or neglected. Once KB manages to outperform competitors in one of these aspects, they are in a promising position to create a competitive advantageous position that is hard to copy and exceptionally impactful. These positions need to be maintained and if possible, developed further. Competitive advantages which, on the other hand, are more granular, often product or process-related, should indeed be continuously reinvented to not fall behind those competitors easy imitating them in short cycles.

5.1.4 Answer to Research Question 4

RQ4: Which Factors will Contribute to Customer Value Creation in the SPCE Business in Future?

Customer value anticipation means predicting the evolution and change of customer value perception in future (Blocker et al., 2011). To create sustainable customer value, knowledge of value aspects that are expected to be of high relevance to customers tomorrow has to be gained (Andadari et al., 2016). Based on Day and Moorman (2010); Kandampully and Duddy (1999); McGrath and Gourlay (2013) the review has found that customer value anticipation can contribute substantially to the development and defence of a competitive advantage position and thereby support the realisation of sustainable profits and growth (refer to 2.4.2). Lead customer analysis appeared apt for customer value anticipation (refer to 3.2.2).

The empirical section of the study has used the methodology of lead customer analysis for customer value anticipation in the SPCE sector. Inquiring into potential future change in customer preferences for the defined four customer value categories (refer to 2.2.2 and Figure 8) the study has found that KB's lead customers feel a decline of the cost/sacrifice value category. Specifically, the element of purchase price is expected to lose relevance for customers (refer to 4.4.1). Customer value generation out of symbolic value, i.e., value generated for customers through the meaning of SPCE brands is also expected to decline (refer to 4.4.3). In contrast, functional customer value is forecast to gain in relevance. KB's lead customers see this gain mainly coming from the needs for digitalisation, automation and standardisation (refer to 4.4.2). Finally, experiential value is expected to continue to grow in importance and remain the most important customer value aspect. Lead customers anticipate that trusting and long-term dealer relationships will be of even higher relevance for purchase decision making in future (refer to 4.4.4 Table 16).

In addition to the investigation of future change of customer preferences for the defined value categories as described in the previous paragraph, the study also used the lead customer approach to find out about future trends that are expected to strongly drive the construction industry (refer to 4.4.5). The trends of environmental sustainability, digitalisation and shortage of skilled personnel emerged as potentially major future trends shaping the construction sector. These findings that got extracted from the interview data were validated through data source triangulation, using

secondary data from industry trend reports (refer to 4.4.8). The full match of the outcomes of both approaches supports confidence in the results as well as into the trend anticipation capabilities of lead customers (refer to

Table 18).

Furthermore, the trend anticipation exercise led to the understanding that the three major trends are interconnected, meaning they can influence each other either softening or intensifying the impact of the other (refer to 4.4.6). Digitalisation plays a central role in this interconnectedness since it shows the most connections to the other two trends (refer to Figure 36). This indicates that digitalisation can be a meaningful source for future customer value.

Machinery and processes are assumed to become increasingly standardised, digitalised and automated (refer to 4.4.5). These new features meet the requirements of substituting qualified labour by automation and enhancing environmental sustainability via resource-efficient machinery and processes. Digitalisation offers the potential to substantially support in achieving both objectives. It can automate machine operation and make work processes on construction sites more efficient, decreasing the consumption of resources and reducing the ecological impact of construction work (refer to 4.4.6). To manage, repair and service digitalised and automated machinery, customers increasingly must rely on competent dealers who are informed on the specific requirements of their long-term customers. Relationship value in the form of customer trust is thus assumed to increase in importance and consequently can be a source of competitive advantage for SPCE dealers. This matches with the findings on future value potential of customer trust in section 4.4.4.

In essence, the two major factors that emerged from the data which are likely to massively contribute to customer value creation in the SPCE business in future are digitalisation and customer trust. The concurrent raise of these two aspects however appears surprising. Digitalisation has been found to bear the risk of a reduction of social interaction (Ifenthaler, 2018). But social interaction is a necessity for personal relationships, that are a precondition for trust (refer to 4.2.2).

Digitalisation is a global, societal trend (Valenduc & Vendramin, 2017). There is evidence in the data that the SPCE owners are to some extent pushed into digitalisation i.e., they do not solely implement digital tools and processes of their own accord, but in part cannot avoid it e.g., because legislation or upstream or downstream value chain partners require it. This could be customers of SPCE owners that have established digital elements in their value chains, for example, for the documentation of work processes or for communication (BIM = (Digital) Building Information Modelling – will become the mandatory standard for civil engineering projects in Germany from 2021 on (Seyis, 2020)), requiring their suppliers to implement similar digital processes to allow the integration of the suppliers' processes. LC "B" exemplary states: *"BIM forces construction companies like us to digitalise almost all processes."*

The concurrent increase in the relevance of customer trust from personal relationships, could be a consequence of the growing influence of digitalisation into the operations of SPCE customers. The social alienation between SPCE dealer and customer personnel through digitalisation, for example through more digital and less personal interaction, could in return fuel the desire for more personal, social interaction and its trust-building capacity. The interview statement of LC "I" supports this assumption: *"It (personal relationships) will become more important. We are drifting more and more towards an anonymous society in which communication is predominantly organised through digital media. But aspects like trust are difficult to transmit. In the end, humans need to get along with each other for a working business relationship."*

The results of an international study of Clarke and Kinghorn (2018) support this direction. They find that 75% of the study participants "Will want to interact with a real person more as technology improves." Out of the twelve countries included in the study, Germany scores the highest on this aspect at 84 %. Even though the study was carried out amongst B2C consumers, it signals a direction for the B2B sector, too.

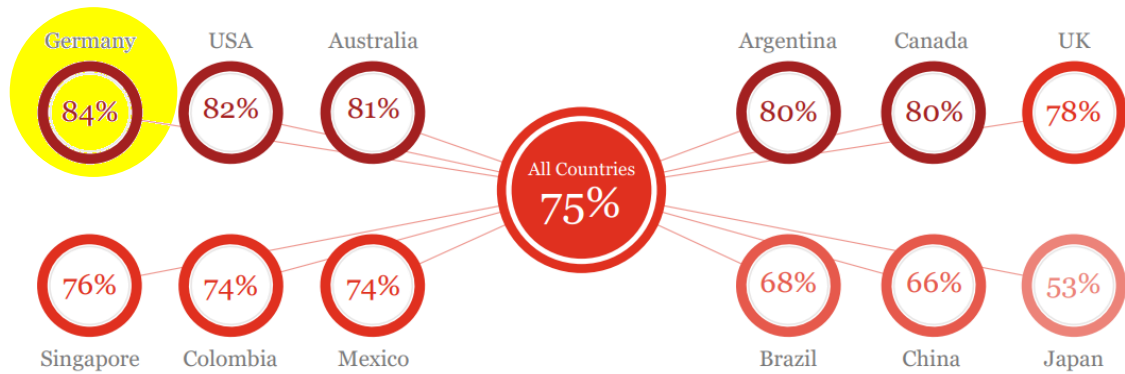


Figure 38: What Customers Prefer: Human Versus Machine Interaction (Clarke & Kinghorn, 2018)

That could mean that the generation of customer interpersonal relationship and trust will become even more important for SPCE dealers as the general trend for digitalisation is predicted to continue and intensify (refer to 4.4.5 b).

5.2 Accomplishment of Research Aim and Answer to Main Research Question

The insights gained from answering the part questions now allow answering the main research question and assess how far the aim of the study was achieved.

The aim of this study was the analysis of future sources of competitive advantage in the German SPCE industry in order to support dealers with the adjustment of their businesses to emerging market trends and customer demands.

The interviews have confirmed the categories of customer value creation as derived from the review of previous results concerning customer value (RQ1). These categories are cost/sacrifice value, functional value, symbolic value and experiential value.

KB's SPCE lead customers experience cost/sacrifice value when they feel a fair price for machinery and service has been offered. Nevertheless, the interviews have shown that obtaining a minimum price is not the main objective of KB's SPCE buyers (refer to 4.1.1). They rather seek a reliable long-term cooperation with their supplier, which should be fair for both parties (refer to 4.4.4). For the future, customers see the

relevance of pricing even more deteriorating (refer to 4.4.1) since trusting collaboration is expected to gain in relevance with increasingly complex technology (refer to 4.4.4).

Functional value is expected to gain in importance in the SPCE sector. Customers see an increasing need for substituting qualified labour with automatisations and specifically for efficiency gains through digitalisation (refer to 4.4.2). Lead customers show readiness to collaborate with suppliers to develop innovation and equally show willingness to pay for additional features or equipment.

Customers in the SPCE segment estimate good corporate machinery image as relevant (refer to 4.1.3), but the brand of the equipment itself is not all that counts. The personal image of the dealer and service provider seems more important. Customers point out that a perfect dealer image encourages their trust in the machinery manufacturer and is likely to develop when the dealer provides reliable and technically expert service long-term.

The term of experiential value in the SPCE segment comprises a larger and different range of attributes than in the consumer product segment. Social aspects are major constituents of experiential value according to the interviewed lead customers. They highly value close connectedness to their service agent, who is supposed to provide support at construction sites at short notice and should be a technical expert concerning any possible machinery trouble (refer to 4.1.3). Dealer expertise is essential since qualified staff in building sites is rare and has to seek for technical support even in case of minor operation problems (BauInfoConsult, 2018).

Since contact between service provider and customer frequently takes place on a very personal level (e.g., between construction-company owner and service agent), interpersonal trust appears to be an essential building-block to a reliable and long-time customer-dealer relationship (refer to 4.1.4). Customers increasingly depend on trust, since machines are getting more complex and thus more difficult to maintain, repair.

Customers lost due to service difficulties and a loss of trust in the service partner, could face severe operational interruption risks.

The interviewed customers desire a dealer partner, who is deeply involved with machinery and company specific issues and responds to individual difficulties in an empathic manner. Dealers, in return, depend on staff, who is competent and willing to provide this service and ready to reconfirm customer trust in the year-long partnership.

In summary, the interviews with the selected lead customers have generated valuable insights and initial knowledge on the relevance of current customer value aspects for customer value generation. Furthermore, the anticipation of customer value through the participating lead customers has provided a unique outlook on future customer value generation fields in the German SPCE sector (refer to 4.4). It has shown that functional value and experiential value carry high potential for future customer value delivery. In the category of functional value specifically digitalisation is expected to become highly relevant for customers and thereby offer chances to deliver significant future value for customers in the SPCE sector (refer to 4.4.6). Concerning experiential value, trusting and long-term dealer relationships are seen to further grow in importance for customers and thus allow dealers to create highly appreciated customer value opportunities that can result in competitive advantage (refer to 4.4.4).

The customer value anticipation exercise of this study discovered trust as a powerful source of future customer value and competitive advantage (refer to 4.4.4). Trust has a central function for all identified high potential customer value aspects. It amplifies the effects of all other aspects of present and future customer value. Loyalty emerges from trust. Trust can enhance customer satisfaction and constitute an experiential customer value itself. This self-enforcing customer value experience is an opportunity to constitute a cumulative resource-based competitive advantage, which can be hard to imitate and thus would mean an entry barrier for competitors. Interpersonal relationships, trustworthiness, and sales and service competence have been found important sources of trust development in the SPCE sector. All these aspects of

customer value creation interact to constitute customer trust, which is essential for customer loyalty and hence a source of sustainable competitive advantage.

In the course of the study it emerged that the role of trust could be extraordinary in the SPCE industry. It has been found that trust can have an amplifying effect on customer satisfaction and loyalty. When the experience of all customer values aspects is based on trust, the gained customer value was found to be exceptional (refer to 4.2.2 b). When the positive experience of the service encounter repeats, the trust level increases, and the perceived customer value grows further. Once the customer value level grows above competition, a competitive advantage position can be established. This links back into Lafley's and Martin's (2017) concept of cumulative advantage, and Morrison's and Firmstone's (2000) idea about the relationship between trust and habit presented in the literature review (refer to 2.3.3). If purchase decisions become habitual, then this corresponds with the preferences of the human brain. Customers estimate such habits and automatism (refer to 4.3.1 b). Trust eliminates the necessity to continuously re-evaluate competitive offers. The habitual repetition of purchase decision-making results in routine buying behaviour, and this effect further enforces the advantage a dealer already has over its competitors. Habitual behaviour starts with initial trust that a customer must have in a supplier to consider them at the very beginning of collaboration. Consequently, trustworthiness is a precondition for trust and thereby for habitual action, (Morrison & Firmstone, 2000).

The findings of this study in the SPCE environment confirm the functionality of Lafley's and Martin's (2017) concept of the cumulative advantage for KB's SPCE business. The study amends on the model's insights into the antecedents of habitual behaviour, namely trustworthiness, that leads to a cumulative advantage (refer to 4.2.2 c). This enriches the concept of cumulative advantage because without information about the trigger leading to it, the concept can hardly be successfully applied in practice.

Finally, the main research question of this study

How far can the Anticipation of Customer Value Support SPCE Dealers in Germany to Discover Future Sources of Value Creation and Competitive Advantage?

can now be answered.

Before, it was not clear to practitioners in the German SPCE sector how future customer value could be anticipated, what customer value elements could bear future sources of competitive advantage and how insight into these two aspects could foster SPCE dealers' future competitiveness.

The lead customer approach has been found to be a suitable way for customer value anticipation for KB. The anticipation of customer value can effectively support KB in the discovery of future sources of value creation and contribute significantly to the creation of competitive advantageous positions. It gives the dealer the opportunity to generate an understanding about those customer value categories that tend to matter most to its customers in future. This enables the organisation to create value delivery strategies, such as a communication strategy that has trust in its focus and corresponds with its customers' future needs (refer to 6.2.1 b). Being first to know about customers' future needs and in designing adequate value delivery strategies for customers can give anticipating dealers first-mover advantages, that have the capacity to result in superior business value and profitability (refer to 2.4.2). Continuous anticipation helps in the defence of such an advantageous competitive position and can thus constitute resource-based competitive advantages.

Based on the insights gained into the customer value creation chain in the SPCE sector in Germany and due to the derived anticipation of the supposedly most relevant future customer value aspects to be considered by SPCE dealers, the aim of this study – the analysis of future sources of competitive advantage in the German SPCE industry in order to support dealers with the adjustment of their businesses to emerging market trends and customer demands – has been achieved.

6 Conclusions

In this chapter the outcome of the analysis and discussion of the study-results are assessed on their contribution for theory, methodology and practice. Implications for research and business practice are laid out (section 6.1). To account for the practical orientation of a DBA thesis, section 6.2 makes concrete implication suggestions of the study findings at the level of Kraemer Baumaschinen (KB). Additionally, section 6.3 translates and extends the suggestions to other entities. Finally, the study methodology and results are critically evaluated (section 6.5) and limitations and suggestions for further research are discussed (section 6.6).

6.1 Study Contributions

Section 6.1 outlines study contributions. The study first contributes to theory by founding the model derived from the review in business practice. The review has shown that customer satisfaction, trust and loyalty can emerge as a result of customer value creation and can create sustainable competitive advantage and profitability using strategies of customer value anticipation. The definition of future competitive positioning is based on the anticipation of what customers could value in future.

Second, the study contributes to business practice suggesting that customer value anticipation can enhance and guide the process of customer value creation and – in result – generate competitive advantage in the German SPCE industry, which – as detailed in section 1.2 – is faced with an increasingly competitive environment. Customer value anticipation could be useful to develop and drive the customer value creation chain in this dynamic business field and support SPCE dealers to enhance their future value creation and competitiveness.

Third, the study contributes to methodological development of research by integrating a literature review, secondary data market research and lead customer interviews in a comprehensive mixed method approach.

6.1.1 Contributions to Theory

The key motivation behind this study was to understand from which sources strong future competitive advantage in the German self-propelled construction equipment (SPCE) industry can grow. The literature review concluded that future competitive advantage is likely to be a result of superior and relevant customer value that SPCE dealers can offer to their customers. The anticipation of future customer value has been found crucial to identifying future sources of competitive advantage.

The case of Kraemer Baumaschinen (KB) was selected to gain further insight into the concept of customer value anticipation. The collection and analysis of data from lead customers of KB unveiled which customer value aspects are thought to bear future impactful customer value potential (refer to 4.4). Customer value perceptions can be strongly amplified by trust which was found to be essential to customer value creation and hence to competitive advantage.

The result of data analysis and discussion is innovative and academically valuable at the methodological and the content level.

The study's methodological uniqueness is that lead customers can be a valuable source for the anticipation of customer value for SPCE dealers in Germany. Lead customers have the ability to inform on future value preferences of SPCE customers (refer to 4.4.10). These insights are fundamental to maintain a strong competitive advantage position of SPCE dealers in future.

Lead customer analysis had to date not been a widely applied approach in SPCE dealer business research. Recommendations how to apply lead customer analysis in academic empirical research were extremely basic (refer to 3.2.2). The study has closed this knowledge gap, by providing insight into a practically executed lead customer project, which makes its insights conceptually original. It has been found that the lead customer approach is an appropriate instrument of customer value anticipation.

The novelty in content is that interpersonal trust appears as an extremely important customer value aspect and carries the highest future customer value delivery potential in the SPCE sector in Germany. Trust is crucial to the future generation of self-amplifying, cumulative competitive advantage in the SPCE industry (refer to 4.4.4). This finding represents a significant novelty.

The study has also examined how initial trust develops and what its antecedents are. Based on concrete examples from the interview data, this study has shown that trust develops from an interpersonal level (refer to 4.2.2)

These findings confirm the antecedents of trust concept of Mayer et al. (1995), who postulate trustfulness important for customer deciding with whom to start new commercial relationships. Trustfulness is a characteristic of the trustee and measures the degree to which the other party is worth being trusted. Consequently, trustfulness can support KB to start the development of trustful relationships with customers and foster sustainable competitive advantage.

The identification of interpersonal trust as the starting point of customer value and competitive advantage generation for KB represents a significant novelty of this study. So far, the role of trust within the process of competitive advantage generation assumed by Johnson and Auh (1998) was the catalyst function in the transformation of customer satisfaction into customer loyalty. This study has changed the view on trust. Its role has been found to be much more influential. It appears to be the main influencer of the customer value experience. Trust marks the starting point of the generation of a self-amplifying, cumulative competitive advantage, that is the result of the transformation of trust into habitual customer behaviour.

The insights gained mean a further refinement of the conceptual process of competitive advantage generation. By adding trust as an amplifier of customer value, the study adds a new factor to future marketing research. The study has shown that trust develops from interpersonal towards trust on an organisational level.

The outcome of the study is a new research model (refer to Figure 35) that illustrates how customer value can turn into satisfaction, trust, loyalty and finally competitive advantage, as well as business value and profitability in the SPCE industry and how customer value anticipation can drive the whole process.

In essence, the academic contribution of this research is the following:

1. Lead customer analysis is a suitable way of anticipating customer value, the key ingredient to future competitive advantage.
2. Trust is crucial to generate future competitive advantage in the SPCE sector and should be assigned a key position in future marketing models. It develops from interpersonal to organisational trust. Leading from this, there is also a temporal dimension to the development of trust (Ford, 1980; Ford & Håkansson, 2006). In the early phase of a newly established relationship, trust stems from the level of the perceived benevolence, integrity and ability of the trustee's staff, as felt by the staff of the trustor. In the later, more advanced phase of the relationship, when trust has been perceived by the trustee's staff repetitively, it starts to grow more from positive past experiences (Mandják, Belaid, & Naudé, 2019). In this situation it gets transferred from the individuals living the relationship, to the organisations the individuals represent.

6.1.2 Contribution to Practice

The study has got important implications for the business development of KB.

Section 4.1 has shown that customer value unfolds in several customer value categories. Customers expect adequate cost/sacrifice value (e.g., reasonably priced products) (refer to 4.1.1), but even more desire superior aftersales-service, by means of dealers being ready to provide support at short notice and are technical experts in

their field (refer to 4.1.3). Profitable, competitive dealers earn from selling machinery, but over the years they gain more, when servicing existing equipment reliably and repetitively based on permanent service contracts. Product bundles of SPCE and long-term service contracts make revenue streams predictable and return value in the form of predictable cost (refer to 4.1.1 b), capacity gains to focus on core activities (refer to 4.4.2 a) and peace of mind (refer to 4.2.4 a) to customers.

Customers desire experiential value and this dimension has been newly defined in the course of this study. While in the consumer goods segment, experience emerges while using the product, SPCE customers predominantly estimate a trusting service partner relationship. They desire a reliable and responsible contact person at the dealer, who is involved in their construction machinery fleet and knows which service jobs are due when, which technical failures may occur, and which remedies exist. They finally appreciate fair advice when new machinery investments are necessary or which features and products promise increased efficiency and usage advantageous on construction sites, like innovative digital machine command systems.

The study has shown in section 4.1.3 that for the interviewed lead customers brand value is mostly located with the dealer and service agent rather than with the original equipment manufacturer (OEM). The reason is that the product quality promise is indispensable bundled with the service quality promise of the dealer to keep the machine operating satisfactory throughout its utilisation. Reliable machine operation is valued higher than esteem through operating an iconic SPCE brand. Reliable dealer advice can support customer staff in the building site in handling and maintaining the equipment correctly and is essential to avoid damage or even accidents with the machinery. In sum, the SPCE dealer takes the primary role in maintaining and repairing and equally advising on the use and new acquisition of SPCE. A long, trustful relationship, which reduces acquisition, transaction and relationship costs provides value to customers and contribute to a unique, loyal relationship between customer and dealer, representing a source for competitive advantage generation for the dealer (refer to 4.3.1).

To build and maintain trustful relationship, KB is well advised to anticipate early what customers might require in future and to offer adequate solutions ideally even before new needs occur. As shown in section 4.4 customer appreciate when their needs are anticipated. The anticipation of customer needs contributes to the prevention that customers seek advice on current problems, and more importantly future needs, with competitors and it helps to keep customer relationships stable and profitable. To explore up-coming trends lead customers are a relevant and valuable source of information for KB.

The study has identified trends in the construction industry, based on the interviews and additional analysis on secondary data, that are expected to be extraordinary impactful in the future (refer to 4.4.5 and 4.4.9):

- Digitalisation
- Environmental sustainability
- The lack of skilled labour

These three trends are interconnected, influencing each other. Digitalisation is the most influential trend. It can intensify or weaken the impact of the other two (refer to 4.4.6).

The trend for digitalisation in the construction industry signals KB to think about solutions that support customers in digitalising their processes. The trend for environmental sustainability tells that KB should offer products that allow customers to improve the ecological impact of their operations. Finally, the insight that the lack of skilled labour is expected to impact the construction even more in future, informs the dealer that solutions that reduce the dependency on skilled manual labour of their customers (automation) might become highly desired.

This study has explained that by considering the three major trends and their implications for the SPCE sector in the development of its future product portfolio early, KB could manoeuvre the company in a good position to proactively answer to

rising future needs and to keep its customers more satisfied and engaged than competition. That would allow the business to create unique customer value and generate first-mover competitive advantages.

6.1.3 Contribution to Research Methodology

The study has investigated into the research questions by utilising a mixed-method research approach which is novel and innovative in customer value anticipation research in the German SPCE sector. The study has combined a review of academic literature (Chapter 2), with lead customer analysis and a review of practical literature on future trends (Chapter 4) to accomplish the research aim: Analysing future sources of competitive advantage in the German self-propelled construction industry in order to support SPCE dealers with the adjustment of their businesses to emerging market trends and customer demands.

A single method alone would not have been able to meet this research aim. The literature review has first classified sources of customer value and the major concepts contributing to competitive advantage generation from a general, theoretical viewpoint. No concrete academic applications of the available theories for the SPCE sector, however, were available. The interview study and the practitioner review have added SPCE-specific data.

The interviews provide a unique and authentic perspective of SPCE customers, here innovative lead customers. The retrieved customer needs and derived customer value delivery potentials are thus valid and reflect and weigh the review categories.

To classify the interview results concerning the industry trends that the customers expect to be impactful in future, additional secondary data in the form of industry trends reports was analysed. This allowed verifying the primary data from the interviews and to classify the trends concerning their relevance.

The integrated approach of literature review, lead-customer analysis and secondary data review provides the SPCE sector and academics with a comprehensive perspective on success factors in the field and with a cause-and-effect chain, how customer trust and finally competitive advantage can develop.

The method is adaptive to other sectors for which a profound theoretical underpinning is unavailable and has proven helpful to develop a novel theoretical framework, which can support further empirical research-work.

6.2 Practical Recommendations for KB

Through analysing the customer value creation chain in the SPCE segment and learning about future sources of impactful customer value and resulting competitive advantage, the study has generated valuable and novel insight. Applying these to practice, recommendations are given to the case company KB. This contributes to the practical significance of the study and corresponds to the nature of a DBA thesis, to significantly develop the organisation under study and to develop doctoral work that has relevance for theory with a strong connection to practice (University of Gloucestershire, 2020).

The recommendations are divided into strategic and product concepts. The strategic recommendations in 6.2.1 are predominantly aiming at organisational development and are mostly based on the relatively abstract insights into impactful future customer value aspects. The product recommendations in 6.2.2 are mainly developed out of the understanding around impactful future trends in construction, which allow for more concrete advise on product concepts answering the customer needs arising from the trends.

6.2.1 Business Strategy Recommendations for KB

This section develops and presents strategic recommendation for the areas of human resource management and marketing and advises on the development of sales and service competence and the organisational orientation towards customer needs.

a) Recommendations to Develop Human Resource Strategy

The study has found interpersonal customer trust into customer facing staff being crucial to customer loyalty and future competitive advantage (refer to 4.3). Considering that, KB should develop a human resources strategy that fosters a customer trust orientated internal organisation. The implementation of such new organisational direction requires the company to apply it not only to the way that the existing workforce is looked at but also at the approach taken when hiring new staff. Therefore, the following recommendations are split and start with those aiming at existing staff and continue with those for potential staff.

The company should develop and document an understanding of the relevance of customer trust for each of its positions i.e., that for the service-counter representative customer trust orientation is presumably more relevant than for the back-office IT specialist. KB could analyse how far the respective current position holders are familiar with the relevance of trust for business success at KB and how well their capabilities to generate trust are developed. This way potential knowledge and capability gaps could be identified. What is crucial for this endeavour is the identification of its employees' trust-building capabilities. Regular surveys amongst customers about the trustfulness of KB's staff, based on a matrix comprising of the three trustworthiness elements ability, integrity and benevolence developed by Mayer et al. (1995), could become the tool of choice to this end. This way, KB could not only measure existing trust-levels of their staff, but also track how these trust-levels develop over time. This information could be integrated into KB's compensation schemes in a way that positive trust development over time is incentivised. This would signal to KB's staff that the company really cares about customer trust and make employees focus on it. Additionally, trust-

focussed surveys amongst customers could signal to the market that KB cares about trust, what could be positively perceived by existing and potential customers (refer to 4.3.1).

Based on the analysis of KB's employees' established interpersonal customer trust levels and customer trust generation capabilities, KB could maximise the customer interaction of its trustworthy employees i.e, staff with more developed trust generation capabilities are given roles that have intensive customer interaction. This could foster the development of customer trust into its staff and thereby into its organisation (refer to 4.1.4 b). On the other hand, staff who lacks trust-building-relevant skills and for whom coaching on trust generation appears to be unfruitful should be assigned tasks with minimal/no customer interaction.

Since trust orientation would be a new strategy in KB, it could not be expected that the entire staff is aware of the relevance of trust for competitiveness and the way trust acts in the personal/organisational relationship with customers and how to foster it. Consequently, a dedicated training program would be needed that for example trains the salesforce how to demonstrate trustworthiness at the first contact with potential customers. KB is advised to train its employees – particularly those that hold identified, highly trust-relevant positions like salesman or service manager. Employees holding such positions should interact closely and jointly attempt to maximise customer orientation and specifically the development of customer trust in a series of mainly small steps of creating satisfaction.

Despite training and coaching efforts it might be realised that certain staff does not meet the expected trust capability levels and cannot be developed towards it. In such cases KB should look out for job candidates who are known in the SPCE market for being highly trusted by customers and who could meet the defined trust levels of the position. Hiring such employees could transform the personal trust customers have in them into organisational trust in KB (refer to 4.1.4). Trustworthy employees represent a source of high customer value and could finally generate competitive advantage for KB, contributing to improved profitability (refer to 4.3.1 and 4.3.2). Winning highly

trusted employees from competitors could have the contrary effect on rival dealers. Customers could lose trust in competitor organisations when trustworthy employees leave, which could weaken their competitive positioning since they lose a rare resource.

The measurement of existing customer trust levels and trust-building capabilities of potential staff would be key to successful implementation of this strategy. These could be assessed through recommendations of KB's existing customers. Customers usually are in contact with staff from different dealers, since most customers operate equipment acquired from several dealers. At the same time, KB's customers would be aware of the trust orientation and trust related requirements of KB. Consequently, these customers might know about personnel from KB's competition, matching with the trust related characteristics KB desires. Offering special deals for customers recommending staff fitting well with KB's requirements could motivate existing customers to actively engage in the hiring process of KB.

Next to customer trust-orientated hiring strategies, retaining employees with established trustful customer relationships is important, due to the shortage of skilled personnel and also considering the immense cost of up to 200 % of the annual salary for identifying, hiring and on-boarding new staff (Lee, Hom, Eberly, & Li, 2018). KB could analyse, which of their employees enjoy particular customer trust and should install impactful retention strategies like career growth plans or self-realisation opportunities to retain them.

Overall, HR management holds a major role in the movement of KB towards a trust-orientated organisation. Through trust-focussed employee development-, hiring- and retention strategies, KB should embed customer trust as a major aspect in its human capital.

Next to HR, the study insight could also be applied to the marketing strategy of KB.

b) Recommendations to Develop Marketing Strategy

Based on gained insights that trust is a major source for customer value and competitive advantage generation (refer to 4.1.4 and 4.3.1), KB could develop a corresponding marketing strategy that is mirrored, amongst others, into targeted marketing campaigns with impactful messages, aiming at trust generation. For that, positioning core value propositions around the benefits that customers can get from its trustworthy staff and organisation could be used. Marketing campaigns and related communication that have trustfulness in its focus could transfer the messages. The identified impactful customer value propositions of high serviceability (refer to 4.1.3), risk control (refer to 4.2.4), psychological reassurance (refer to 4.2.4), and enjoyable, personal relationships (refer to 4.1.4) could also be targeted. These values could appeal to customers, generate interpersonal trust, and thereby support the generation of organisational trust (refer to 4.1.4 b). As learned through the study, machine acquisition cost seems not to be a source of high future customer value and competitive advantage (refer to 4.4.1) so that it might be wise to put less resources here.

Table 20 shows examples of marketing campaigns and corresponding value perception fostering marketing messages, targeting the identified impactful customer value categories:

Targeted Value Proposition	Marketing Campaign	Marketing Communication Message
High Serviceability	24-hour service for any brand within the contractually assigned OEM sales territory.	"We can fix anything, anywhere, anytime in 24 hours. If not, a bridge machine comes for free."
Risk Control	Free bridge machine in case of machine break down. Warranty Extension Programs. Cost per hour service charges or service flat-rates.	"Risk coverage comes standard at KB." "Your risk on our account." "Calculatable cost from start to end."
Psychological Reassurance	Post-SPCE sales customer communication to confirm that the right SPCE buying-choice was made.	"Congratulations: You made the right choice!"
Enjoyable Personal Relationships	Annual open day, specifically targeted at KB's customers, employees, and their families to meet and socialise.	"KB – great machines and nice people!"

Table 20: Trustworthiness-Orientated Marketing Campaigns and Marketing Messages

Marketing campaigns that focus on the trustworthiness of KB and that target trust generation could motivate potential customers to engage with KB to experience the organisation's trustfulness themselves (refer to 4.2.2 c). This could make KB's marketing approach stand out from the one of its competitors that does not have trust in its focus. This could contribute to a unique competitive positioning of KB.

Having learned about the value customers perceive from competent advice in machine procurement and maintenance/repair, promising opportunities for customer value

generation in developing the competencies of its sales and service organisation arise. Practical recommendations in that regard are given in the following section.

c) Development of Service and Sales Competence

The study has shown that KB's customers tend to increasingly rely on their competence since digitalisation and further automation make machinery increasingly complex (refer to 4.2.1 a). This increases the need of customers for professional advice when thinking about investments in new machinery (refer to 4.2.3 a). Such advice through salesmen should be based on a deep understanding of the of the customers' value chain to ensure that suggested machinery adds maximum value to it.

Similarly, dealers' aftersales service should be organised in a way that it can prevent machine failure or react to occurred failures promptly and adequately, so that downtime of machines is kept at or below the level that customers expect (refer to 4.2.1 b). Both superior investment advice and reliable aftersales services, carry a very high potential for customer value generation. However, customers must have trust in the dealer's capabilities regarding these two aspects in order to initially engage with them, as trust plays a central role in inter-organisational relationships.

Accordingly, KB should invest into the development of trust-building competencies of its sales and aftersales organisation, that demonstrate their commitment for delivering superior customer value. This includes the development of the required skills of its sales and service staff and the setup of internal processes and organisational structures that enable its staff to deliver outstanding sales and aftersales experiences to customers.

The customer facing sales team should be trained on the value chain elements of their customers, to foster understanding for how customers generate value and profit. The sales team also needs to have a deep knowledge about the key features of KB's product portfolio and the benefits these features incorporate for customers. They need to generate the capability to bring both together i.e., to understand how KB's

product's benefits can add superior value within their customers' value chains. Once customers realise that KB's salesmen are not purely interested in selling any machine but show an interest and capability in engaging with the customers' needs and value chain processes while consulting customers on improving the latter through better and innovative solutions, trust generation is fostered (refer to 4.2.2 c).

The service team also needs to be aware of the value chain of its customers to realise how their service products can contribute to improved customer processes and increase value generation (refer to 4.2.1 b). Awareness should be created amongst the service team about how crucial their superior performance in repair and maintenance works is to the value generation at their customers' businesses. The elements that superior performance and customer value generation in aftersales is made of – namely technical expertise, speed and precision in machine failure identification and repair (refer to 4.2.1 b) – should be targeted through individual training plans for each service team member. Parts availability and the technical equipment of workshops and service vans should be optimised aiming at prompt failure detection and solution to support superior service value generation to foster customer trust through outstanding service performance.

Continuous analysis of KB's internal trust relevant processes regarding their performance and impact on customer trust generation and the potential for improving them is needed to align and develop the organisation towards a customer trust focussed company. The analysis of the reaction-time of the aftersales team to incoming service calls or off-the-shelf parts availability rates serve as examples for trust relevant processes to monitor.

The next section focusses on another process that is very relevant for value and trust, the solution of critical machine-down cases.

d) Customer Benefit Orientation in Service and Sales

The study concluded that customers highly estimate the dealer's integrity and engagement for their personal requirements (refer to 4.2.1 c). Accordingly, KB should make efforts to establish a business strategy that aims at maximising customer benefit. KB should demonstrate and communicate to its customers its interest in positioning customer benefit as the primary aspiration of all its business activities. Such strategic direction should be reflected in the communication and action of all employees at the sales and service desk.

Specific attention should be paid to the generation of customer satisfaction in stressful situations for customers, like the breakdown of key machines in customers' value-chains. It has been found that such circumstances bear a high potential of organisational trust-generation if customer benefit expectations are met or exceeded (refer to 4.2.4 b). In contrast, incidents of tension can lead to the termination of existing business relationships if customer benefit expectations are not met. Therefore, KB should establish an emergency process for urgent machine-down cases, to ensure these are handled with priority by adequate staff and with outstanding professionalism. Such a process needs to define the inbound and outbound flow of communication between KB and the customer, in order to ensure maximum information exchange and transparency of the status of the case. Additionally, the process needs to assign roles and responsibilities to positions at KB. The implementation of such a process could foster customer trust into the service capabilities of KB and deliver customer value through reduced psychological cost. Figure 39 sketches a possible design of such a process:

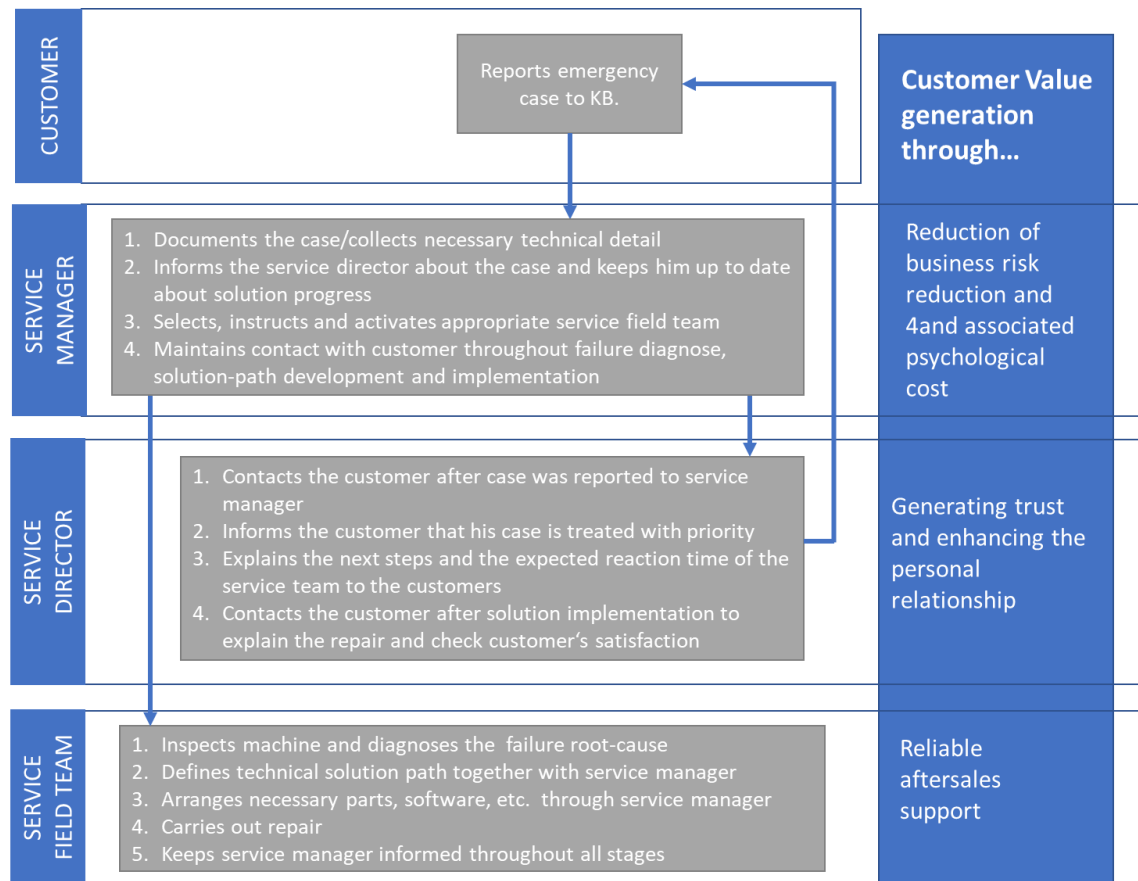


Figure 39: Trust-Orientated Process Description for Emergency Machine-Down Cases

The process describes the way an emergency case could be dealt with in KB and maps the involved stakeholders and their responsibilities: The service manager is the point of contact for customers who report emergency cases. He collects necessary information, initiates, and coordinates the actions of problem-resolution and keeps continuous contact with customers to maximise transparency of problem-resolution steps. This supports customer value generation because it helps to plan the necessary steps for continuation of the customer's value chain processes, reducing business risk (refer to 4.2.4 a) and associated psychological cost (refer to 4.1.1 c). This could mean to understand if a timely problem resolution is realistic that can be waited for, or whether the repair is likely to take too long, so that a bridge machine needs to be arranged. Next to ensuring continuous communication with the customer, the service manager also escalates the case to the service director to ensure KB's management is aware of important machine failure cases.

The service director is part of the communication with the customer during and after problem resolution, to demonstrate the relevance of a customers' emergency case for KB. This could generate customer value through strengthening the impactful element of trust and enhance the personal relationship with the customer (refer to 4.1.4). Furthermore, this could demonstrate KB's seriousness and focus when it comes to customer service support especially in critical cases for the customer.

The service field team's responsibility is to carry out the repair in a timely and professional way through continuous exchange with, and support from the service manager. A professional failure solution generates value in the impactful field of reliable aftersales support (refer to 4.2.1 b)

The interplay of the process stakeholders aims to generate customer value mainly in two ways:

1. Resolving the interruption of the customers' value chain quickly and professionally reducing operational risk and psychological cost.
2. Demonstrate KB's serviceability to customers, to generate customer satisfaction, resulting in customer trust.

6.2.2 Product Concept Recommendations for KB

Beyond the analysis of the mechanisms of the customer value creation, the identification of innovative industry trends in the SPCE segment has been another element of this study. Combining the research of secondary resources concerning trends in the construction sector (refer to 4.4.8) with relevant primary data from lead customer interviews (refer to 4.4.5), the study has identified major trends for the SPCE sector: Digitalisation, shortage of labour and environmental sustainability. These trends seem interdependent (refer to 4.4.6). Digitalisation plays a central role in that context. Digitalisation is expected to lead to a significant transformation of the entire

construction industry. Additionally, it has the potential to positively affect the other two major trends. A deeper understanding of this interdependency (refer to Figure 36) has been found to be a potential source of superior customer value and thereby competitive advantage. Based on this understanding, the following sections present conceptual product ideas for KB, derived from the lead customer interviews, that answer to the customer needs that are likely to develop from the identified trends. This contributes to the practical relevance of this study.

a) Complementary Procurement of Machine Operators

The complementary procurement of the rare resource of machine operators to SPCE customers could be a countermeasure to the labour staff shortage in the construction sector in Germany. The battle for talent on the German labour market is expected to intensify due to demographic changes (Weber, 2018; World Economic Forum/ Boston Consulting Group, 2016) (refer to 4.4.5 c), while the demand for staff training and specialisation is predicted to grow (Mai & Schwahn, 2018). Weber (2018) suggests in-house staff leasing to improve staff availability and training. This potential solution is problematic, because it might be realisable for large companies with hundreds of employees. But due to scale disadvantages this approach is less practical for small and medium-sized construction companies employing less than 100 people, which is the size of the vast majority of construction companies. World Economic Forum/ Boston Consulting Group (2016) suggests smart hiring strategies and new partnerships that create new pools of candidates as a solution to skilled labour shortage. This idea represents an extraordinary opportunity of future customer value creation for KB. By diversifying its business model and offering staff leasing in combination with SPCE, KB could offer a solution to the customers' urgent need for qualified staff, which is expected to become even more eminent in the future (refer to 4.4.5 c)

KB could bundle the purchase of SPCE and the leasing of expert operators. By combining a rare (qualified staff) with a non-rare resource (SPCE), KB could increase the customer attractiveness of their service and at the same time build up a switching

barrier for customers. To keep customer loyalty up, staff should be leased rather than conveyed to the customers, to keep hands on the rare human resource.

Such lateral diversification into personal marketing could mean a logical extension of KB's business models. The potential customer base for leased SPCE operators fully overlaps with the customer pool for SPCE. This means that customer relationship and knowledge of customer staff requirements and preferences have already been developed. KB has extensive and broad relationships within the construction industry. Thanks to this, KB would be well positioned to identify, attract, hire and train SPCE operators. That would allow KB to build up a reasonable pool of SPCE operators for a staff leasing program. In turn, potential staff could be attracted by symbolic/expressive value in the form of self-identity/worth, personal meaning and self-expression generated by premium training and career development possibilities at KB. Also, the variety of challenges in constantly changing environments and projects could attract operators to join the KB staff-lease pool. Analysts foresee, that the following work-related aspects in the construction industry might increase in importance (Mai & Schwahn, 2018; Weber, 2018; World Economic Forum/ Boston Consulting Group, 2016):

- Employer image improvement
- Job excitement
- Modern workplaces
- Training and career development offerings
- Upgrading of digital capabilities
- Catering for requirements of aging workforce
- Integration of underrepresented social groups

Answering to these multifaceted developments supposedly means a challenge, especially for small and medium-sized construction companies. A professional staff leasing company might have better qualification and resources to correspond to these human resource requirements in a professional manner. Thus, a staff leasing program at KB could benefit all stakeholders:

SPCE Customers: It could provide an answer to the future need of KB's customers for more qualified staff (refer to 4.4.5 c).

KB: It could enable KB to deliver extensive customer value and generate competitive advantage.

SPCE Operators: It could provide the desired future working environment and job characteristics to operators.

b) Machine Standardisation to Reduce Cost

Machine standardisation is a way to reduce cost in relation to operator training, parts-stocking cost, service complexity and maintenance and a source of customer value (refer to 4.4.2 a) . It answers to the trends of shortage of skilled labour and partially to the trend of environmental sustainability. In a situation when skilled staff are rare, less time invested in operator training and machine maintenance could mean more productive time for SPCE operators on their machines. Less parts-stocking means fewer capital employed. Reduced service complexity could mean a reduction of training- and travel-needs for technicians to keep machines up and running. This might contribute to a higher environmental sustainability of construction companies – one of the three impactful future trends.

To achieve a higher level of standardisation for SPCE, KB could limit the variety of SPCE brands in its portfolio. Ideally, KB should select one full-line SPCE brand that comprises all its required products. Due to the high level of communality of the functionality of different SPCE models of the same brand, customer operators would need less training. Maintenance intervals and the parts and materials recommended for maintenance could equally be synchronised and standardised to save costs. For example, required filters for maintenance and the location of maintenance points, like grease fittings, are usually identical for SPCE of the same brand. In effect, less operator training on maintenance activities is required and parts communality reduces stocking-

cost. Focussing on one full-line brand reduces maintenance cost and maintenance complexity – an effect, customers could appreciate in future (refer to 4.4.2). For KB, the limitation to just one SPCE brand could also bring benefits. The number of relationships with suppliers that have to be managed and maintained would be reduced. The complexity of managing different brands i.e., handling different supplier IT-systems, controlling stock, training employees, mastering multiple warranty rules and regulations, could be minimised. This could contribute to efficiency and thereby to business value and profitability.

c) Replacing Human Labour with Automation

New technologies can foster work efficiency and allow for higher automation on construction sites to reduce the dependency on labour and thereby respond to the skilled labour shortage-trend (refer to 4.4.9). KB could leverage this development by offering modern technologies and developing service and consultation excellence. Hydraulic work-attachment quick-couplers on excavators for instance, allow operators to change the working-tool on their machine automatically from the cabin. No support from a colleague on the ground is necessary, saving working time and resources. Three-dimensional, digital machine commanding systems are another fast-growing segment. The machines use GPS data and digital landscape models to automatically determine the exact position of work equipment on the construction site. By integrating three-dimensional technology into the machine steering system, the machine movement is automatically stopped when, for example, the planned depth of a trench is reached. The traditional approach to control digging depth is to have a person on the ground who constantly checks with a levelling rod. This resource can be replaced through three-dimensional technology, which saves significant time and resources for SPCE customers and thereby generates customer value.

Through gaining excellence on innovative automation technology, KB could consult its customers on raising efficiency, answer to an identified industry trend and thereby add value to its clients (refer to 4.4.2).

d) Extension of Service Portfolio

As the lead customer interviews unveiled, customers desire to offload non-core tasks related to SPCE fleet management (refer to 4.4.2). The extension of service offers of SPCE dealers could allow SPCE customers to concentrate on their construction core businesses where they have the highest competencies and add the highest value and answer to the trend of skilled labour shortage.

Digital technology enables KB to monitor the maintenance status of customers' machines remotely and to discharge customers from the continuous, non-core maintenance-monitoring task. Keeping maintenance intervals for SPCE is important to prevent costly machine damage. Regular maintenance reduces the risk of machine downtimes on construction sites, preventing costly project delays. When a machine becomes due for maintenance the digital service information system pre-alerts the dealer via the machine's GPS system. The dealer then notifies the customer and arranges a service appointment. An additional fleet maintenance contract can accomplish this service and generally mandates the dealer to carry out all necessary maintenance works on customers' SPCE fleet and save case-by-case approval by the customers' fleet management. Maintenance frame-agreements can also eliminate individual price negotiations and further automate and speed up the maintenance process. It is a form of a habitual procurement process that customers seem to appreciate. This can save customers time and reduce transaction costs, which customers can invest more effectively in their business's core activities (refer to 4.2.4). Essentially, constant customer interaction between dealer and customer on aftersales aspects, identified as highly relevant for customer value generation, allow dealers to build up and further enforce customer trust (refer to 4.1.4).

Machine logistics is another opportunity for KB to extend their service portfolio. Especially large SPCE (above 35-tonne operating weight) is mostly operated locally in quarries or on recycling yards and rarely transported. Most small to medium-sized SPCE, however, are constantly moved from one construction site to the other. Logistics is a reoccurring task for SPCE customers. But logistics is complex due to a wide range of

constantly changing regulations and requirements for instance, load-securing requirements, environmental restrictions or driving time regulations. SPCE logistics require constant attention and staff with special skills. On top, customers need to invest in transportation equipment like trucks and special flat-bed trailers. For small to medium-sized construction companies this is likely not to be cost-effective given the non-economic utilisation rates. KB could free customers from this logistics burden by offering SPCE logistics as a service. Due to their business relationship with hundreds of SPCE customers, KB could benefit from scale advantages and use transportation to capacity more easily than customers. This would answer to the trend of environmental sustainability (refer to 4.4.8). Improved transportation capacity usage means less unproductive/empty lorries on the road resulting in a reduction of air pollution, noise emission and traffic.

Another aspect is that specialised logistics staff of KB could be better qualified in transportation than employees of small to medium-sized SPCE customers that only deal with logistic matters unfrequently. This could improve the professionalism and efficiency of logistic services provided through KB versus the logistics quality small SPCE owners can generate themselves. It would also provide an answer to the skilled labour shortage trend in the construction industry (refer to 4.4.8).

Logistic needs of SPCE customers often appear suddenly and change frequently due to sudden changes in the demand on construction sites, changes in plan, machine failures or other unforeseen circumstances. Consequently, logistics is a lead-time sensitive business where speed in supplier reaction matters. To answer to this need for reaction speed, KB could develop a mobile application, that allows customers to book machinery logistics online and process the order including the necessary documentation online/digitally. This could speed up logistic bookings and enable customer-personnel to save time. It could reduce complexity of the booking process for customers through digital and simple routines and digital help sections or online tutorials. This automation could reduce the training need of customer staff what is valued by customers (refer to 4.4.5 b). The order fulfilment process could be made traceable and transparent for customers i.e., allowing them to constantly check the

expected transport arrival time, online. This could reduce a customer's psychological cost through risk and stress reduction (refer to 4.1.1 c). Such innovative order processing could furthermore address the customer need for process digitalisation and help reduce the dependency on skilled labour (refer to 4.4.5). A similar digital solution has already been developed in the dump material sector, that like SPCE dealers also mainly has construction companies as its customers. Through a mobile application, customers can order dump material like gravel, online.

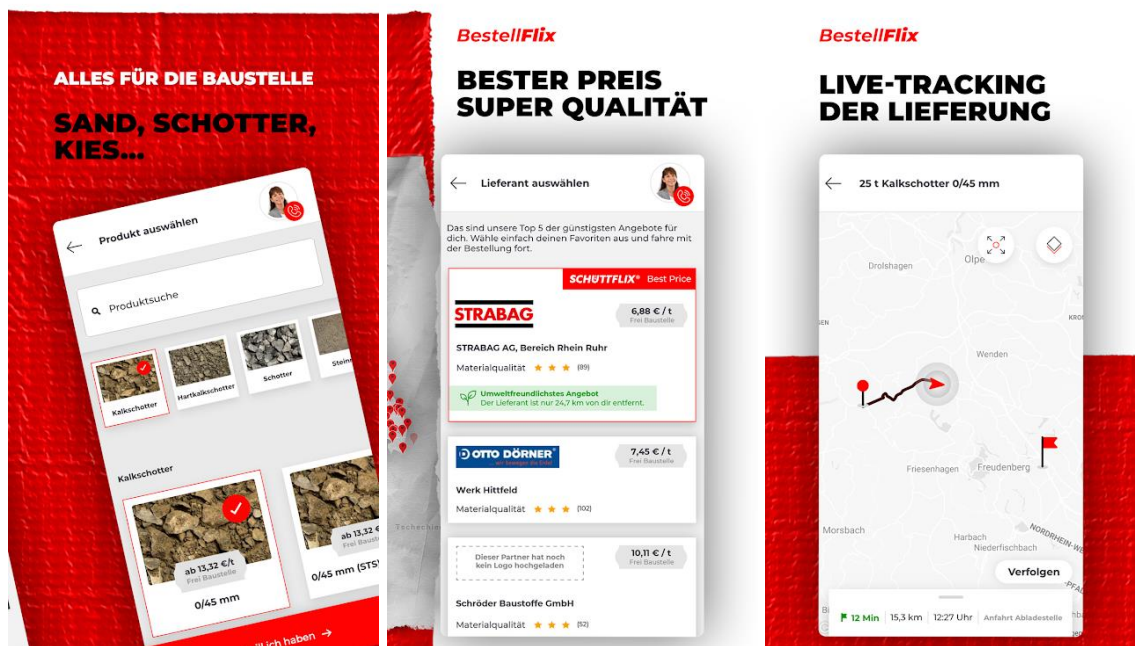


Figure 40: Screenshots Schüttflix Mobile Application (Magazin, 2020)

The concept's value for customers lies in:

- Speed: Delivery within four hours
- Transparency: Delivery status can be tracked live online
- Efficiency: Easy and fast order process, no paperwork
- Reliability: Only trustful suppliers are selected

The start-up company running the application list their vision-focus, customer-centricity, agility and trustworthiness as their success factors.

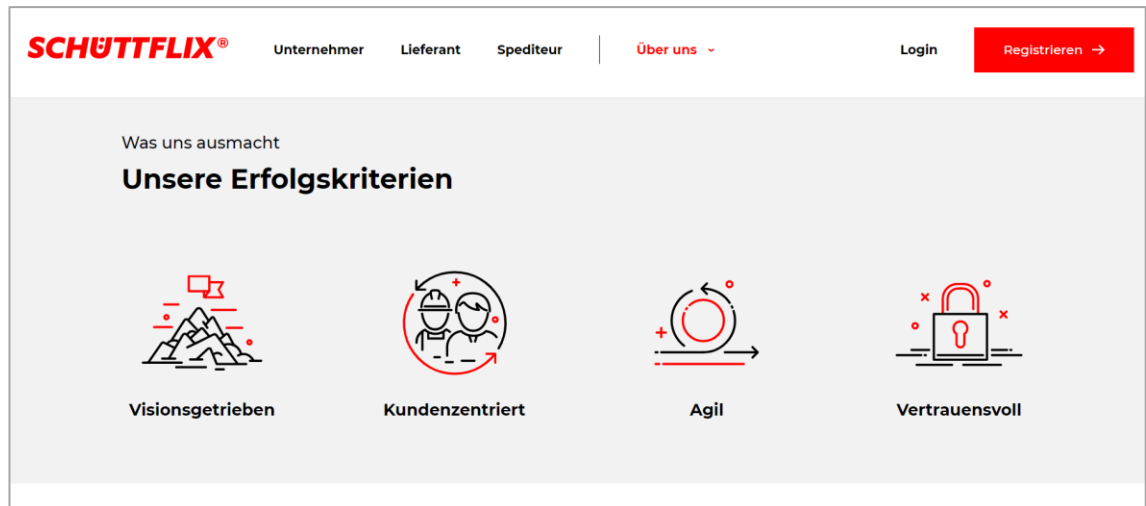


Figure 41: Schüttflix Success Criteria (Schüttflix, 2020)

Since its launch in 2018, the company experienced a monthly growth rate of 50 % (Kapalschinski, 2020). This example shows that offering services through a smart digital channel, designed according to identified impactful customer value aspects like trustfulness or efficiency, can become a successful business approach in the construction sector. This speaks for the idea to offer services of KB – like logistics – through a digital channel.

Related to the idea presented above to extend the portfolio of KB by digitally supported services, the next section looks into how the dealer could foster the process digitalisation of its customers.

e) Products Supporting SPCE Customers in Process-Digitalisation

Products supporting SPCE customers in the digitalisation of their processes offers the opportunity to add value to customers' future needs and corresponds with the digitalisation trend in the SPCE industry (refer to 4.4.2). It can drive customer organisations' desired digitalisation, reduces the dependency on labour, raises the attractiveness of work in the construction sector and contributes to improved environmental sustainability i.e., it can answer to the influential future trends in the construction industry.

The screening of analogous industries unveiled that producers of military, mining and civil protection equipment have developed digital tools for equipment tele-remote control. The main benefit of remote-controlled machines lies in the increased safety and comfort for the operator. Operators can control the machine remotely, theoretically from any place via the internet. This prevents operators from exposure to unhealthy hazardous environments. Tele-remote control can enhance work efficiency, provide a more comfortable work environment e.g., less noise exposure, no dust and comfortable temperatures, reducing operator fatigue. Tele-remote control of machinery implies the opportunity to make the operator job more attractive for newcomers as well as for elderly employees, because physical stress is reduced. SPCE remote control can reduce a company's dependency on staff: A lower number of operators is needed since operator working time utilisation increases, due to travel-time reduction. This also supports customer profitability. Digital remote control of machinery delivers cost/sacrifice value by reducing operating cost (refer to 4.1.1) and answers to the three impactful future trends in the construction industry (refer to 4.4.8).

World Economic Forum/ Boston Consulting Group (2016) calls for innovative strategies that create new pools of candidates as a solution to the skilled labour shortage. The tele-remote work routine is close to the experience of famous video games like "Construction Simulator 2017". Here, players can virtually operate various types of SPCE, which could make the operator job attractive for people that enjoy playing video games, thereby opening a new source of skilled labour for construction companies (refer to 4.4.5 c). Analogous ideas are developed in the military. In 2015 Russia's former Deputy Premier Minister Dmitri Rogosin made the statement that the Russian army plans to hire video game players who are experienced with the game "World of Tanks" as tank operators (Rogosin, 2015).

The similarity of the set-up of a SPCE tele-remote operator workplace in Figure 42 with that of a professional gaming seat as shown in Figure 43 supports this idea.

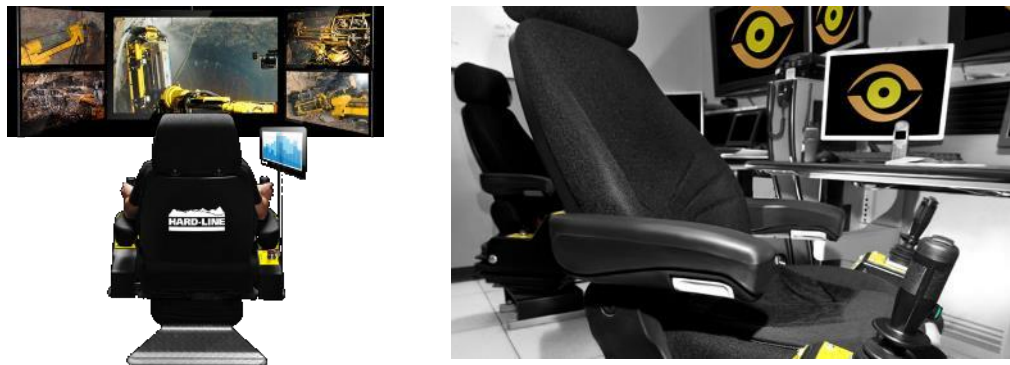


Figure 42: Tele-Remote Control System for Mining Equipment (HLS_Hard-Line_Solutions_Inc., 2018)



Figure 43: Professional Gaming Seat Thrustmaster T500 RS (SmilerBull, 2015)

Remotely operated SPCE could generate symbolic value for equipment operators by improving their self-identity/worth and the personal meaning. The role of machine operators is upgraded to digital command experts and the negative image of a dirty and noisy job is eliminated. The machine operator job could gain in attraction what could reduce recruitment cost and enhance employee retention, important in times of skilled labour shortage (refer to 4.4.5 c). Next to operator satisfaction and job

attractiveness, the environmental sustainability of a construction business could also benefit from digital remote-control of SPCE equipment. Operator-travel to different worksites could be avoided (4.4.5 a). That could additionally reduce operating costs and increase business profitability. This gives a social meaning to this innovation and adds symbolic customer value.

The discussed benefits make tele-remote-controlled equipment an interesting innovation for KB. By providing digital remote controlled SPCE products, KB could at the same time meet the industry trends of reducing skilled labour requirements and increasing environmental sustainability. Overall, offering tele-remote-controlled SPCE implies significant customer value delivery opportunities for SPCE dealers as it provides answers to future trends and thereby supports the generation of strong future competitive advantage positions.

Looking back at the analysis of interview results on future trends, it has been found that the major trends identified in the SPCE industry seem interdependent (refer to 4.4.6). Digitalisation could partially absorb negative impact of the lack of labour and positively contribute to the trend of environmental sustainability. Hence, digitalisation seems the core trend in the SPCE industry. This implies that SPCE dealers' efforts to drive digitalisation in the construction industry could result in a multiplication of positive effects on SPCE customers concerning the other two trends. Digitalisation can be a source of substantial customer value to SPCE customers and result in a strong competitive advantage for dealers like KB. Products fostering the digitalisation of customer processes should thus be in the centre of KB's development activities.

Nevertheless, referring back to the alienation discussion under 5.1.4, it has to be considered that digitalisation, for example in the form of digitalised order placement and processing, reduces personal interactions. This is problematic as personal interaction is an important element in personal relationship-building, which itself is a necessity for the development of trust between customers and SPCE dealers, which was identified as the most impactful future customer value source (4.4.4). This means that if digitalisation is pushed forward by KB, it must be ensured that personal

relationships do not suffer from that. Measures need to be taken to foster personal interaction. While digitalised processes will supposedly reduce the need for such interaction in daily business, like order processing, other occasions need to be created that bring people together, such as joint business trips, business events or other kinds of social gathering.

6.2.3 Summary on Product Concepts as Answers to Future Trends in the SPCE Sector

One element of customer value anticipation is the examination of industry trends in the SPCE industry that could offer new opportunities of customer value delivery for SPCE dealers. The trends that were identified through this study are digitalisation, shortage of labour and environmental sustainability and they seem interdependent (refer to 4.4.6). To give this study high practical relevance, concrete products concept ideas were developed. These concepts are approaches to answer customer needs arising from these trends. As such, they represent new arenas for future customer value delivery. The product concept ideas are summarised in Table 21 structured by the trends they correspond to.

Products Concept Idea	Satisfies Needs Arising from the Trend of...		
	Digitalisation	Shortage of Skilled Labour	Environmental Sustainability
Procurement of the rare resource of machine operators to SPCE customers complementary with SPCE		SPCE operators provided by the SPCE dealer could provide customers with the rare resource of SPCE operators.	
Machine Standardisation		Machine standardisation > less time investments in operator training and machine maintenance > more productive time for SPCE operators on their machines.	Standardised machines > reduced replacement parts stock > less consumption of resources. Standardised machine > Less service complexity > reduction of travel for service works > less emissions
Replacing Human Labour by Automation	Automation is often achieved through new digital tools and processes. This pushes the digitalisation of construction companies.	Raising efficiency on construction sites so that less workers are needed.	
Extension of Service offers of SPCE Dealers	New, digital service offers > supporting customers' process-digitalisation	New service offers > new outsourcing opportunities for construction companies > reduction of skilled labour needs	
Products Supporting SPCE Customers in Process Digitalisation	Remotely controlled SPCE > digitalised work processes on construction sites	Remotely controlled SPCE > raised job attractiveness & opens new pools of potential staff	Remotely controlled SPCE > Less operator travel > less emissions

Table 21: Overview of Product Concept Ideas and Related Trends

To grow the practical relevance of this study further, beyond KB, its findings are additionally looked at from the perspective of other entities and groups in the next section. Potential implications are discussed.

6.3 Relevance of Study Results for other Entities and Groups

This study is the first academic analysis in the SPCE sector in Germany on customer value anticipation. Given the applied research design as single case study, its findings and implications cannot simply be generalised to other settings. Nevertheless, the insight gained is unique, novel and based on a robust, conceptually well-founded research framework. Therefore, it can inform the discussion at other entities and groups that are either connected to the SPCE industry or share critical characteristics like the importance of the aftersales performance to customer satisfaction.

These groups and the relevance that the findings of the study could mean to them are described in the next sections.

6.3.1 Relevance for Other Industries

The analysis has shown that trust is a key element to develop long-lasting and collaborative customer relationships that are the foundation for future competitiveness (refer to 4.3.1 b). This insight can inform the discussion on future competitiveness in other investment goods industries, that share relevant characteristics with the SPCE industry. These characteristics are long-lasting post-sales interactions, aftersales importance and dependability, and high product relevance for customer value-chain continuation.

In industries that share these characteristics, the sales act establishes a long service history which can only succeed, if dealers maintain their trustworthiness by keeping customers satisfied and maintaining a continuous service-oriented dialogue. Examples of such industries are:

- Agricultural machinery
- Forestry equipment
- Road building/paving equipment
- Cranes (tower and mobile)
- Lorry and bus
- Machine tools
- Aerial access equipment
- Material handling and logistics equipment

These industries are related to the SPCE industry, as they share the distribution and business model of indirect sales through dealer-channels. But there are also many other capital goods industries, that are less comparable to the distribution and business model of the SPCE industry, but still share the relevant characteristics, that make customer trust impactful. Generally, any supplier of complex technical products that are key for value generation at the customer level, can benefit from the insight on the relevance of trust that was gained through this study. Examples are machines for industrial production like robots, packaging machines, painting plants, or IT hardware like servers. Even businesses selling intangible investment goods like enterprise resource planning software or security software can benefit from the study results, because these products are complex, need continuous maintenance and are crucial for businesses' value creation chains.

6.3.2 Relevance for Training Providers

Next to the relevance that the study results on the future importance of trust (refer to 4.3.1) and digitalisation (refer to 4.4.2) can have within the SPCE industry, other areas could benefit from it as well. Training providers like trade associations of relevant sectors (e.g., the German Association of Construction and Industrial Machinery Dealers) or independent coaches and consulting companies could mediate this insight in specific customer trust generation and digitalisation-focussed training programs.

The programs could specifically address members of different corporate departments like sales and aftersales staff (refer to 4.2.1 a) but equally managers. Concerning trust, participants could be informed on the difficulty of keeping customers satisfied and engaged and be encouraged and trained to practice customer orientation and trust generation across all corporate levels (refer to 4.2.4). Regarding digitalisation, they could target the digitalisation needs of their customers (refer to 4.4.2) and map ways how to answer them. The digitalisation rush of many midsize companies, caused by the outbreak of the Covid-19 pandemic, has in fact made first training-programs of this kind appear on the market (e.g.: <https://www.bbi-online.org/veranstaltungen/best-practice-digital.html>).

6.3.3 Relevance for SPCE Manufacturers

SPCE is mostly distributed through dealer networks, which consist of independent private businesses and manufacturer owned dealers (refer to 1.1). This means that dealers are the most important, in some cases exclusive, gate for SPCE manufacturers to customers. Consequently, the new insight that trust is the key resource to customer value creation and is expected to become even more important in the future (refer to 4.4.4), is highly relevant for SPCE manufacturers. The fact that especially trust in aftersales capabilities of dealers matters to customers (refer to 4.2.1 b) means that manufacturers should pay particular attention to the aftersales performance of their networks. They should define aftersales standards and activities for dealers and evaluate their networks against these standards. The standards should include requirements to the setup of dealers' aftersales departments like:

- Minimum education levels for service technicians
- Aftermarket customer-relationship management strategy
- Machine down emergency process

Most of the established top-tier manufacturers have such dealer developments programs already in place. However, these programs are not specifically directed and

designed to actively maximise customer trust, but they predominantly ensure that dealers fulfil manufacturers' aftermarket standards. What is needed in light of the study results (refer to 4.2.1 b) is a deeper engagement of manufacturers with their dealers regarding the way that dealers employ aftersales-tools and skills that manufacturers demand, because the preparation of dealers for customer trust generation is just the first step. Without employing the trust relevant skills and tools to the market in a professional manner, they supposedly have no impact on customer trust. This means that manufacturers should not just ensure that their dealer networks are theoretically prepared for trust generation, but better lead their dealers in realising growth in customer trust by applying trust relevant skills to the market. Potential areas to look at are:

- The establishment of dealer-processes for urgent machine-down cases aiming at speed of failure resolution (refer to 4.2.4 b)

- Type and frequency of trust generating aftersales market communication and campaigns, e.g.:
 - Parts availability guarantee
 - Machine uptime guarantee
 - Bridge machine guarantee in machine-down situations

- Improvement of transparency of customer service orders before, during and after the repair, to proactively answer customer questions like:
 - What is the root-cause of the failure?
 - What will be repaired on my machine, and which parts will be replaced?
 - Approximately what will it cost?
 - Is there low-cost alternative to the repair (e.g., using non-genuine parts)
 - Does the repair make sense economically, or should I better buy a new machine?
 - How long will it take to repair my machine?
 - Is the repair covered through manufacturer-warranty or by machine insurance?

- Execution of preventive maintenance campaigns
- Frequency and process of proactive aftersales customers visits and free-of-charge machinery inspection (refer to 4.1.1 c)
- Aftersales-focussed customer satisfaction surveys and derived service improvement plans

When manufacturers ensure preparation and execution of customer trust orientation in dealers' aftersales organisations, growth in customer trust has good chances to be realised. While top-tier manufacturers have at least started to work on developing the requirements for growing customer trust in the aftersales departments of their dealer organisations, the challenge for second- and third-tier suppliers is even higher. These manufacturers that attempt to establish new dealer networks in the local markets, tend to lack customer trust due to missing positive experience of customers and partially due to negative image fuelled by preconceptions e.g., insufficient quality of Chinese-made SPCE. This negative image of lower-tier manufacturers could be partially absorbed by dealers who have a solid reputation in their markets and who are trusted by their customers (refer to 4.1.3 b). But such dealers seem almost unavailable for lower-tier SPCE suppliers because trusted dealers are usually already occupied by top-tier brands. Because of that dilemma, lower-tier suppliers usually have to engage with less-established, low-performing and less-trustworthy dealers. This can have the effect of a self-fulfilling prophecy, confirming customers' negative preconceptions of lower tier suppliers' performance.

This fact leads to two key learnings:

1. The identified relevance of customer trust into dealers' aftersales capabilities can support top-tier SPCE suppliers to manifest their market position, because it marks a resource based competitive advantage, a market entry barrier that is hard to overcome for non-established manufacturers (refer to 4.2.3).

2. Lower-tier suppliers that want to enter the SPCE market should seek to establish trustworthy dealer networks from the beginning of their presence in a market. These might not be available to them. In that case they could think about installing their own, manufacturer-owned networks, that fulfil market performance requirements and most importantly are trustworthy.

Another learning from the study is that SPCE manufacturers' brand image seems to matter less to SPCE customers than the image of the distributing dealers (refer to 4.1.3). This could mean for SPCE manufacturers that budgets spent on manufacturer branding promotion could be invested more impactfully in initiatives promoting a local dealer's brand image, specifically in relation to their aftersales excellence.

6.3.4 Relevance for SPCE Dealer Employees

The staff of SPCE dealers could benefit from the insight that this study generated. The unveiled importance of customer trust (refer to 4.2.4) and digitalisation (refer to 4.4.2) for the future success of SPCE dealers has three major implication for this group:

1. Trustworthy employees that have established relationships with customers based on their trustworthiness, as well as such that are experts in digitalisation, tend to become more important and thereby more valuable for SPCE dealers. This could mean that employees might raise their attractiveness for their employers by developing and applying their customer trust orientation. This could lead to growth in responsibility and compensation.
2. Specifically, SPCE employees in sales departments, that generate a substantial portion of their salary from commissions, can apply and benefit from the new knowledge on the relevance of trust for competitive advantage generation (refer to 4.2.4). By focussing on establishing trustful relationships with their customers, they have the chance to be considered more trustworthy amongst

customers and thereby establish long-lasting customer relationships (refer to 4.2.2 c). Such trust-based relationships could mean a resource based competitive advantage that is hard to imitate. Through this, their sales success could be positively impacted, resulting in higher sales-commissions.

3. Employees seeking secure and long-lasting employment could use the perceived trustworthiness of SPCE dealers in the market as an indicator of their sustainability (refer to 4.3.3). A SPCE dealer with a high trustworthiness level could be considered as extraordinarily competitive. That could be taken as an indicator for a chance of long-term commercial success and stability and consequently for a lower risk of future staff reductions. In times of a shortage of qualified labour, this causality could also be looked at from the employer's angle: A highly trustworthy dealer image could raise the organisation's attractiveness for potential employees.

6.3.5 Relevance for Lenders and Investors

The new knowledge that customer trust plays seems of such importance to the present and future competitiveness and to SPCE dealer success (refer to 4.4.4) could be used by capital-lenders and investors who intent to finance dealers. Customer trust could be employed as a new element in their creditworthiness assessment. The resulting logic could be: A SPCE dealer enjoying a high level of customer trust is in a good position for continuity and future profitability and means a low risk of loan default or unprofitable investment for lenders and investors. For that, a measure would be required that allows to understand the level of trust that customers seem to have in a specific dealer. The trustworthiness construct developed by Mayer et al. (1995) (refer to 4.2.2 c) could be used to measure customer trust through customer-surveys. By measuring the level of the three trustworthiness components ability, integrity and benevolence on a predefined scale, SPCE dealer trustworthiness levels could be assessed. That would allow lenders to refer to the risks of alternative

investments in different SPCE dealers and support investment decision-making for lenders and investors.

6.4 Summary of Relevance of Study Results for other Entities and Groups

The study results indicate that future competitiveness of KB in the German SPCE market might be predominantly determined by the level of customer trust. Trust in the capability of KB's organisations to service and repair SPCE in a way, that machine uptime will meet or exceed customer expectations. This means in turn that the battle for future competitiveness might not mainly be fought on the ground of technological advancement, pricing, or brand image, which seem to be in the focus of most SPCE dealer organisations and manufacturers, today. Consequently, the study results could motivate one to look at their organisation from a different angle: Customer trust maximisation. The strategic consequence of the study findings is that the dealer should align its organisational set-up to maximise customer trust generation. As discussed in section 6.3.1 these findings could also inform other dealers selling capital goods which are strongly linked to customer's value-chain and that require long-term aftersales care, in their search for a future competitive positioning. The trust maximisation idea should drain into every aspect of a dealer's strategic planning process. The examples of implementation given in section 6.2.1 show that customer trust orientation affects many departments. HR, marketing, sales, and most importantly aftersales carry high potential for customer trust generation and should be assessed for ways how to activate them. But dealers could struggle to manage this strategic redirection on their own. Associations, consultancies, and trainers could find a new activity-fields and business-opportunities in supporting dealers of capital goods with this. That implies that they need to gain expertise and experience in the customer trust orientation of dealer organisations upfront. Similar, SPCE manufacturers, the most important partners of SPCE dealers, also should align their organisations accordingly. Product development, procurement, production, marketing, and sales should be directed at maximising customer trust in the field, to enable dealers to maximise competitiveness.

This strategy could function as a strong countermeasure against the market dynamics that increase competition in the SPCE industry in Germany (refer to 1.2). New players, mainly from Asia and players using digitalisation as their main gate to market, might struggle with the development of customer trust. As the study has shown in section 4.2.2 c), it develops from interpersonal to organisational trust. New market entrants who lack an established dealer network consisting of trustworthy people in customer-facing roles, consequently might face difficulties to establish this customer trust enablers. This implies that a customer trust focus might function as a shield for established market players against the new forces. This makes the study results highly interesting for SPCE dealers in German that are in need for ways to face the market dynamics of growing competition. Since it affects not only dealers, but also upstream and downstream industries in the value chain like manufacturers and consultancies, the relevance is even higher.

6.5 Critical Evaluation of Study Methodology and Outcome

The study has made important academic (section 6.1) and practical (section 6.2) contributions. Still, its results have to be reflected on critically. The approach of lead customer analysis and the informational contribution of lead customer interviews to research in the impact of customer value creation on competitive advantage and the recognition of future trends has to be reassessed.

6.5.1 The Representativeness of the Sample of Interviewed Lead Customers for the German SPCE Sector

The study has chosen a set of lead customers of KB thoroughly, in a balanced selection process. Still the representativeness of the study for the German SPCE industry as a whole has to be questioned. KB is a medium-sized company with a limited reach and local orientation. KB distributes a limited range of construction machinery which does not necessarily correspond to other dealers in the German market. The choice of a

single company for a case study for practical reasons (refer to 3.3.1) is always exposed to selection bias.

The lead customers of KB are all located in a limited geographical area (refer to Figure 24) and thus dispose of a set of homogenous co-determinants e.g., their dependency on KB as a sole distributor of some major brands in the area, the dependency on local demand in the construction industry and the dependency on the local work market. These boundary conditions are not automatically representative for SPCE customers across Germany and the insights gained from the interviews are possibly biased and limited due to these regional restrictions.

Although the choice of KB as case organisation and the selection of some of its clients as lead customers is not representative, the information gained is of exploratory nature and therefore of broader academic and practical interest. Thus, further research that bases on the insights gained from this study, but applies them to other SPCE dealer cases in Germany is required.

6.5.2 The Competency of Lead Customers to Assess Present and Future Value Creation in the SPCE Sector

The competency of the lead customers to analyse the customer value creation chain in the SPCE sector and future potentials of value generation competently has to be questioned.

The interviewed lead customers of KB have shown to some extent the ability to anticipate potential changes of customer value in the SPCE segment. This concerns the customer value categories of cost/sacrifice and experiential customer value. While they see the relevance of the cost/sacrifice value shrinking, experiential value is assumed to grow. Fewer lead customers provided information on symbolic value.

By ranking lead customer statements on the relevance of present and future value aspects, some standardisation has been brought to the answers, however this standardisation must not be mistaken for a validated survey scale. The results of semi-structured interviews are always subjective, given that the statements are made by individual persons, who are usually biased. These statements are taken without discourse and are not questioned in a debate.

Still, the insights gained by lead customer analysis are meaningful for practice, as they originate from practitioners who share the daily problems relevant in the SPCE business. The future value potentials in the SPCE sector have additionally been triangulated referring to secondary analyses of industry trends in the construction industry. Correspondence of these sources with lead customer statements confirms that the practitioner perspective is representative and appears directionally realistic.

The analysis of the interviews has further shown that the interviewed lead customers have very homogenous ideas about the trends that are thought to impact the construction industry the strongest in the future. These trends are shortage of skilled labour, digitalisation, and environmental sustainability. The fact that the trends anticipated by the lead customers match is another indication of the prognostic reliability of the interviews.

6.5.3 The Reliability of Lead Customers as a Source of Information in Business

Practice

In the face of limited lead customer foresight, KB must question the new strategy of cooperating with lead customers for market research.

Although the participating lead customers were selected due to their typically progressive and fast-moving requirements as compared to other players in their industry, hardly any of the interviewees had a clear strategic development plan in place. Only a few lead customers were able to describe goals that they might target in

the future, while insight into customers' future goals was identified an important aspect of customer value anticipation. Mentioned goals were rather vague (refer to 4.4.1). Lead customers' limited ability to provide SPCE dealers with concrete information concerning future goals is a fact. But it is also a fact that they gave very valuable input to the other aspects relevant for customer value anticipation. Thus, lead customers still represent the best source available to SPCE dealers for customer value anticipation.

This observation suggests that lead customers may lead by instinct rather than strategy. Progressiveness could be in their Deoxyribonucleic acid (DNA) and automatically drive their forward-thinking and behaviour but may not necessarily grow out of their strategic planning capabilities or organisational set-up. Referring to lead customers for customer value anticipation thus looks problematic at first sight. Developing future customer value propositions that support customers in achieving future goals is hardly possible when these future goals are not defined or unclear. Nonetheless, at a second glance, there is significant value for KB in the methodology of lead customer analysis, even though or specifically because there is a lack of clarity amongst lead customers on their organisations' future goals. Knowing about the importance of strategic planning for the competitiveness of businesses, KB could leverage in strategic planning. KB could offer services that support strategic planning among their customers e.g., strategic planning workshops, at which KB consults customers in developing their future business strategy. Through such diversification, KB could offer customers meaningful service and development impetus and at the same time gather information on their customers' future goals.

Since strategic planning includes a plan on resource requirements, KB would understand the future resource requirements of customers earlier than any competitor. Leveraging this knowledge, KB could adjust its product portfolio to customers' needs, which would give KB a timing advantage in their market.

Collaborating with customers at the management level could furthermore enhance the relationship quality and trust between KB and its customers. Knowing about the high

value of customer trust, personal relationships are a promising source for the generation of superior customer value and could lead to superior competitive advantage positions (refer to 4.3.1). This competitive advantage would be based on KB's capability to advise their customers strategically. Such competency would be very rare amongst competitors in the SPCE segment and hence would be a sustainable and hard to imitate resource.

6.6 Study Limitations and Further Research Suggestions

Although the insights of this study are new at the methodology and content level, several limitations remain, which invite further academic research.

This study has aimed at enhancing the future competitiveness of SPCE dealers by anticipating sources of future competitive advantage in the SPCE industry in Germany (refer to 1.4). Since competitive advantage originates from customer value, anticipating sources for competitive advantage requires the anticipation of customer value. The literature review has shown that proven techniques for customer value anticipation are almost non-existent (refer to 2.5.2). The study has explored the aptitude of lead customer analysis for customer value anticipation (refer to 3.2.2). Although the practicability of the approach for customer value anticipation was proven for the case of KB, the applicability in a wider context has remained tentative due to a limited available customer base and low methodological experience. Further lead customer-based studies founding the application of lead customer research academically would be desirable to advance methodological conciseness.

The study has examined sources of competitive advantage referring to a single company in the German SPCE sector only, since for competitive reasons further companies have not been accessible. Moreover, similar studies – applied to other SPCE dealer cases – would allow comparative evaluations and an assessment of the potential generalisability of the findings of the KB case. Cross-case analysis would also

foster understanding about the conditions under which customer value anticipation referring to lead customers works best.

An analysis of the data from different lead customer segments – e.g, demolition or landscaping companies – could allow researchers to generate a more granular understanding of the main future customer value aspects by customer segment and enable the development of segmented, tailor-made insights in customer value preferences and derived customer value delivery strategies. Furthermore, segment analyses could differentiate by lead customer size, interviewee seniority and/or professional background and lead to a more differentiated view on preferences by segment.

This research project represents a first step towards a deeper understanding of the practical application of customer value anticipation in the SPCE industry in Germany. Lead customer analysis and research methods should be developed further and tested more intensively to gain insight into emerging development trends and to enable practitioners to better anticipate customer value and improve the processes of developing this organisational capability (Ho et al., 2014).

Greater attention for future customer value in research and business practice is desirable to advance technological and organisational innovations in the German SPCE and other practice sectors. More comprehensive research in this field is a challenge for the future cooperation of universities and businesses.

Finally, the anticipation of the future value preferences of customers of SPCE dealers has proven to be a valuable competitive advantage generation strategy. A consequent next step that could lead to even more powerful competitive advantages for SPCE dealers could be the anticipation of customer value of SPCE customers' customers. Understanding what the customers of its customer might value in future could put SPCE dealers in an absolute unique position towards their SPCE customers and add significant value to them. This direction represents the next level in customer value anticipation research and thus offers opportunities for exciting, future studies.

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Appendix I: Interview Guide (English translation)

Header Data					
Company, Interviewee, Position					
Place, Date, Time, Location					
Introduction					
Information on study		Background of the researcher	Present study and list purpose	Why selected as a sample	Consent Form
Ethics		Questions about the process?	What happens with the data?	Do you request confidentiality?	Get agreement to continue
Value Aspects					
Questions					
Future Trends					
General Futue Trends	Question	Looking ahead, what trends do you think will impact your business the most?			
	Notes				
Functional/Instrumental Value					
Correct/accurate attributes	Question	How do you expect these trends to influence your future strategic direction and business goals?	In how far do you think your SPCE dealer could help you in tackling the future challenges?	Which concrete desired attributes of novel SPCE related products/service can you imagine that could help you in facing the challenges?	What should such product/service do for you?
Appropriate performance (consequences of use)					
Appropriate outcomes (goal-impact)					
	Notes				
Experiential/Hedonic/Social-Relational Value					
Network-relationships	Question	Describe the relevance of the relationship-quality with your SPCE dealer for buying decision-making.		What role will the relationship with your dealer play in future buying decisions? Will it change versus today?	
Connectedness					
Personal relationships					
Trust					
	Notes				
Cost/Sacrifice					
Economic (price)	Question	Describe the role the initial purchase price plays in your SPCE buying decision-making?	Besides initial purchase price, do you consider other cost/sacrifice aspects in your SPCE buying decision-making?	How will the role of price develop looking forward?	
Psychological					
Personal investment					
Risk					
	Notes				
Symbolic/Expressive Value					
Self-identity/worth	Question	Can you elaborate on the relevance of SPCE brand image for you and a potential influence it has on your SPCE purchase decision-making?	How do you foresee the influence of brand-image on your purchase decision-making to change in the future?		
Personal meaning					
Self-expression					
Social meaning					
Conditional meaning					
	Notes				

Appendix II: Participant Consent Form (English translation)

PARTICIPANT CONSENT FORM		
Study Title: Future Sources of Competitive Advantage in the German Self-Propelled Construction Equipment Industry		
(Please tick the appropriate boxes)	Yes	No
Participation		
I understand that this study is undertaken under the credo that the interest of a study must never be put above the interest of anyone involved or affected by it.		
I understand that this study is conducted in the frame of a doctoral program of the University of Gloucestershire (UK).		
I have had the purpose and nature of the study explained to me and I have had the opportunity to ask questions about the study.		
I understand that taking part is voluntary; I can withdraw from the study at any time without giving a reason for my withdrawal.		
I understand that I will not benefit directly from participating in this research.		
My employer has approved my participation in this study.		
Use of Information		
I understand that the information I share will be used exclusively for this study.		
I understand that my words may be anonymously quoted in publications, reports, web pages, and other research outputs.		
I understand and agree that personal data like age or education will be collected and used for analysis purpose.		
Anonymity & Confidentiality		
I understand that in any report on the results of this research my identity and the identity of my company will remain anonymous.		
I understand that all information I provide for this study will be treated confidentially.		
Recording & Data Storage		
I understand that taking part in the study will include being interviewed and audio recorded.		
I understand that signed consent forms and original audio recordings will be retained on an offline, password restricted hard-disc drive at the researcher's private premises. The hard-disc drive is accessible for the researcher only. Data will be stored until the University of Gloucestershire's exam board confirms the results of the dissertation.		
Name of Participant: Signature: Date:		
Researcher: Signature: Date:		

Appendix III: Lead Customer/Interviewee Profiles

LC "A"	
Company Profile	
Focus construction sector	Heavy & road construction
# of employees	40–50
# of CE machines in fleet	20–30
Geographical scope	Local (50 km action radius)
Interviewee Profile	
Age	40–50
Professional background	Construction apprenticeship
Position	General Manager & Owner
Seniority	20–30

LC "A" is a medium-sized company that is focussed on heavy and on-road construction. It was founded from two partners who run the company as general managers. They developed their business from a small, two-man company into a well-established player in their local market, which they serve within a radius of 50 km. The business is managed with a hands-on mentality and is only loosely structured. The business operates 20–30 SPCE units. The company is well known for pushing their suppliers for innovations and for its speed of technical innovation-adaption. One example is the development of hybrid-powered excavators of their machinery supplier. LC A was amongst the customers that initiated its development and even contributed to it as a member part of the supplier's product development project. After product launch, LC A was amongst the first customers to buy this new technology.

The interviewee was one of the partners and general managers. He is between 40–50 years old and active in the construction industry for 20–30 years. He has an apprenticeship education in civil engineering.

LC "B"	
Company Profile	
Focus activities	Special heavy construction
# of employees	100–110
# of CE machines in fleet	50–60
Geographical scope	Nationwide
Interviewee Profile	
Age	40–50
Professional background	Civil engineering diploma
Position	General Manager
Seniority	10–20

LC "B" is focussed on special heavy construction applications like drilling or renaturation. With around 100 employees and 50–60 SPCE units in its fleet, it is of medium-size. Due to its focus on special applications, its activity radius is nationwide. The company is managed in a structured way, with precise cost centre calculations and well-defined objectives and parameters for each construction project. This structure is driven by their mentality to constantly look for ways to innovatively reengineer key business processes, to boost efficiency and profitability.

The interviewee was the general manager, who is in his forties and has 10–20 years of experience in the constructions sector. He holds a civil engineering diploma.

LC "C"	
Company Profile	
Focus activities	Demolition, heavy construction, rental
# of employees	70–80
# of CE machines in fleet	180–190
Geographical scope	Regional (150 km action radius)
Interviewee Profile	
Age	30–40
Professional background	Civil engineering diploma, business administration diploma
Position	General Manager & Owner
Seniority	10–20

LC “C” has a relatively large activity portfolio. The company offers demolition, heavy construction as well as SPCE rental services. It is of medium-size with some 70 employees, but runs a large fleet of around 190 SPCE units because of its rental activities. Its activity radius is regional and spans about 150 km.

The interviewee was the owner and general manager, who is 30–40 years old and holds diplomas in civil engineering and business administration. He manages the company in a progressive way. He constantly adds innovative, customer value orientated services to its portfolio to extend the service for customers and to differentiate from competition. He is in the construction sector for 10–20 years.

LC “D”	
Company Profile	
Focus activities	Logistics, rental, repair services
# of employees	110–120
# of CE machines in fleet	250–260
Geographical scope	Regional (150 km action radius)
Interviewee Profile	
Age	40–50
Professional background	Business administration diploma
Position	General Manager & Owner
Seniority	20–30

LC “D” is offering logistics, rental and repair services to its customers. It is a medium-size company with some 120 employees but a relatively large SPCE fleet of 250–260 machines, because of the rental activities. With its three branches it serves a region of approximately 150 km radius. The style of the company is very mature.

The 40–50 years old interviewee partner from LC “D” was the owner and general manager. He holds a diploma in business administration and has been in the construction industry for 20–30 years. He is deeply engaged in a machinery association that fosters process and innovation in the construction industry. He also frequently visits innovation congresses and uses SPCE innovation-relevant information sources.

LC "E"	
Company Profile	
Focus activities	Building and road construction
# of employees	260–270
# of CE machines in fleet	100–110
Geographical scope	Regional (150 km action radius)
Interviewee Profile	
Age	60–70
Professional background	Civil engineering diploma
Position	General Manager & Owner
Seniority	40–50

LC "E" is a large building and road construction company. It employs 260–270 people and operates more than 100 pieces of SPCE units. It acts in a regional market of approximately 150 km in radius. It has a strong focus on the wellbeing and appreciation of its staff. As one aspect of this, it fosters an environment of staff engagement and participation. It motivates its employees to analyse product- and process weaknesses and to develop and articulate their ideas how to innovatively improve. Once approved, the innovators get the chance to apply and test their ideas in reality.

This innovative culture is driven by the owner and general manager who built the company up and who strongly believes that his people and their capability to innovate are the business's core advantage. He is about 70 years old and has more than 40 years of experience in the construction sector. He holds a civil engineering diploma.

LC "F"	
Company Profile	
Focus activities	Heavy construction, demolition
# of employees	150–160
# of CE machines in fleet	70
Geographical scope	Regional (150 km radius)
Interviewee Profile	
Age	40–50
Professional background	Business administration diploma
Position	General Manager & Owner
Seniority	20–30

LC "F" is a regional heavy construction and demolition provider of medium-size, employing 150–160 people and operating 70 SPCE machines, mainly heavy demolition equipment. The business is structured and managed following modern management practices.

The company is managed by its 40 to 50-year-old owner who holds a business administration degree and has 20–30 years of experience in the constructions sector. He has high expectation on his equipment and his suppliers and is generally known for being very demanding. He shows the tendency of continuous dissatisfaction with existing products and solutions, what pushes his suppliers to a high need for progress and innovation.

LC "G"	
Company Profile	
Focus activities	Heavy & road construction
# of employees	60–70
# of CE machines in fleet	30–40
Geographical scope	Local (50 km action radius)
Interviewee Profile	
Age	30–40
Professional background	Civil engineering diploma
Position	General Manager & Owner
Seniority	10–20

LC “G” is a small heavy & road construction company, acting within a local market of some 50 km in radius. It employs 60–70 people and operates a fleet of 30–40 small to medium-size SPCE machines.

The interviewee partner was the owner and managing director. He is between 30 and 40 years old a diploma in civil engineering. He has 10 to 20 years’ experience in the construction sector. He manages his company in a hands-on way. He is close to his workers during the daily business and has a high frequency and long period of product use himself. This gives him a constant view of product weaknesses, resulting in a good anticipation of upcoming needs in the construction sector.

LC “H”	
Company Profile	
Focus activities	Heavy & road construction
# of employees	330–340
# of CE machines in fleet	200–210
Geographical scope	Regional (150 km action radius)
Interviewee Profile	
Age	40–50
Professional background	Civil engineering diploma
Position	General Manager & Owner
Seniority	20–30

LC “H” is amongst the larger companies in the industry, employing more than 330 people and operating 200–210 SPCE machines. It operates mainly within a regional market of 150 km in radius.

The interview partner was the owner and general manager who is 40–50 years old. He is in the construction industry for 20–30 years and holds a civil engineering diploma. He manages his business in a progressive and modern way, implementing new technologies and methods early and constantly monitoring the market for upcoming trends and needs to ensure early adoption through his company.

LC "I"	
Company Profile	
Focus activities	Heavy, building & road construction
# of employees	72,000
# of CE machines in fleet	8,000
Geographical scope	Europe
Interviewee Profile	
Age	60–70
Professional background	Civil engineering diploma
Position	Department head SPCE fleet management
Seniority	30–40

LC "I" is the SPCE fleet providing division of a very large construction heavy, building & road construction corporation that employs more than 72,000 people and operates throughout Europe.

The SPCE division itself has some 1,000 employees and manages more than 8,000 SPCE units of all sizes. The interviewee partner was the fleet management department head, who is above 60 years old and more than 30 years in the construction industry. He holds a civil engineering diploma. The company has processes in place to ensure it stays at the forefront of new industry developments. It continuously makes investments to develop own solutions, as the result of their unhappiness with existing products. One example is a data interface that they developed in cooperation with a university, which allows them to process and display cross-brand live machinery operational data, like fuels consumption, in one single online portal. Usually each machine brands has its own reporting portal, with individual design, functionality and logic, making it difficult for managers of large, multi-brand machine fleets to efficiently use the provided information.

The number and variety of different construction activities of this company led to the installation of a monitoring and reporting process for new needs and developments that employees can use to initiate change in the company. Overall, the way the company deals with anticipation of future needs is professional.

Appendix IV: Lead Customer/Interviewee Clusters

Cluster by LC Company Size (by no. of employees)		
Medium LC < 200 employees	Large LC 200–1,000 employees	Very Large LC > 1,000 employees
A	E	I
B	H	
C		
D		
F		
G		

Cluster by Interviewee Education (by no. of employees)		
Construction Apprenticeship	Diploma in Business Administration	Diploma in Civil Engineering
A	C	B
	D	C
	F	E
		G
		H
		I

Cluster by Interviewee Seniority (in years of experience in the construction sector)			
10–20	20–30	30–40	40–50
B	A	D	E
C	F		I
G	H		

Cluster by Interviewee Age (in years)		
30–40	40–50	60–70
C	A	E
G	B	I
	D	
	F	
	H	