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The Impact of Relationship Quality on Adoption Barrier Evaluation

An Explorative Study on B2B Networks for Commercialization

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Abstract

Purpose – By analyzing how nuances of relationship quality influence the barriers of radical innovation adoption, this study contributes through the provision of a condensed and more focused approach to the fragmented and underresearched topic of B2B adoption barriers.

Design/methodology/approach – The paper presents an explorative research approach with data gathered from multiple case studies, including published and unpublished articles, personal interviews and internet sources.

Findings – An influence of relationship quality on adoption barrier evaluation has been confirmed. Further, details on how each barrier is influenced by relationship quality have emerged in the form of five proposals and have been further validated based on evidence from primary and secondary sources.

Research limitations/implications – There are limitations in the sampling and data analysis approach, however, this study provides a first step towards a more inclusive empirical research agenda in the future.

Practical implications – In order to enable an effective and efficient adoption of radical innovations in networks, science-based organizations should be aware of the challenges and resistance they may face within their network relationships, resulting from the interconnected structure of high-tech networks as well as the uncertain nature of their radical innovations.

Originality/value – This paper hopes to stimulate managerial interest in the development and maintenance of commercialization networks and encourages managers to think beyond the creation of economic value to achieve sustainable growth based on building complementary networks of stakeholders and resources integrated into the value chain. It provides insights into the relevance of certain adoption barriers for different nuances of relationship quality that facilitate or impede the diffusion of innovation in networks.

Keywords Relationship Marketing, Relationship Quality, Radical Innovation, Adoption Barrier Evaluation, Surrogate Buyer

Paper type Research paper - Master Thesis

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Senah Abou-Taha & Kerstin Nagl

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List of Abbreviations

B2B	Business-to-business
CC	Case Company
NIH	Not-invented-here
NSH	Not-shared here
NPD	New Product Development
R&D	Research & Development

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1. Introduction

1.1 Background

Defined as the value stemming from novel ideas (Tidd & Bessant, 2014), innovations entail the successful exploitation of new opportunities by businesses and are deemed a crucial effort in improving its processes, products and service deliverables to market. Simultaneously, they also allow the improvement of a firm's efficiency and its yields. As for the innovation of products, they do not solely comprise the creation of New Product Developments (NPD), but also their successful introduction to the market (Sorli & Stokic, 2009). Consequently, an idea only becomes an innovation once it has been accepted by single actors and commences to spread throughout markets - a process known as innovation adoption (Laukkanen, Sinkkonen & Laukkanen, 2008; Rogers, 1995).

In academia, the most wide-spread categorization of innovation types is based on the innovation's characteristics and level of novelty - incremental and radical innovation (Domínguez Escrig et al., 2019). In case of the former, only continuous refinements or improvements have been added to the product. Radical innovations, on the other hand, imply substantial changes to existing products (Dillner & Kaufmann, n.d.; Lizarelli, de Toledo & Alliprandini, 2019; Sorli & Stokic, 2009). Distinctly, radical innovations are of interest for the long-term success of organizations, while at the same time implying momentous challenges (Schuhmacher, Kuester & Hultink, 2018). As radical innovations are completely new to the firm and its markets they are associated with a high degree of uncertainty (Colombo et al., 2017; Schuhmacher, Kuester & Hultink, 2018). Uncertainty is caused by the changes imposed on individuals or social systems through the occurrence of the innovation, which challenges the market actors to either accept or reject it. It represents a substantial obstacle in innovation adoption. (Sahin, 2006). However, especially radical innovation endeavors remain a primal activity required for any firm, as those who do not innovate are condemned to fail and disappear from markets in the long term, seeing as it becomes increasingly more difficult to close the gap to competition (Domínguez Escrig et al., 2019; Fisher, 2008).

As for the origin of radical innovations, they often stem from science-based companies (Fleming & Sorenson, 2004). Science-based firms possess the inherent capability of capturing scientific knowledge to realize its industrial potential and ultimately reap the returns of investments (Rickne, 2006), translating it into complex radical innovations (Fleming & Sorenson, 2004). Close collaborations with other actors and their associated resources are vital for performing their business operations in such environments (Rickne, 2006). These tight-knit collaborations have been coined as different types of networks (Bagheri, Kusters & Trienekens, 2017; Chakravorti, 2004; Sasson, 2009; Spruytte et al., 2017) and entail the exchange of information and knowledge about science, technology,

markets, management and institutions as well as physical resources or intellectual property as example (Rickne, 2006). Within these contemporary markets, innovation will increasingly require close co-operations in networks, as "many technological innovations tend to require multi-sectoral collaboration" (Aarikka-Stenroos et al., 2017, p.88). Hence, the creation and establishment of networks can be expected to thrive and gain importance in the forthcoming future (Kuada, 2016; Parikh, 2001).

As there are various potential purposes for the creation of networks e.g. for the joint development of a new product, various constellations of different network actors exist (Aarikka-Stenroos & Sandberg, 2012; Aarikka-Stenroos, Sandberg & Lehtimäki, 2014). As the least well-managed and costliest process within NPD is represented by the phase of commercialization (Aarikka-Stenroos & Lehtimäki, 2014; Chiesa & Frattini, 2011; Di Benedetto, 1999), an interest in investigating networks with this particular purpose arose. Henceforth, commercialization will be defined as the first point of value creation, being measured through the first sales of the NPD (Nerkar & Shane, 2007). Accordingly, networks for commercialization enable the collaboration of different actors for the purpose of introducing a new product to the market, e.g. through the provision of access to resources needed for the distribution of goods (Aarikka-Stenroos & Sandberg, 2012; Aarikka-Stenroos, Sandberg & Lehtimäki, 2014; Abdul Hamid & Abd. Rahman, 2014).

Anderson, Hakansson & Johanson, (1994) explain that within such networks, multiple dyadic relationships, implying two parties collaborating to reach synergistic objectives, exist. With the prevalence of networks occurring in the past decades, research has been increasingly directed towards the management and marketing of relationships, summing up to research streams of relationship management and marketing. These streams of business research describe activities dedicated to developing and maintaining successful relationships between businesses in order to achieve higher levels of customer loyalty and hence, increase sales and firm performance (Beck, Chapman & Palmatier, 2015; Palmatier et al., 2006).

As a probable member of such relationships within commercialization networks, Aggarwal (1997) introduces the concept of surrogate buyers (see figure 1). Accordingly, the commercialization network is being established between the supplier of the product or service and the surrogate buyers, hereinafter referred to as partners. Acting as an intermediary, the end-customer trusts and willingly delegates the authority to evaluate, adopt or reject (radical) innovations to the surrogate buyers.
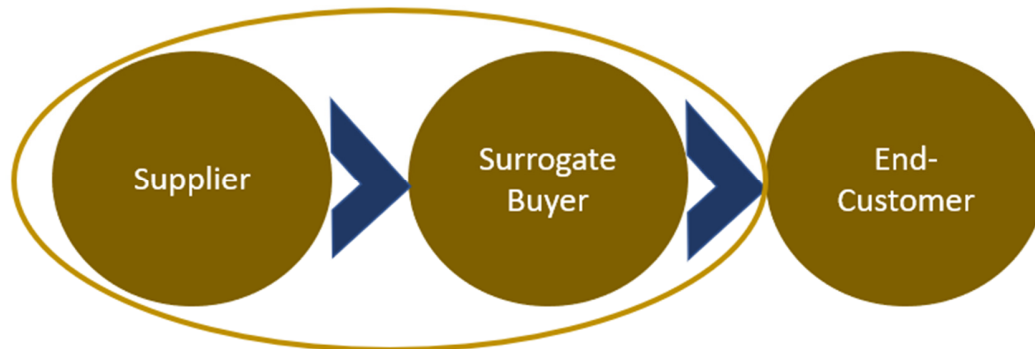
Figure 1: Intermediaries as surrogate buyers, as introduced by Aggarwal (1997) (own depiction)

Hence, surrogate buyers inhibit repetitive evaluations to adopt or reject an innovation, continuously being exposed to innovation adoption barriers.

Adoption barriers stem from the diffusion and adoption theory by Rogers (1995), developed as a means to comprehend and serve as an explanation as to how individuals and organizations can react upon the introduction of radical innovations into their environment. Prior to purchase, evaluations are made in alignment with these adoption barriers that, according to Rogers (1995), lead to a decision-making which either leads to the acceptance or towards a resistance of innovations.

1.2 Problem Discussion

Palmatier et al. (2006) suggest that upholding relationships in a B2B-environment can, among other reasons, enhance the commercial success of a firm, including the growth of sales, share and profits through collaboration. Academia further recognizes the fact that relationships can be established, maintained and enhanced with customers or other partners "at a profit so that the objectives of the parties involved are met" (Barac et al., 2017, p.1204). Barac et al. (2017) confirm that relationship management is recognized as a critical task and a firm's network is considered to be among the most valuable resources a company can develop. Different mechanisms and strategies to cultivate and interact with different partners within a network are typically being utilized, falling under the category of relationship management (Palmatier et al., 2006; Palmatier, Gopalakrishna & Houston, 2006). These have an impact on the relationship quality between trading partners, meaning the levels of trust, commitment and satisfaction that a buyer perceives through the interaction (Palmatier et al., 2006). Due to these different mechanisms and strategies impacting trading partners within a network on various scales, nuances in their perceived relationship quality can be expected to emerge.

It is questionable which effect these different nuances of relationship quality within a network may have. In a previously conducted study by Yee-Loong Chong et al. (2009), interorganizational relationships have been found to be significantly affecting small-to-medium sized enterprises in their decision-making to accept or resist e-business technology in their supply chain. This study questions whether the same effect can be applicable to adoption barriers for product innovations in science-based industries.

In the past, academia has been mostly dedicated to identifying individual's characteristics and how they influence or hinder the adoption of innovation. Fewer research has investigated adoption patterns of organizations, despite their contrasting motives in purchasing certain products compared to end users, caused by differences in individual and organizational needs (Mohamed Samir Hussein & Mourad, 2014). The activities and resources of each actor in a network differ not only themselves but also in how they depend on activities of actors they interact with, emphasizing the importance of investigating the interaction or relationship between network actors (Schneider & Sachs, 2017; Story, O'Malley & Hart, 2011). This is supported by Schneider & Sachs (2017), Halinen et al. (1999) and (Rogers, 1995), who argue that the behavior of organizations and their influence on networks can be better understood when looking into the dyadic relationships they are part of. Such relationships involve no more than two parties (Halinen, Salmi & Havila, 1999).

However, Aggarwal, Cha & Wilemon (1998) suggests analyzing single cases and their behavior towards radical innovation separately within a network to make generalizations for the entire network. "Although the role of external influences, such as that of opinion leaders, can be accommodated [...], the final adoption decision is still assumed to be made by the [surrogate] buyer" (Aggarwal, 1997, p.391). Hence, the relationship as perceived by surrogate buyers moves to the fore and becomes the focal point of this study to examine their adoption barrier evaluation.

Adoption barriers can be categorized in innovation specific and organizational specific factors (see chapter 2.2.3) that influence the decision process of whether an innovation is accepted or not (Joachim, Spieth & Heidenreich, 2018; Talke & Heidenreich, 2014). While previous studies have assessed that both functional and psychological barriers in innovation adoption can arise (Cornescu & Adam, 2013; Joachim, Spieth & Heidenreich, 2018; Laukkanen, Sinkkonen & Laukkanen, 2008; Rogers, 1995; Talke & Heidenreich, 2014), current literature (Joachim, Spieth & Heidenreich, 2018; Rogers, 1995; Talke & Heidenreich, 2014) deem adoption barriers to be uniform addressable to any individual or organization and thus to any relationship within a network. This research questions whether nuances in the quality of each relationship might have an influence on the behavior in how adoption barriers are being perceived and if so, how these nuances influence the evaluation of these barriers.

As network partners represent the link to the end-customer, they inherently have the capability to facilitate or impede innovation diffusion. According to Aarikka-Stenroos and Lehtimäki (2014), negative evaluations formed through adoption barriers towards innovations by network partners impede with the commercial success. With new product failures endangering a firm's overall competitiveness, the need to comprehend product-driven adoption barriers becomes obvious (Joachim, Spieth & Heidenreich, 2018; Kleijnen, Lee & Wetzels, 2009). Thereafter, it can be suggested that innovation specific barriers are initially of higher importance in comparison to organization specific barriers and will thus be the focus of this study.

In view of aforementioned predominance of radical innovation activities in science-based industries as well as their increasingly network-oriented structures, investigating the impact of adoption barriers within B2B network relationships seems promising (Alvesson, 2004; Fleming & Sorenson, 2004; Kuada, 2016; Parikh, 2001).

1.3 Purpose and Research Question

Since the emergence of adoption theory, academia has placed thorough emphasis on the assessment of innovation diffusion theory (Laukkanen, Sinkkonen & Laukkanen, 2008; Rogers, 1995). Especially motivational factors and characteristics of innovation adopters have been thoroughly analyzed (Laukkanen, Sinkkonen & Laukkanen, 2008). However, extant academic literature entails very few studies analyzing the reasons that delay or inhibit the diffusion of innovation (Laukkanen, Sinkkonen & Laukkanen, 2008) as well as the assessment of innovation barriers and how firm and market characteristics impact these barriers (Sandberg & Aarikka-Stenroos, 2014). Furthermore, the limited, available research about this topic has usually focused only on one or few barriers for closer investigation (Sandberg & Aarikka-Stenroos, 2014).

As resistance towards innovations caused by adoption barriers may result in delayed or prevented innovation adoption, a need to overcome those barriers to enable successful introduction of the NPDs to the market becomes evident (Laukkanen, Sinkkonen & Laukkanen, 2008). Further, adoption barriers are considered twice as powerful in creating resistance towards innovation as adoption-enabling factors for innovations (Joachim, Spieth & Heidenreich, 2018). Further, it addresses the current trends of network-orientation in science-based industries, whereas most radical innovations stem from with the characteristic of high failure rates within markets (Alvesson, 2004; Chiesa & Frattini, 2011; Di Benedetto, 1999). Hence, the assessment of barriers hindering the adoption of innovations are highly recommended to management.

In order to enable an effective and efficient adoption of radical innovations in networks, science-based organizations should be aware of the challenges and resistance they may face within their network relationships, resulting from the interconnected structure of high-tech

networks as well as the uncertain nature of their radical NPD's. By analyzing how nuances of relationship quality influence the barriers of adoption, this study contributes through the provision of a focused approach to the fragmented and underresearched topic of B2B adoption barriers.

Through the acquisition and analysis of this knowledge, contributions to existing research could be provided for a more condensed, comprehensive and nuanced understanding of network relationships and their impact on the adoption barriers of radical innovations through the novel perspective of relationship quality.

Summing up, this study questions whether relational affiliations and the perceived relationship quality has an impact on the diffusion of innovation within a B2B-network, thus combining academic literature of Palmatier (2006) as well as Talke & Heidenreich (2014) and Joachim, Spieth and Heidenreich (2018).

Concurrently, the research question of this study shall be the following:

> *How do varying levels of relationship quality impact the evaluation of adoption barriers through surrogate buyers in networks for commercialization?*

1.4 Case Company

The case company (CC) used within this research paper is one of the world's market leaders in the security industry offering products and solutions. Formerly relying on dynamic capabilities to reconfigure existing assets to generate incremental innovations, its main market of products is slowly reaching the zenith of maturity in most of its operating markets. Thus, the CC's growth strategy is now primarily focused on growing organically through ambidextrous innovation management and product portfolio expansion.

As such, extensive change initiatives have been undertaken to transform the company from a product to a solution-centric company, aiming at a redefinition of the market and to create and lead in new fields through a combination of incremental and radically differing innovations. These initiatives are being supported by a two-digit reinvestment of the yearly turnover each year into R&D to foster the acquisition of cumulative knowledge, gain the ability to process information more effectively (Cohen & Levinthal, 1990) and to support the efforts taken to increase the overall levels of innovation within the corporate boundaries. As a result, the CC was able to launch a vast multitude of innovative products and solutions in their respective markets in 2018, whereas 10-15% of these were radical innovations.

As such, the CC can be deemed a science-based firm, as it heavily relies on scientific knowledge and its ability to translate it into tangible, radical innovations, whereas corporate activities are mainly based on the development and commercialization of its innovations. Other activities within the value chain are outsourced to network partners specialized in their area of responsibilities, meaning either the manufacturing or distribution. Thus, parts

and products change hands constantly from component and contract manufacturers to partners being system integrators and resellers. As for the latter, their responsibility lies ultimately in selling the NPDs to end-customers within this value chain. Hence, end-customers are not directly served by the CC and their inquisitions are being redirected towards partners to successfully enable and instill trust into its network partnerships, as they are fundamental success factor in the commercial success of the CC.
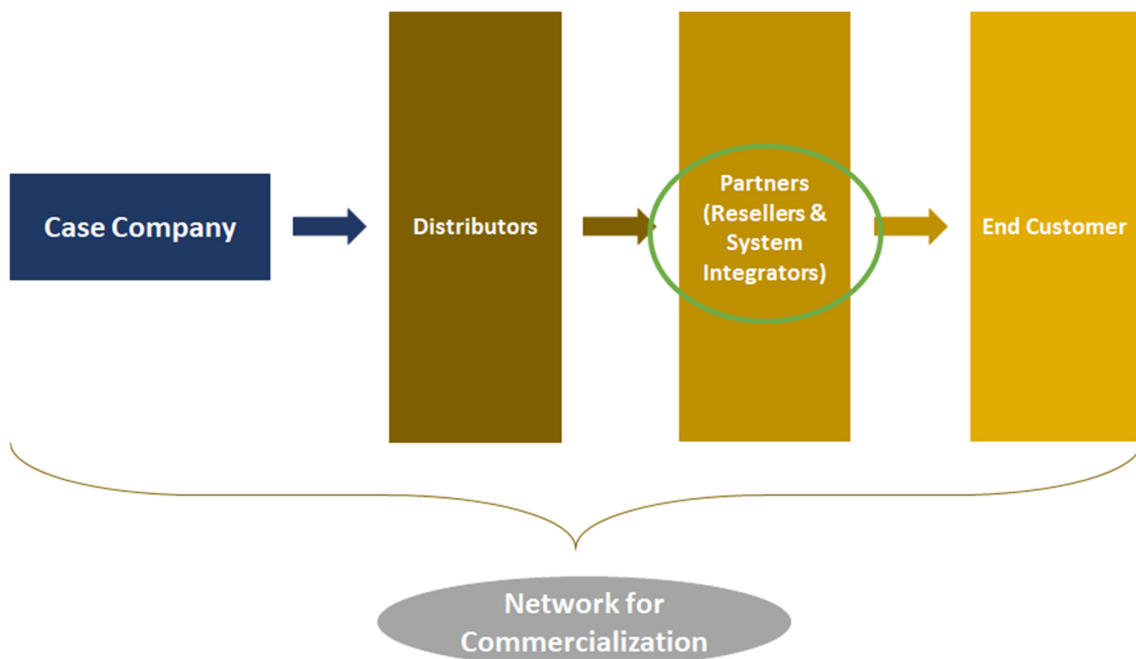
Figure 2: Depiction of CC's sales strategy

Within this network partnership, a loyalty program, a common practice that is implemented with the aim of binding important customers (in this study partners) to an organization and creating a strong, loyalty-based relationship (Beck, Chapman & Palmatier, 2015; Viswanathan, Sese & Krafft, 2017), has been introduced. Loyalty programs usually comprise marketing initiatives such as reward cards and other measures that have a favorable impact on the customer's perception of the brand and organization (Beck, Chapman & Palmatier, 2015). If successful, such measures contribute to achieving higher customer loyalty, and hence, better firm performance by strengthening bonds between network actors (Beck, Chapman & Palmatier, 2015; Palmatier et al., 2006).

In the CC's loyalty program, partners (see figure 2) responsible for the commercialization, can sign up virtually to become an authorized dealer of the CC's products. Based on sales volume and value, partners can ascend and descend between the levels of authorized, silver and gold partnership tiers. As lowest-tier-members, they enjoy very limited privileges. Gold members, on the other hand, enjoy benefits such as granted rebates, discounts or other price

reductions and non-monetary benefits. As differing status memberships within this program are assumed to imply varying levels of relationship quality of the respective intermediary and CC, the CC's loyalty programs represents a suitable framework for the identification of variations in adoption behaviors based on trust, commitment and satisfaction. It is expected that with rising status in the loyalty program, higher degrees of trust, commitment and satisfaction are perceived within the relationship.

Conclusively, the CC is a suitable research object for this thesis, as it meets all predestined requirements of operating within a successfully established network of partners and meets the need of expectant market demands with a high frequency of radical innovations. As such, it builds a great foundation for the discovery of relational effects on the adoption barriers of radical innovations.

1.5 Outline of Thesis

To answer the given research question, the theoretical concepts and frameworks applicable and of relevance to this study have been introduced in chapter 2, together with a synopsis combining the different theoretical concepts.

The following chapter 3 will then describe in detail the chosen research design and provide a transparent description of the analysis conducted. As different nuances of relationship quality shall be compared within this study as foundation for the cross-case comparison of varying adoption barrier evaluation, their assessment will be further described in chapter 3, as well as attached completely to this study's appendix for further reference (Appendix B+C). To ensure the qualitative rigor for this study, as the notion of different nuances of relationship quality builds the basis of this study for continued research, the complete interim analysis will be attached to this study's appendix for further reference.

Within the fourth chapter, the findings obtained throughout the data collection phase will be presented, first offering insights into each case respective findings and thereafter showcasing a quick case comparison.

Based on these findings, an analysis of the datasets shall follow in chapter 5, again commencing with the analysis of in-case data to determine which adoption barriers have been encountered in each case (5.1), before subsequently presenting the cross-case analysis in 5.2. The last sub-chapter 5.3 shall present a summary of the outcomes as well as their visualization in the form of an integrative framework.

Chapter 6 will conclude this study's findings and theoretical as well as managerial implications. Lastly, the study's limitations and opportunities for future research will be showcased.

2. Literature Review

2.1 Innovation

As stated by Sorli and Stokic (2009), innovation describes "the transition from a novel idea to a successful product in the market" (Sorli & Stokic, 2009, p.44). This definition suggests that innovative products need to be introduced to the market successfully in order to be considered innovations - otherwise, innovations will only remain ideas. (Sorli & Stokic, 2009).

A great span of areas that can be innovated exists, varying from production processes to business models (Tidd & Bessant, 2014). According to OECD (2019), the categorization of innovation includes the following: product innovation, process innovation, marketing innovation and organizational innovation. The focus of this research will lie on the innovations of products. They describe "(...) a new or improved good or service that differs significantly from the firm's previous goods or services and that has been introduced on the market." (OECD/Eurostat, 2018, p.34)

Product innovations may be distinguished into two types, both describing separate innovation activities underlying the creation of the new product: on one side, NPD's can be dedicated to the improvement of existing products and thus procure an incremental innovation. On the other hand, a NPD may generate a severely novel product by exploratively engaging in ideation, e.g. through experimentation or prototyping. (Lizarelli, de Toledo & Alliprandini, 2019)

2.1.1 Incremental Product Innovations

Incremental innovations are meant to improve or refine existing products with the aim of providing added value to an existing market (Lizarelli, de Toledo & Alliprandini, 2019; Sorli & Stokic, 2009). They are of exploitative nature, meaning only incremental changes of the organization's current product are capitalized to address existing markets of the firm (Lizarelli, de Toledo & Alliprandini, 2019).

Incremental innovations stem from innovation activities such as the fitting, recombination and reuse of existing knowledge (Schuhmacher, Kuester & Hultink, 2018).

2.1.2 Radical Product Innovations

Radical innovation activities cover a more discontinuous type of change that requires more research and experimentation than incremental innovations (Lizarelli, de Toledo & Alliprandini, 2019). Therefore, they often connote high risks and costs (Schuhmacher, Kuester & Hultink, 2018).

Radical innovations are aimed at generating new products through explorative activities such as prototyping - potentially addressing new customers as well (Lizarelli, de Toledo & Alliprandini, 2019), thus commonly being novel to the firm and its markets (Colombo et al., 2017). Most radical innovations stem from new scientific discoveries or breakthrough insights (Colombo et al., 2017).

Due to their novelty, radical innovations are associated with a higher degree of uncertainty. Hence, potential adopters are more likely to resist the changes imposed by the radical innovation as it implies the adjustment of their current status quo to the new equilibrium, which is perceived as disturbing (Colombo et al., 2017; Hosseini et al., 2016; Schuhmacher, Kuester & Hultink, 2018).

2.2 Innovation Adoption

2.2.1 Definitions

The diffusion of innovation theory aims to explain how, over time, an idea or new product gains momentum, spreads throughout markets and is being adopted through a specific population or social system (Kapoor, Dwivedi & Williams, 2014; Rogers, 1995). The main driver of adoption is that a social system must perceive the innovation as new and innovative in itself to change behavior patterns for diffusion to occur. Simultaneously, it is also an intrinsic part of the innovation process, in which learning, feedback and imitation arise during the diffusion to enhance the original innovation.

The literature of innovation management has recognized that intermediaries of different types can become an integral part by facilitating the development and diffusion of knowledge, technology transfer and market formation (Bergek, Mignon & Nählinder, 2016). Innovation intermediaries, broadly defined as "organizations that provide a supportive role for collaboration between two or more parties during various stages of the innovation process" (Howells, 2006, p.721) are therefore seen to be central to creating and maintaining a successful innovation ecosystem (De Silva, Howells & Meyer, 2018). However, previous research has largely focussed on the collaboration with intermediaries for the development of new technologies through open innovation (Chesbrough, 2003; Hargadon, 1998; Howells, 2006; Stewart & Hyysalo, 2008). The type of role which intermediaries play in the diffusion of innovation itself, on the contrary, is largely unexplored (Bergek, Mignon & Nählinder, 2016). Chesbrough (2003) define intermediaries acting as innovation diffusors as an agent, broker or marketplace, facilitating the connection between a market and the technology. As intermediaries, they seek to establish or enable the linkages between different actors with complementary, inherent skills to ultimately support the generation and diffusion of innovation (Edler & Yeow, 2016). Aggarwal (1997) on the other hand introduces the concept of surrogate buyers, whereas the authority to make

decisions on whether innovations should be adopted or not is delegated from an end-customer to an intermediary.

As such, the diffusion of innovations itself is highly dependent on the sociotechnical systems. Thus, the result of innovation diffusion is a combination of individual adoption decisions, which impact and influence the rate of adoption and its (un-)successful outcome (Asare et al., 2011; Rogers, 1995).

2.2.2 Theoretic Concepts

For the measurement of innovation adoption, different theoretic concepts have been developed by academia. Extant research has adopted two different approaches, the rational and institutional approaches, to examine determinants of adoption (Alsaad, Mohamad & Ismail, 2018).

Utilizing the rational approach, firms are deemed to behave in a rational manner, whereas innovation characteristics are assessed and capabilities evaluated to determine whether an innovation will be adopted or not (Fichman, 2004). Theories using this approach include the Innovation Diffusion Theory, Transaction Cost Theory, the Resource-Based View, the Unified Theory of Acceptance and Use of Technology Model and the Technology Acceptance Model among many others.

The institutionalized approach, on the other hand, is emphasizing on how the institutional environment determines the adoption of innovations regardless of their appropriateness (Alsaad, Mohamad & Ismail, 2018). Examinations of the role of institutional variables in conceptualizations are being conducted within the Resource Dependence Theory, Institutional Theory and Network Externality Theory as main frameworks.

However, Alsaad, Mohamad and Ismail (2018) further acknowledge the notion that innovation adoption is not solely a rational decision nor a response to variables of the external environment. Furthermore, many researchers in academics have combined both approaches within scientific studies (Alsaad, Mohamad & Ismail, 2018).

2.2.3 Synthesis of Adoption Barriers

In the following, extant literature has been reviewed to conduct a synthesis of the rational and institutional approach with the aim of identifying the adoption barriers that ultimately feed into the decision stage, where the evaluation occurs that lead to the acceptance and thus the adoption or alternatively the rejection and therefore the resistance towards an innovation (see figure 3).
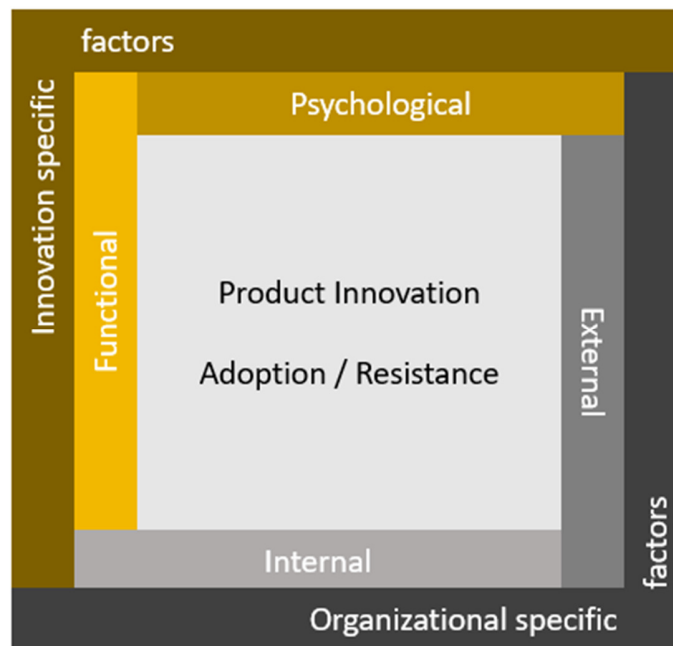
Figure 3: Own depiction of a synthesis of adoption barriers in alignment with Aarikka-Stenroos & Sandberg, 2012; Joachim, Spieth & Heidenreich, 2018; Talke & Heidenreich, 2014.

Organizational specific factors

A classification of internal and external organizational specific factors can be applied.

The external sphere can be deemed largely uncontrollable by single organizations. However, Aarikka-Stenroos and Sandberg (2014) argue that barriers related to single or limited number of actors can be more easily overcome compared to barriers experienced with a great majority of actors within a network. As such, barriers can be furthermore segregated into behavior specific barriers of single actors and those barriers arising out of the macro environment.

Identified external barriers for single actors have been a lack of support from governmental institutions, a paucity of external finance and rivalry with competitive firms. Within the macro economic network, the absence of actors within an undeveloped network among technological advancements and inappropriate infrastructure has been mentioned. (Sandberg & Aarikka-Stenroos, 2014)

Internal barriers impacting an organization from within can be related to mindset as well as competences, resources and organizational structure (Sandberg & Aarikka-Stenroos, 2014).

As issues experienced with the mindset, Burcharth, Knudsen and Søndergaard (2014) introduce the concept of Not-Invented-Here (NIH) and Not-Shared-Here (NSH) syndromes (NSH). Described as the unwillingness of employees to partake in extra-organizational knowledge transactions, the NIH leads to the development of negative attitudes against the sourcing of external knowledge, whereas the NSH leads to negative attitudes towards external exploitation of knowledge assets (Burcharth, Knudsen & Søndergaard, 2014). Aarikka-Stenroos and Sandberg (2014) further argue that single companies are rarely sufficient in covering the commercialization of radical innovations and require the interaction with other actors. Thus, firms require the competence and ability to access and and mobilize relational resources (Story, O'Malley & Hart, 2011).

Innovation specific factors

According to Rogers (1995), an adopters decision is influenced by their evaluation of the innovations attributes. An unfavorable evaluation can thus be deemed an attitudinal outcome leading towards a rejection, a form of resistance that can descend from innovation specific factors. As such, innovation specific barriers arise if perceived attributes of a product do not meet an adopters expectation during an evaluation (Laukkanen, Sinkkonen & Laukkanen, 2008).

Joachim, Spieth and Heidenreich (2018) provide an extensive typology of adoption barriers classified into functional and psychological barriers.

Functional barriers arise, when any of the innovation attributes are being perceived as dysfunctional or inadequate for intended usage or need expectations. Among these are the following   barriers:

Innovation Adoption Barrier - Functional	Explanation
Value Barrier	For an innovation to be adopted, it requires to provide a relative advantage in comparison to benchmark products
Complexity Barrier	The innovation is being perceived as too complex and too difficult to understand
Co-Dependence Barrier	Occurs if innovation is being perceived as incomplete and perceived need for additions/supplements arises
Trialability Barrier	Perception of missing opportunities to test innovation prior to purchase

Compatibility Barrier	Innovation is being perceived as incompatible with previous, existing products
Amenability Barrier	Emerge if innovation offers insufficient possibilities to be modified to consumers needs and requirements
Communicability Barrier	Emerge through the difficulty in sharing the benefits and/or shortcomings of innovation

Table 1: Functional Adoption Barriers, in alignment with Joachim, Spieth & Heidenreich, 2018.

As per Claudy, Garcia & O'Driscoll (2015), value barriers derive from a perceived imbalance between the innovation's price and performance, in comparison with existing products. Hence, a consumer does not see a relative advantage in purchasing the innovation, representing the most common obstacle in innovation adoption (Claudy, Garcia & O'Driscoll, 2015; Joachim, Spieth & Heidenreich, 2018).

Rogers (1995) suggests that whether an innovation is being perceived as too complex and difficult to understand, implement and use, has a direct influence and be considered to be an inhibitor for the adoption behavior. As such, a high level of complexity raises concerns, uncertainty and the risk of resistance regarding the adoption of innovation (Oliveira, Thomas & Espadanal, 2014; Premkumar & Roberts, 1999).

A co-dependence barrier is described to occur if consumers perceive a product to be not usable without additional supplementals or additions (Talke & Heidenreich, 2014). The perceived need of additional investments for the utilization of a product innovation could also inhibit the adoption of innovations negatively. (Lüders et al., 2017)

With the application and utilization of partial trial bases, however, the adoption of innovations are proliferated. By giving consumers the chance to test the innovation first, evaluations of whether to adopt an innovation or not can be positively influenced. (Rogers, 1995; Sahin, 2006)

Furthermore, Rogers (1995) proposes that innovations should be well matched with needs and requirements of their customers. Especially in business operations, an assimilation of extensive modifications is required in order for innovations to be adopted into a firm's structure, processes, practices and routines. Accordingly, innovations should possess a high degree of compatibility and amenability to ensure the greatest possible degree of innovation adoption. (Hollenstein & Woerter, 2008)

Finally, communicability barriers emerge through difficulties experienced in sharing the benefits or shortcomings of an innovation. According to Bendoly, Citurs and Konsynski (2007), employees with greater sophistication in their core competences tend to be more likely to comprehend and use information. Simultaneously, they are more capable in passing on relevant and comprehensive information (Rai, Brown & Tang, 2009) and thus diminishing the communication barriers.

As a second type of adoption barriers, psychological barriers "arise as soon as the innovation conflicts with a consumer's social norms, values or individual usage patterns, or if its usage is perceived as being too risky" (Talke & Heidenreich, 2014, p.899).

Innovation Adoption Barrier - Psychological	Explanation
Functional Risk	The fear product dysfunctions or malfunctions
Economic Risk	If the investment is perceived as too high and a waste of resources
Usage Barrier	If the consumption of innovation requires a disruption of current behavior
Image Barrier	Arise from a negative impression associated with the product, brand, country, etc.

Table 2: Psychological Adoption Barriers, in alignment with Joachim, Spieth & Heidenreich, 2018.

With the functional risk, potential adopters are concerned about the performance of the innovation, whereas malfunctions and dysfunctions could occur which may impair the performance (Kleijnen, Lee & Wetzels, 2009; Talke & Heidenreich, 2014).

As for economic risks, Rogers (1995) makes the suggestion that consumers conduct either an implicit or explicit cost vs. benefit analysis, whereas potential adopters are most likely to adopt if an innovation offers greater benefits than prosecutors. If the innovation offers lesser benefits, the investment can be perceived as too high and thus a waste of resources, inhibiting the adoption of innovations (Kleijnen, Lee & Wetzels, 2009; Talke & Heidenreich, 2014).

Moreover, the role of usage may play a significant role and become a barrier in the propensity to adopt. Per definition, radical innovations require a change in "established

behavioral patterns, norms, habits and traditions" (Kleijnen, Lee & Wetzels, 2009, p.346). In order for adoption to occur, this conflict with existing behavioral patterns has to be overcome.

The image barrier as described by Talke and Heidenreich (2014) reflects the perceived extent to which an innovation seems to be appropriate and desirable (Alsaad, Mohamad & Ismail, 2018). Thus, if potential adopters are not persuaded and convinced of the innovation, the propensity to adopt will decline (Alsaad, Mohamad & Ismail, 2018).

2.3 Relationship Characteristics in Networks for Commercialization

2.3.1 Networks

Due to current developments, such as improved communication technologies and increased product modularity, high-tech markets have become increasingly network-oriented and connected (Chakravorti, 2004; Chiesa & Frattini, 2011). The degree of connectivity of a firm, meaning the connections - sometimes referred to as interconnections - it has to other stakeholders as well as the resource and knowledge flows they comprise, impact the organization's innovation activity (Rickne, 2006). Accordingly, decisions regarding the development and distribution of new products are shaped by multiple interdependent organizations and individuals (Chiesa & Frattini, 2011).

Drawing upon literature in the area of networks and collaboration (Bagheri, Kusters & Trienekens, 2017; Chakravorti, 2004; Sasson, 2009; Spruytte et al., 2017), it has been chosen to combine definitions of business and value networks to further specify the increasing phenomenon of inter-organizational connectivity. Accordingly, business networks consist of three basic elements, represented by actors, activities and resources. These elements are characterized by the connections or links between activities as well as the relationship between different actors and their shared resources (Halinen, Salmi & Havila, 1999). In such settings, network collaborations of various actors contribute to the co-creation of value through the mobilization of capabilities and resources, and finally the provision of integrated solutions, describing value networks (Bagheri, Kusters & Trienekens, 2017; Sasson, 2009; Schneider & Sachs, 2017).

2.3.1.1 Networks for Commercialization

Various purposes for establishing business and value networks, hereinafter referred to as networks, exist. They vary from e.g. innovation networks, meaning networks consisting of heterogeneous players that all contribute to innovation and start-up creation through the exchange of information, evolving knowledge and resources (Ferrary & Granovetter, 2009; Herstad, Aslesen & Ebersberger, 2014), to industrial networks, comprising large amounts

of actors that collaborate for the transformation of resources to finished goods and services (Bankvall, 2014). Such network subtypes differ in the constellation and characteristics of single actors and thus require different skill sets and resources.

In the scope of this study, a focus will be placed on networks for the commercialization of products, describing a group of networks actors that together contribute to the commercialization of innovative products (Aarikka-Stenroos & Sandberg, 2012; Aarikka-Stenroos, Sandberg & Lehtimäki, 2014). In general, research has coined commercialization with many differing terms, among them the process of launches, go-to-market strategies and market introduction, whereas products or services are being introduced into markets and to their respective customers (Andrew & Sirkin, 2003; Friedman, 2012; Nerkar & Shane, 2007). Within this thesis, the definition of Nerkar and Shane (2007) will be applied, in which commercialization of innovation is being measured by an early indication of value creation, operationalized through the first sale of the NPD to the customer.

2.3.1.2 The Role of Customer Loyalty in Networks

Networks are shaped by inherent dyadic relationships, meaning relationships between two parties (Halinen, Salmi & Havila, 1999). Changes within ongoing dyadic relationships occur as a result of the interaction itself, which forces both parties to constantly adapt to each other (Halinen, Salmi & Havila, 1999). These changes either only affect the dyad itself, or may impact other actors in the network which eventually can lead to changes of the entire network, depending on how radical the initial change is (Aarikka-Stenroos & Sandberg, 2012; Halinen, Salmi & Havila, 1999). Consequently, the development of relationships and dyads can be considered a relevant trigger of change for an entire network (Aarikka-Stenroos & Sandberg, 2012). Hence, intra-network relationships in dyads have to be understood in order to be able to interpret the organizational behavior of single actors, e.g. with regards to innovation adoption (Schneider & Sachs, 2017).

Loyalty is considered a major positive outcome of such relational exchanges as it enables long standing interactions between two actors in a dyadic relationship (Ostrowski, O'Brien & Gordon, 1993; Palmatier et al., 2006). In the past, the role of loyalty in B2B relationships has gained high traction due to it positive impact on sales and overall firm performance (Beck, Chapman & Palmatier, 2015; Palmatier et al., 2006; Viswanathan, Sese & Krafft, 2017). For this reason, an investigation of characteristics that enable the development of customer loyalty in dyadic relationships seems appropriate. This is further supported by Hart & Saunders (1997) who argue that increasing pressures within national and international markets have directed a greater focus on the role and characteristics of interorganizational partnerships. Further, the acquisition of new partnerships is considered seven times more expensive as customer retention (Hart & Saunders, 1997) Hence, an

overview of relationship characteristics that facilitate customer loyalty in dyadic relationships will be provided in the following, serving as a knowledge foundation for the to-be-presented analysis.

2.3.2 Enablers of Customer Loyalty: Intra-dyadic Relationship Characteristics

2.3.2.1 Introduction: Social Capital Theory

Extant literature provides a broad range of different relationship characteristics (RC) that influence interdependent organizations. Social capital theory offers a useful concept clustering such RCs based on their attributes to provide a more structured overview. Most scholar of this theory agree that social capital, namely networks, holds inherent resources which can be accessed or influenced through ties within the networks. Hence, relationships are the underlying mechanism and source of social interaction in social capital theory, as they translate resources in the network to performance by accessing them. (Che et al., 2018; Ortiz, Donate & Guadamillas, 2016)

The broadest perspective of Social Capital Theory has been offered by Nahapiet & Golash (Ortiz, Donate & Guadamillas, 2016) and, due to its generalizability, will be used within this thesis. Their classification distinguishes between relational, structural and cognitive RCs (Nahapiet & Ghoshal, 1998).

Relational characteristics define intangible factors influencing relationships between partners, such as trust (Karahanna & Preston, 2013; Nahapiet & Ghoshal, 1998; Ortiz, Donate & Guadamillas, 2016). On the other hand, the structural type of characteristics describes more tangible, impersonal linkages that exist between two parties. This comprises factors such as information on the absence or presence of connections, but also their density or power balance (Che et al., 2018; Karahanna & Preston, 2013; Nahapiet & Ghoshal, 1998). Lastly, cognitive characteristics represent common goals of both parties, which often facilitate their interaction considering that they understand their respective perspectives (Karahanna & Preston, 2013; Nahapiet & Ghoshal, 1998; Ortiz, Donate & Guadamillas, 2016).

Palmatier et al. (2006) argue that so-called relational mediators enable the establishment of customer loyalty, which is considered a major outcome of relationships to drive a company's sales and performance. Hence, this study's focus shall lie on the relational side of Social Capital Theory, and in particular, relationship quality.

2.3.2.2 Relationship Quality

Relationship quality is commonly used in business research for the description of the different facets of relationships, summarizing a set of focal relational RC (Palmatier et al.,

2006). It is considered a representative assessment tool for the judgement of a relationship's strength as well as the extent of interest to maintain the relationship (De Wulf, Odekerken-Schröder & Iacobucci, 2001) and thus will be the focus of this study. There is no consensus in terms of its exact components, however most reviewed literature specified relationship quality as a construct of a customer's trust, commitment and satisfaction (Barac et al., 2017; De Wulf, Odekerken-Schröder & Iacobucci, 2001; Hennig-Thurau, Gwinner & Gremler, 2002; Palmatier et al., 2006).

Trust

As stated by Reichheld and Schefter (2000, p.107), a customer's loyalty can only be achieved after gaining the customer's trust, making it a major component of long-term relationships (Hennig-Thurau, Gwinner & Gremler, 2002). It is described as the "confidence in an exchange partner's reliability and integrity (Morgan & Hunt, 1994, p.23), meaning the customer is convinced that the seller is reliable and possesses a high level of integrity (Hennig-Thurau, Gwinner & Gremler, 2002). A trusting customer is typically willing to take risks in favour of the seller, due to the customer's reliance on its exchange partner (Palmatier et al., 2006).

Commitment

Commitment is perceived as the permanent willingness and efforts undertaken to preserve a stable and valued relationship (Moorman, Zaltman & Deshpande, 1992; Morgan & Hunt, 1994). Not only the presence of this belief and behaviour, but also its consistency over time are relevant for it to be defined as relationship commitment (Chou, Techatassanasoontorn & Hung, 2015; De Wulf, Odekerken-Schröder & Iacobucci, 2001). Commitment is usually grounded on either emotional bonds between two parties or the belief that benefits resulting from the relationship prevail those of terminating it (Hennig-Thurau, Gwinner & Gremler, 2002).

Satisfaction

The concept of satisfaction is presented " (...) as the customer's emotional or feeling reaction to the perceived difference between performance appraisal and expectations" (Hennig-Thurau, Gwinner & Gremler, 2002, p.232). Hence, the customer organization's experience with the seller has to either fulfill or exceed its expectations towards it to reach a state of satisfaction (Ostrowski, O'Brien & Gordon, 1993). Satisfaction may either concern a specific exchange made or a cumulative effect of experience made throughout the relationship (De Wulf, Odekerken-Schröder & Iacobucci, 2001). In this thesis' scope, the former understanding will be applied, looking into the perceived satisfaction towards the customer's purchase of a radical innovation from the CC. This perceived satisfaction can further be distinguished into three perspectives, i.e. the satisfaction with the contact person,

the core service and the organization one is cooperating with (Sirdeshmukh, Singh & Sabol, 2002).

Dyadic Antecedents of relationship quality

As per Palmatier et al. (2006), the relational mediators of trust, commitment and satisfaction are preceded by a set of antecedents that influence the dyad and hence, its relationship quality. So-called dyadic antecedents depend upon the engagement of both parties of the dyadic relationship and are of equal significance to both, and hence will be included in this study (Palmatier et al., 2006).

They comprise the factors of communication and similarity between both parties, the length of their relationship and frequency of their interaction, as well as conflicts that have occured within the dyad. Depending on how these antecedents are perceived within the relationship, the extent of the relational mediators of trust, commitment and satisfaction will vary. As an example, high interaction frequency will cause more transparency within the dyadic communication, hence resulting in higher levels of trust. (Palmatier et al., 2006)
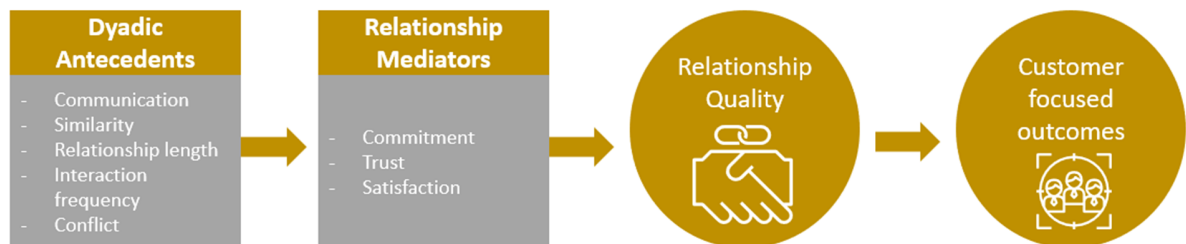
Figure 4: Influential sequence of Relationship Quality (own depiction)

As these antecedents are mainly responsible for shaping the relationship quality within the dyad (see figure 4), and namely its relational mediators of trust, commitment and satisfaction, they can be considered of high significance within relationship management research.

The specific definitions for each dyadic antecedents are listed in Table 3.

Antecedent	Description
Communication	Communication describes the dynamic processes of how information is passed on within organizations. It is a crucial factor in guaranteeing a firm's stability, as it enables e.g. the escalation and de-escalation of conflicts within the organization or the

	satisfaction of employees and hence, better relationship quality and aligned values (Palmatier et al., 2006; Yousaf, 2017).
Similarity	Similarities concern beliefs, values as well as strategic objectives between two parties of a dyad. They are usually considered to have a positive impact on organizations, e.g. when shared goals may represent a motivational factor to collaborate, thus positively influencing relationship quality. (Palmatier et al., 2006)
Relationship Length	Relationship Length is the total amount of time that the relationship has been in place. A longer duration of a relationship often implies stronger ties and a better relationship quality between the actors. (Che et al., 2018; Palmatier et al., 2006)
Interaction Frequency	The number of interactions that have occured within a defined period of time are labelled as interaction frequency. It is expected to have a particular impact on trust, as frequent interaction decreases the perception of uncertainty for a buyer, who is granted more information. (Palmatier et al., 2006)
Conflicts	Conflicts are expressed through lacking agreement between dyadic partners and usually negatively impact trust and commitment, as the customer is hindered in believing in the long-term benefit of the relationship. Their occurence negatively impacts the level of trust, commitment and satisfaction. (Palmatier et al., 2006)

Table 3: Dyadic Antecedents of Trust, Commitment and Satisfaction; inspired by Palmatier et al., 2006.

By influencing the three relationship mediators of trust, commitment and satisfaction, the dyadic antecedents of relationship quality represent a suitable framework for measuring and defining the relationship quality within companies. Within this study, it has been assumed that high degrees of similarity, frequent and efficient communication as well as low conflict potential result in a high relationship quality, whereas opposite attributes result in a lower relationship quality.

Customer-focused Outcomes of Relationship Quality

Lastly, Palmatier et al. (2016) provide a list of customer-focused outcomes of relationships, that depend on the respective level of relationship quality within the affiliation. They comprise the continuity of the relationship, as well as customer loyalty and Word-of-Mouth (WOM). Word of mouth describes the potential outcome of a customer recommending the supplier within its network, while continuity reflects the continuous commitment of a buyer to purchase from the supplier. Lastly, customer loyalty can be seen as a multidimensional concept that further enables long standing interactions between two actors in a dyadic relationship (Ostrowski, O'Brien & Gordon, 1993; Palmatier et al., 2006).

2.4 Synopsis of theoretic concepts

As this research aims to contribute to the fields of relationship quality and the adoption of innovations through the lens of adoption barriers, the connection of both theoretical concepts shall be made within this synopsis, hence creating a better understanding of the relations existent between the different concepts that build the foundation of this study (see figure 5).

The concept of adoption barriers has been developed by Talke and Heidenreich (2014) and reassessed by Joachim, Spieth and Heidenreich (2018), who confirmed the concept's generalizability and comprehensibility. Hence, it can be viewed as an appropriate framework guiding the evaluation of different factors that hinder innovation adoption in networks, which has emerged as a crucial practical issue in the problem discussion, for which empirical data could provide insights that reduce failure rates by guiding the implementation of product specifics according to a barrier-driven product concept (Joachim, Spieth & Heidenreich, 2018).

From a theoretical standpoint, previous studies underline the effects of adoption barriers on innovation rejections, and the importance of understanding and diminishing these barriers, especially in a B2B-context, with it representing a less researched object in adoption research in comparison to individual adoption behavior (Mohamed Samir Hussein & Mourad, 2014). Despite the significance of investigating adoption barriers in a B2B network, various researchers have emphasized the need to further analyze the role of relationships within networks to be able to evaluate adoption barriers. As such, Gibbons (2004) argues that adoption behavior within networks may differ, depending on the respective interaction of organizations and individuals in which the diffusion shall take place. This argument is further supported by Schneider and Sachs (2017) and Story, O'Malley and Hart (2011), with both research teams claiming that organizational behavior depends on the specific relationships a company encounters within its network, which can be applied to adoption behavior. Further, with surrogate buyers constantly adopting innovations (Aggarwal, Cha & Wilemon, 1998), social and relationship aspects with their

long-lasting impact can be viewed as a continuous factor influencing adoption processes. Hence, a clear connection between the topic of adoption barriers and business relationships is signalized as well as the perception created, that adoption barriers are impacted by different kinds of relationships.

Despite the theoretical and practical significance of the topic, no academic research examining how variations in adoption barrier evaluation are conditioned by different relationship scenarios could be found. Hence, a suitable research object could be identified through the connection of present academia.

Accordingly, the search for a suitable framework defining the characteristics of relationships order to compare varying relationships with each other has directed the authors towards literature of Palmatier et al. (2006) on relationship quality and its antecedents, being a popular assessment tool for judging the strength of relationships (De Wulf, Odekerken-Schröder & Iacobucci, 2001). It is assumed that partnerships with a high relationship quality are - due to higher levels of satisfaction, trust and commitment, more inclined to adapt radical innovations and are thus less reactive to adoption barriers in comparison to qualitative lower perceived relationships, who are assumed to react more strongly towards radical innovation adoption. If such a correlation can be identified, it shall be further questionable how this impact is being made exactly, hence providing further insights on how relationships can be assessed to avoid the occurrence of barriers.
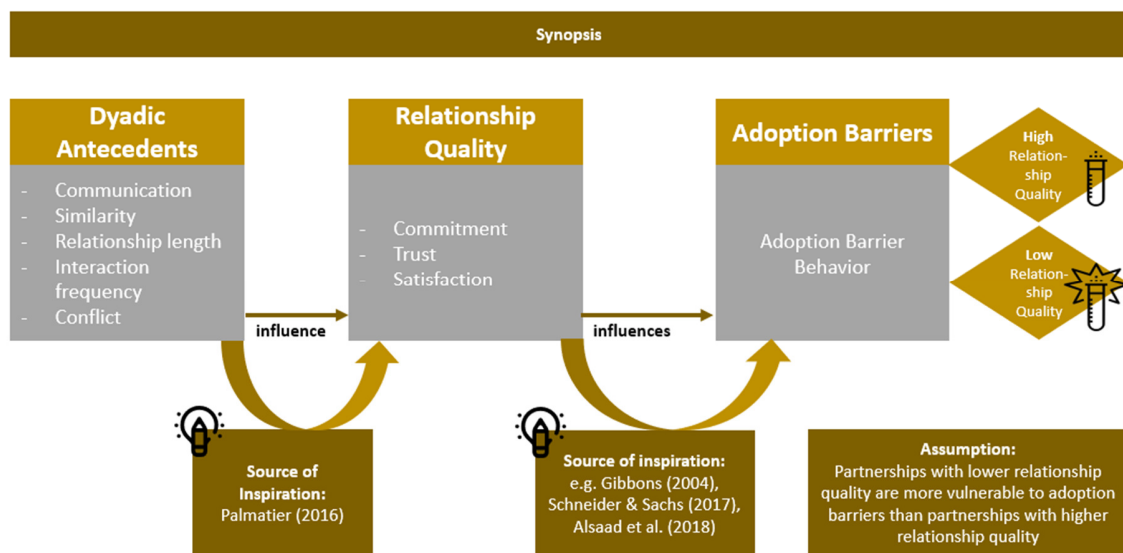
Figure 5: Synopsis of literature guiding the research of this study (own depiction)

3. Methodology

In the following, an overview of the conducted research approach and design will be presented.

3.1 Ontological Viewpoint

This study is based on the principles of constructionism. Investigations within this study occur in the area of social sciences, implying that the researchers believe that reality is constructed by its actors being people and organizations and henceforth, their respective actions (Bryman & Bell, 2011). Following the epistemological notion of interpretivism, the actions within this reality are thus shaped and influenced by the meaning attributed to them (Bryman & Bell, 2011). Both the CC and its network partners can be regarded as social constructs being influenced by individual social actors existing and acting within these constructs (Bryman & Bell, 2011).

Hence, it becomes obvious that the research question requires to be answered through hermeneutics, the investigation and interpretation of human behavior and their social world through the perspective of the social actors within these established constructs (Bryman & Bell, 2011).

3.2 Research Approach

Simultaneously, however, these findings imply that the challenges identified in this study can be influenced through appropriate measures. Thus, to answer the research question, a qualitative research approach has been chosen, being regarded as the most suitable approach to assessing a social construct in a construction-based research process (Bryman & Bell, 2011).

Furthermore, an inductive research process entailing deductive components has been chosen for this study. As such, gaining insightful data from within the social constructs was a first priority, before hermeneutics was applied to derive findings that could be paired with empirical research and the development of theoretic frameworks. Thus, the benefits of inductive as well as deductive research processes could be exploited.

Among these benefits is the opportunity of iteration, which allows to continuously repeat the process of data gathering and empirical analysis. Thus, findings from this research can be continuously cross-checked to enhance the generalizability of this study's results (Bryman & Bell, 2011). With this approach, this study aims at specifying the challenges experienced by these social actors within the network to derive and offer strategic recommendations to counteract these occurrences.

3.3 Research Design: Exploratory Study

Originally, the research design of this study was intended to be conclusive, providing definite answers to a pre-defined research question. However, with the difficulty of obtaining raw data through formal and semi-structured interviews, a reassessment and transition towards an explorative study has been conducted.

Hence, this study aims to get initial insights and understanding of whether tentative findings for influences of relationship quality on product-specific adoption barriers can be identified and if so, to provide a baseline for further exploratory conclusive research.

3.4 Multiple Cases within Single Case Study as Research Design

With the scope of this study, the understanding of the social construct established by the actors within their networks is of utmost importance. For this reason, a single case study has been chosen as the research design, whereas emphasis is placed on "the uniqueness of a case in order to develop a deep understanding of its complexity" (Bryman & Bell, 2011, p.61).

The CC is of academic interest since the social construct described in 1.4 embodies a representative example for the purpose of investigating both, adoption barriers as well as relationship quality through its mediators and dyadic antecedents. The CC operates in a science-based network, in which parts and products of their own developments are being handled by multiple partners throughout the value chain, partly managed with the help of the company's loyalty program for commercialization. Partners can sign up virtually to become an authorized dealer of the CC's products and later on move between ranks based on sales volume of authorized, silver and gold partnership, all implying different types of relationships. Endeavors are taken to valorize partnerships to gold level to strengthen and stabilize the network. Rising degrees of trust, commitment and satisfaction are expected to be found in higher-tier status memberships, making this loyalty program a suitable filter for acquiring diverse interview partners.

With regards to adoption barriers, the CC innovates at a high frequency in a highly competitive industry. To answer this study's research question, the focal point has been placed on one specific radical innovation, which has been deemed a great source of insightful data.

The product is a network door controller, which sets new technical standards from a hardware perspective, by enabling power over ethernet and thus significantly reducing the required installation cabling to one single cable. Furthermore, it has a free-of-charge, embedded software that allows the control of a limited number of doors. With the software panel being an open platform, partners can make use of the open platform by installing an external partners software on the product, allowing the extension and the doubling of the control capabilities. Hence, the product offers opportunities for modifications according to customers requirements and can be used with other digital innovations. It qualifies as a

complex, coupled product (Fleming & Sorenson, 2004), comprising a variety of inherent components that have been developed in the scope of intensive R&D activities of the CC, thus representing a suitable representative of complex radical innovations.

Even though certain obstacles in selling the selected product have been considered by the CC and thus led to the adaption of sales expectations, the chosen product nonetheless underperformed in its respective markets, suggesting the existence of innovation adoption barriers in this case.

It further has to be noted that the product is intended to be applied in small-to-medium sized environments with a low door density. By the time this study has been conducted, the product line has been extended by an additional door control unit enabling the control of an unlimited amount of doors through a central, enterprise sized system. The chosen product innovation provides a great use case for this study's intentions to assess the barriers of radical innovation adoption. By choosing one focal product, the answers are further expected to be of higher generalizability, leading to more representative results.

Within this single case study, multiple sub-cases have been incorporated. Aiming at the identification of relationship influences on the adoption behavior of radical innovations within a network, an analysis of different dyadic relationship sub-cases between the CC and its network partners have been conducted to detect if differences in their adoption behavior are perceivable.

3.5 Research Process

For the initial research phases, an inductive process has been chosen and applied. Following, observations, informal conversations and secondary data in the form of the corporate intranet and presentations within the CC have been utilized for gathering an initial understanding of the social context of the case study.

The combination of different, triangular methods for gaining rich data allowed to diverge into different research areas until saturation has been reached and ultimately, to converge overlapping areas to narrow down the scope of potential topics to identify a final research proposal (Bryman & Bell, 2011), leading the focus of this study to the impact of relationship quality on adoption barriers.

Ultimately, semi-structured interviews in combination with literature reviews have been conducted to obtain rich data. Subsequently, the data analysis framework by Gioia, Corley & Hamilton (2013) and Eisenhardt (1989) have been jointly applied to identify patterns and develop an integrative framework for answering the selected research question.

3.6 Interview Preparations

Interviews were initially planned to be conducted face-to-face, if possible, to exploit the opportunity of collecting verbal and non-verbal data through gesticulation and facial expressions (Bryman & Bell, 2011). However, with a geographically dispersed, multi-national CC and network partners stretching across the globe, all interviews had to be conducted via video conference calls. The notion of Bryman and Bell (2011) that data obtained through other means than face-to-face interviews lessens the quality has in this case to be accepted.

3.7 Data Collection

3.7.1 Semi-Structured Interviews

Prior to the selection of interviewees, pre-set criterias have been defined in alignment with the research question to ensure qualitative rigor in the data gathering (see table 4).

Loyalty Program Status	Network Partner
Authorized	4
Silver	-
Gold	5

Table 4: Pre-defined criteria for interviewee selection.

As a first criteria, emphasis on the tier status authorized and gold has been placed. The silver tier status has been purposively not considered, as the CC undertakes efforts to either rise those members to gold status or decline to the authorized member tier. As previously expressed, different levels of trust, commitment and satisfaction are expected to emerge within different loyalty program memberships, making the program a suitable tool to measure differences in adoption behaviour based on relationship quality. The contacted customers have all purchased the same product, being a network door controller which is deemed to be one of the CC's radical innovation.
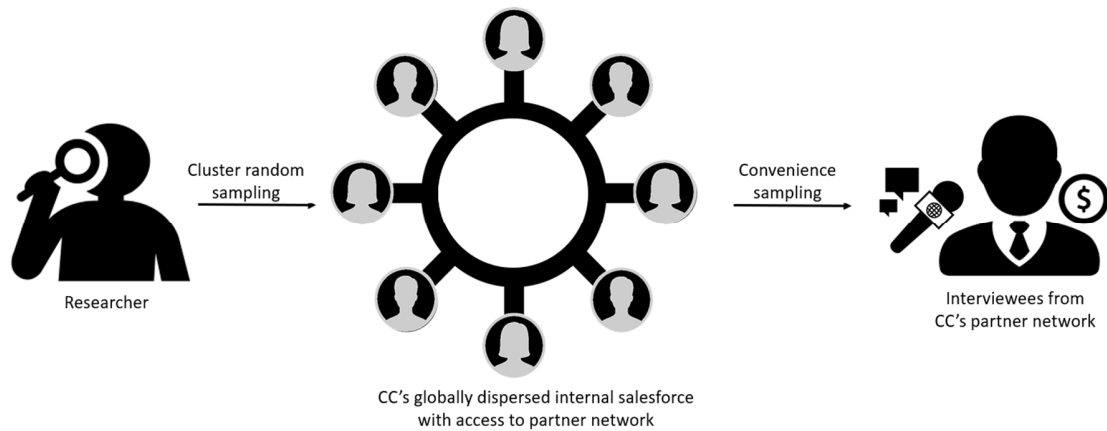
Figure 6: Interviewee selection process (own depiction)

Based on these criteria, the sampling of interviewees within this study occurred through a combination of cluster random sampling and convenience sampling (Bryman & Bell, 2011) (see figure 6). Sales personnel within the CC has first been clustered according to their geographical location with the aim of achieving a higher generalizability and comprehensibility through this geographical dispersal. From then onward, the chosen employees have functioned as intermediate contacts by purposively selecting interviewees within their local customer base. As the CC's internal salesforce has based their choice on personal preferences, the second part of the sampling process can be regarded as convenience-based. It has to be noted, however, that due to practical issues the initially targeted amount of 18 interviews dispersed across the globe for a higher generalizability could not be reached due to low response rates. A total of 82 employees in company's internal salesforce and 35 external customers have been contacted based on prior cluster and convenience sampling, however only ten semi-structured interviews could ultimately be arranged, with most of the interviewees being located on the South- and North-American continent.

Ultimately, the following table presents the interviewee selection for the conducted semi-structured interviews:

Name	Country	Tier (Loyalty Program)	Date	Recorded	Pilot
Pilot 1	USA	Gold	15-04-2019	Yes	Yes
Interviewee 1 (I1)	USA	Gold	16-04-2019	Yes	No
Interviewee 2 (I2)	USA	Authorized	17-04-2019	Yes	No

Interviewee 3 (I3)	USA	Gold	18-04-2019	Yes	No
Interviewee 4 (I4)	USA	Gold	24-04-2019	Yes	No
Interviewee 5 (I5)	USA	Gold	25-04-2019	Yes	No
Interviewee 6 (I6)	Canada	Authorized	25-04-2019	Yes	No
Interviewee 7 (I7)	USA	Gold	02-05-2019	Yes	No
Interviewee 8 (I8)	Kenya	Authorized	06-05-2019	Yes	No
Interviewee 9 (I9)	Chile	Authorized	06-05-2019	Yes	No

Table 5: Overview of Interviewee Selection

3.7.2.1 Interview Guide

With a clear focus on the research area and clearly defined research question, a semi-structured interview guide has been developed. With this method, the interviewers are able to guide interviewees throughout the conversation as per the predefined guide, while simultaneously remaining flexible enough to dive deeper into upcoming topics of interest. Using this approach, undiscovered topics of relevance can still be incorporated within this study (Bryman & Bell, 2011).

To ensure the quality of the interview guide and that all relevant areas of interest for this study have been covered, a pre-test has been conducted to eradicate its weaknesses of misinterpretations or missing questions (Bryman & Bell, 2011). Having conducted the initial pilot-interview, its partly closed questions have proven to negatively impact the interview quality, by not allowing the interviewee to elaborate on experiences made within the adoption journey. As a consequence, the interview guide has been revised for subsequent interviews and has not been included into the analysis, for better generalizability of all findings. The final interview guide (see appendix A) relates to the partners of the CC's network and has been built around two sections.

<u>Section 1: Relationship Quality</u>

Within the first section, information with open questions aiming at examination of the interviewee's relationship with the CC based on the five parameters of similarities, interaction frequency, relationship length, communication and conflicts (Palmatier et al., 2006) has been collected. For this purpose, aforementioned dyadic antecedents have been integrated into open questions, asking the interview partner to provide facts about the length of the relationship, the frequency of interaction as well as to elaborate on the actors' communication within the dyadic relationship.

Further, the interviewee is asked to present the intermediary's strategic objective to be able to detect similarities, as recommended by Palmatier et al. (2006). Within this scope, the interviewees have been also asked about their perception of the two core values of the CC, being customer-orientation and innovation focus, in order to detect additional similarities.

Questions aiming at extracting information on previous conflicts in the dyad have also been added, to create not only an understanding for the present situation but also incidents in the past which may help evaluate the overall relationship quality. As a closing question, the interviewees have been asked about their overall satisfaction with the CC, in order to be able to spot image barriers. Even though the first section of the interview is not dedicated to adoption barriers, it has been chosen to shift this question away from the second one, being more heavily focused on the product itself.

Section 2: Innovation-specific adoption barriers

In the second section, the interview guide is dedicated to discussing previously presented adoption barriers and how the company is affected by them. The interviewees will not be informed about the theoretical classification of adoption barriers in order to avoid bias in their answers. Hence, the questions do not directly present each adoption barrier but indirectly describe the phenomena through questions.

At first, the intermediary's representative will be asked whether the the company has been offered to try the product before purchasing it, which will enable the judgement over the presence of trialability barriers. Thereafter, a rather open question asking the interviewee to reflect why the product has been purchased and what reasons caused hesitancy follows, giving a holistic overview into adoption-enabling and hindering factors as foundation of the subsequent questions. Following this, the interviewee is asked to discuss whether the monetary investment in the product is considered as justified, offering potential chance to spot economic barriers related to high product prices.

To detect whether the system integrator experiences issues in integrating the product into satisfactory end-products serving his and his customer's requirements (amenability barrier), a question asking how the product is being processed before selling to the end-customer is asked.

As for functional barriers, the selected product combines a hardware with an exchangeable software, thus guaranteeing freedom in adjusting the product to the customer's need. However, if exchanged, this could also imply that the delivered software does not suffice the buyer's requirements, forcing the company to invest into add-on purchasers. Therefore, a first question shall examine the overall satisfaction of the hardware (functionality barrier) while a second question shall determine the satisfaction with the software. In case of lacking satisfaction regarding the software, co-dependence and compatibility barriers can be concluded.

Subsequently, complexity and communicability barriers will be investigated by examining how easily technical specifications and the value proposition of the product has been understood by the intermediary, and how well such information can be transferred to end-customers. Value barriers will be detected by simply asking the intermediary to compare the benefits of the product to competitor products subsequently.

Further, functional and image barrier risks shall be examined by asking about the intermediary's customer experience in purchasing products this particular product, with regards to product performance and quality, as well as potential dysfunctions that have been encountered.

Finally, an open-ended closing question asking for additional feedback or questions shall be asked as a last chance for the interviewee to reflect and potentially elaborate on his or her viewpoint (Bryman & Bell, 2011).

3.8 Data Analysis

According to Eisenhardt (1989), the analysis of data is the most important part in building theory from case studies, yet, it is also the least codified and thus the most difficult part in research.

3.8.1 Interim Analysis: Determination of Varying Levels of Relationship Quality

As a foundation of this study, the partner network of the CC has been utilized to serve as a methodologic tool for selecting partnerships with a low relationship quality for authorized and a high relationship quality for gold partners. To ensure the academic rigor of this study, it first has to be assessed whether the expected variations in the relationship quality accordingly to the tier status within the partnership network can be validated as expected. Hence, an interim analysis has been conducted to validate or falsify this hypothesis in Appendix B + C.

As both customer types represent different cases (Bryman & Bell, 2011), they have been examined in-depth as separate objects, representing a within-case analysis and thereafter compared through cross-case comparison as recommended by Eisenhardt (1989).

Within these cases, detailed summaries for each case have been developed, aiding in the generation of insights and in becoming intimately familiar with each case to allow the spotting of unique patterns of each case.

To draw generalizations between cases, the framework championed by Gioia, Corley & Hamilton (2013) has been utilized separately for both authorized and gold partners, aiming at the development of cross-case patterns, with the intention of allowing new concepts and integrative frameworks to emerge by recognizing evolving patterns within the collected

data. Using this method, a deductive, theory-driven approach has been taken by converging raw data into predefined distilled and aggregated dimensions for better comparison.
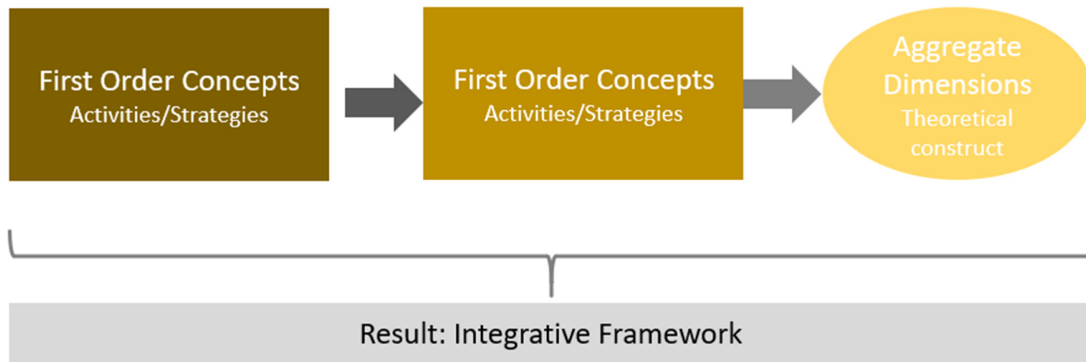
Figure 7: Graphical depiction of Gioia, Corley & Hamilton, 2013.

Ultimately, these distilled and aggregated dimensions (see figure 7), comprising of strategic objective, Customer Relationship Management and Communication both for authorized and gold partners, have been set in comparison and matched with the dyadic antecedents of relationship quality: Similarity, Conflicts, Communication and Interaction. During the analysis, another antecedent of dependence emerged that Palmatier et al. (2006) identify as a customer-focused antecedent, whose influence is limited to one side of the exchange.

Finally, an analysis of the mediators influencing the relationship quality occurred. Each mediator has thus been analyzed as to which antecedent has the highest influence to be able to gauge the relationship quality of gold and authorized partners. In regards to this study being of explorative nature and for a more simplified and comprehensible approach, only the most influential antecedent has been considered.

3.8.2 Analysis of Adoption Barriers

Having defined and validated the existence of different relationship quality within gold and authorized partnerships, the influence of such varying relationships has been analyzed. Similar to the analysis of the relationship quality assessment, a theory-driven, deductive approach has been taken whereas the aggregated dimensions and the order of themes have been deducted from adoption barrier literature in chapter 2.

As previously indicated, this study intends to analyze a social construct and the action taken by social actors within this construct. As such, the Eisenhardt-Analysis has been complemented with the open, un-restraining analysis method of Gioia, Corley & Hamilton (2013) (see figure 7), to structure the findings accordingly to the identified barriers while simultaneously allowing the emergence of new, previously unconsidered dimensions.

Accordingly, individual case reports for each case group were written based on the structures and categorizations given by theory to facilitate the within-case analysis (Eisenhardt, 1989). Thereafter, functional and psychological barriers have been chosen as aggregated dimensions and the barriers and risks as introduced in chapter 2.2.3 have been used as a second order concept. Thereafter, a reversed approach as the one suggested by Gioia, Corley & Hamilton (2013) has been taken, allowing the structuring and codification of data, while also enabling the emergence of unidentified patterns outside of the theoretic concepts of chapter 2.2.3. (see figure 8)

Complexity Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...it provides everything we need for your controller..." (I4) - "I don't think there's anything to improve. The product is quite easy to use and install, so there's nothing..." (I7)	Technical Specifications are well comprehensible	Complexity Barrier	Functional Factor
- "The benefits of the product are pretty self-explanatory." (I1) - "...they are quite clear." (I3) - "Yeah, very clear value proposition" (I5) - "No, I think it's very clear, so I don't think it needs improvement." (I7)	Value proposition is clear		

Figure 8: Codification of data by using Eisenhardt (1989) and Gioia, Corley and Hamilton (2013) in a reverse process.

The within-case analysis yielded detailed descriptions as to how each case group behaved in regards to the given adoption barriers, whether and how these have been encountered. The resulting findings have been presented in chapter 4.1 and 4.2 respectively.

Followingly, as the main focus of this study, the case descriptions of gold and authorized partners have been set in comparison to allow unique and generalizable patterns to emerge (Eisenhardt, 1989).

Based on the findings drawn in chapter 4.3, an analysis has been conducted that resulted in the development of five proposals in alignment with the nature of this study being of explorative nature, in addition to a conceptual model as presented in chapter 5.3.

3.9 Assessment of Quality Criteria

To ensure the internal reliability of this study, inter-observer consistency has been reached through close collaboration between the research partners. As such, findings have been discussed extensively to secure the neutrality and inter-subjectivity of interpreted data (Bryman & Bell, 2011).

Following the means of internal validity, an appropriate and fitting match has to be achieved between the researcher's observations, its findings and the theoretical concepts identified

and utilized (Bryman & Bell, 2011). These means have been achieved through a consistency within the aligned work processes, which have been developed and established between the two researchers of this study during the prolonged participation across a time-span of four months entailing continuous peer reviews.

With the research design of a single case study, infused with multiple sub-cases, and the nature of this research being of qualitative design, the criterion of external reliability, on the contrary, is challenging to achieve. Corroborated by changing dynamics within and outside of corporate boundaries, the environment of the CC and its network partners are constantly changing. As such, external validity is similarly hard to achieve.

However, the findings of this study will still be applicable to social actors operating within similar social settings (Bryman & Bell, 2011). Furthermore, Gioia, Corley and Hamilton (2013) argue that through the application of their data analysis framework a case can be generalized if it develops principles and concepts which are of relevance to other settings. In addition, (Eisenhardt, 1989) argues that combining emergent theory and concept with extant literature also enhances the validity. Henceforth, the results of this study will still be applicable to other high-tech, science-based industries with fragmented, corporate processes and network affiliations for product commercialization.

3.10 Ethical Considerations

Ethics are deeply rooted in the ancient Greek philosophy inquiry about moral of life. Within this study, the most important ethical considerations will be addressed to ensure an ethical conduct and academic rigor.

Bryman and Bell (2011) introduce four pillars for ethical conduct: harm, consent, privacy and deceit.

Steps have been taken to avoid any harm to participants of this study. By providing sufficient information about the risks and enabling the possibility to decline participation at any time, the risk of any harm can be decreased (Bryman & Bell, 2011). Especially in consideration of the area in which this research has been conducted, the researchers treated and handled potential interviewees carefully as to not damage the relationship the case company has with its partners and vice versa.

Secondly, through the provision of sufficient information about the course of the interview, the risk of lacking consent to participate within this study could be significantly mitigated. However, a careful balance between providing sufficient information and divulging too much had to be considered in order to ensure the authenticity of each interview. Furthermore, the participation has been stressed to be of voluntary nature to ensure that

partners do not feel pressured into committing any interviewees they were not willing to give.

Moreover, privacy concerns have been anticipated. Hence, each interviewee has been informed about the chosen data selection tool, relying on recordings of conversations for later transcription and data analysis. To mitigate this risk, interviewees have been informed about the recordings prior to the interview start and provided furthermore the possibility to decline the recording or withdraw from the interview altogether. To mitigate these risks, interviewees have been informed of and steps have been taken to ensure the anonymity, confidentiality and transparency of and with each interviewee.

Lastly, interviewees might feel the notion to be deceived if the research topic does not match their perceptions (Bryman & Bell, 2011). To avoid this occurrence, crucial research information has been shared with participants, providing sufficient opportunities to ask for additional information and feedback, if required.

With the considerations of these four pillars, an ethical conduct could be ensured throughout the interviews.

4. Findings

With the confirmation of authorized partners having a lower relationship quality than gold partners (Appendix B + C), their respective evaluation of radical innovation adoption barriers has been assessed separately. The findings from these previous analyses will be presented in the following three sub-chapters.

4.1 Gold Partners

Value Barrier

Gold partners have been asked to reflect upon their impression of the relative advantage of the radical innovation in comparison to benchmark products.

Positively regarded in comparison to competitors has been the flexibility and openness of the platform (I3, 18.04.2019; I4, 24.04.2019; PI). It has also been found that gold partners appreciate the innovativeness and novelty of the product, allowing the ability to be scaled to customers' needs.

> *"I would say that it's quite an innovative product and it stands out from the traditional access market." (I3, 18.04.2018, Personal interview[PI])*

Furthermore, gold partners have identified opportunities for up- and cross-selling for customers of them already using other products of the CC, providing themselves as well as the CC greater business opportunities. However, a gold partner has also noted that they can only perceive these aforementioned advantages with the CC's existing product line and that the novelty of the hardware, providing power over ethernet, is a common practice and not as novel as perceived (I5, 25.04.2019; I7, 02.05.2019; PI).

> *"Ehm...no, not really, you know, I, we didn't really see any advantage to the actual hardware, this product, other than they were already using camera station software, and we knew that there was some integration between the access software and the camera station software, so we felt it would be a more seamless experience for the end user. That's the main reason we chose it." (I7, 02.05.2019, PI)*

> *"Yeah, I think that it compares, okay. There's a lot of other ones that are IP-based." (I5, 25.04.2019, PI)*

Multiple gold partners have also mentioned suggestions, as to how the product could be improved to obtain superior market performance. As such, it has been recommended to extend the product's ecosystem with additional, external software collaborations as well as to provide bigger product lines to address a multitude of customer needs. Moreover, it has been suggested to include additional functions and features, like an integration with an online application called IFTTT or door access through mobile phones. (I1, 16.04.2019; I3, 18.04.2019; I5, 25.04.2019; I7, 02.05.2019; PI)

Co-Dependence Barrier

When an intermediary faces the need of requiring additionals or supplements for the radical innovation, a co-dependence barrier is perceived to exist.

Within this sphere, gold partners have mentioned to work with rather large clients. As such, it has been stated that the software is only applicable for a limited amount of doors, which hence requires external software to be added to the purchase (I3, 18.04.2019; I4, 24.04.2019; I5, 25.04.2019; I7, 02.05.2019; PI).

> *"It was initially, small client type setup that we were thinking about. And that's when we found, it doesn't have all of these things." (I5, 25.04.2019, PI)*

It has furthermore been noted that the product's existing ecosystem is perceived to be rather limited. Hence, more integration partners and software providers should be acquired by the CC (I1, 16.04.2019, PI). Further, the need for additional functions, such as the enabling of

phone access to the software or IFTTT applications has been perceived (I3, 18.04.2019; I5, 25.04.2019; PI).

Trialability Barrier

A trialability barrier of adopting a radical innovation occurs if partners perceive a missing opportunity to test the innovation prior to purchase.

Overall, all gold partners have been found to be given the opportunity to test the product in advance and in the majority of instances, the experience has been deemed positive (I1, 16.04.2019; I3, 18.04.2019; I5, 25.04.2019; I7, 02.05.2019; PI). One interviewee was not able to reminisce his experiences made in the trial phase (I4, 24.04.019, PI).

It has also been noted that this trial phase has been used as a source of giving and receiving feedback between the CC and its gold partners. The trial phase allowed gold partners to obtain a greater comprehension of the product, showcasing its strengths and weaknesses (I5, 25.04.2019; I7, 02.05.2019; PI), whereas the latter could be mitigated through product improvements in collaboration with the CC itself (I3, 18.04.2019; I5, 25.04.2019; PI).

> *"And I think that they listen to partners and did the improvements necessary with the next two days, that was the [product line extension of case product]." (I3, 18.04.2019, PI)*

Compatibility Barrier

If the innovation is being perceived as incompatible with previous or existing products, a compatibility barrier arises, hemming the willingness to adopt a radical innovation.

As for compatibility with other innovations, gold partners have complemented its ease of installation with other systems, especially if prior systems are also of the CC's product offering (I1, 16.04.2019; I7, 02.05.2019; PI). With one of the product innovations attributes being the openness of the platform, one gold partners has deemed the product highly compatible (I3, 18.04.2019, PI). However, it has also been noted that the innovation is regarded as a "one-size-fits-it-all" product, which is lacking the flexibility to be installed in existing systems (I7, 02.05.2019, PI).

> *"And the [competitor product] hardware is quite a bit more flexible, there's a lot more different form factors versus where [CC] just has the one model, the one size fits all." (I7, 02.05.2019, PI)*

Amenability Barrier

Amenability describes the capabilities of an innovation being able to be modified to a consumers needs and requirements. If few opportunities for these modifications are

perceived, an amenability barrier arises and hinders the likeliness of a radical innovation to be adopted.

Gold partners have been found to make use of the openness of the platform, utilizing both, the internal and the external software offering accordingly to their customers' requirements and needs (I1, 16.04.2019; I4, 24.04.2019; I5, 25.04.2019; I7, 02.05.2019; PI).

However, it has again bEeN noted that the built-in software offering of the CC, with its limited functionality, is not as open and flexible as competitor offerings. In particular, retrofit activities have been perceived as challenging using the built-in software (I4, 24.04.2019; I7, 02.05.2019; PI).

> *The CC control pieces are limited to 32 doors. So its a product that we typically wouldn't sell. We don't like to sell anything that our customers may grow out of (I3, 18.04.2019, PI)*

Complexity Barrier

The adoption of an innovation is also being stifled if said innovation is being perceived as too complex and difficult to understand.

Overall, the product has been deemed easy to understand by gold partners, stating that its limited functionality with less features result in clear and comprehensible technical specifications and value propositions for its hard and software. These have also been found easily transferable to their respective end-customer. (I1, 16.04.2019; I3, 18.04.2019; I4, 24.05.2019; I5, 25.04.2019; I7, 02.05.2019; PI)

> *[...] it's a very capable product, you know, have less features, which is typically fine for that environment where people use it as an electronic key rather than a true [door] control system. (I1, 16.04.2019, PI)*

Communicability Barrier

Barriers of communicability emerge through the difficulty in sharing the benefits and shortcomings of innovation.

As previously stated, the comprehensibility of the product's value proposition and the technical specifications have been deemed clear and well communicated (I1, 16.04.2019; I3, 18.04.2019; I4, 24.05.2019; I5, 25.04.2019; I7, 02.05.2019; PI). Furthermore, it could be observed that opportunities for the integration of customer feedback are being taken and that those feedbacks are being considered within the products improvements. In case any questions arose, gold partners have deemed the customer service to be of great help in

solving any issues or inquiries, allowing misconceptions to be clarified early on (I1, 16.04.2019; I3, 18.04.2019; I4, 24.04.2019; PI).

> *"So we feel very, very satisfied in the level of support. You know, if there's any issues, CC is always there to help, to guide, to train."* (I1, 16.04.2019, PI)

Functional Risk

Negatively influencing the decision process of adopting a radical innovation is the fear of product dysfunctions or malfunctions. Hence, interviewees have been asked about their experiences with mal- and dysfunctions in regards to this study's radical innovation.

As for the functional capabilities, the hardware of the product has been complimented for its ease of use and openness (I1, 16.04.2019; I3, 18.04.2019; I4, 24.04.2019; I7, 02.05.2019; PI). However, gold partners have also expressed their experience with a rather sluggishly operating hardware, whose speed could be significantly improved (I3, 18.04.2019, PI). Moreover, a lower density has been recommended, whereas the functional capability of controlling two doors at the same time is being lowered to one door while simultaneously lowering the products price accordingly and improving the visual appearance of the system (I4, 24.04.2019, PI).

As previously mentioned, gold partners do also perceive a lack of certain features and functions with regard to its software, for example the ability to lock-up all doors on command and the ability to unlock doors with a mobile phone (I3, 24.04.2019; I7, 02.05.2019; PI). Another gold member described the software as clunky, criticizing the user-interface and experience (I5, 25.04.2019, PI).

> *"So just a flow of going through and uhm, entering in a new badge and creating stuff in there, that's where we've had, uhm, some slight hiccups with a smaller customers. Its, just, it just doesn't necessarily flow too well. It feels kind of, uhm, feels kind of clunky, if you will. A little tedious to get through it sometimes."* (I5, 25.04.2019, PI)

Further, a lack of scalability to large sized enterprises has been criticized (I3, 18.04.2019; I5, 25.04.2019; I7, 02.05.2019; PI). To address a more nuanced variety of customer needs, recommendations have been made to extend the available software options, as described under the section of of value barriers.

As for the fear of mal- or dysfunctions, the initial fear of trying out something new has been brought up by one gold partner.

> *"[...] in Missouri, it's called the show me state. So, so people, people around here, just a little cautious to try new things." (I7, 02.05.2019, PI)*

However, it has also been noted that in case of any negative experiences with mal- or dysfunctions, the CC's customer service has been quick end efficient in solving this issue and provided satisfactory support.

> *"I don't know, off the top of my head. I'm not really able to pick any out. Any, any issues, but yeah, there has been a few, but I'm very quick to bring those devices in and get them repaired and turned around." (I5, 25.04.2019, PI)*

Economic Risk

With investments being perceived as too high and thus a waste of resources, the adoption behavior of consumers is also being impeded.

As for the investment, all of the interviewed gold partners regarded the investment into the chosen innovation as either reasonable or very good (I1, 16.04.2019; I3; 18.04.2019; I4, 24.04.2019; I5, 25.04.2019; I7, 02.05.2019; PI).

> *"The price is fair. Definitely. So I would estimate the investment to be reasonable, uhm, kind of in the middle." (I3, 18.04.2019, PI)*

"The price was a big driving factor." (I4, 24.04.2019, PI)

Usage Barrier

Usage barriers occur when the introduction of the innovation disrupts the customers' current user behavior.

Especially the option to choose between different softwares and thus the openness of the product's platform has been recognized as a influential factor in using the product. One gold partner even used this development to his benefit and created a business around it, developing one of the available, external software options for this product.

> *"I would say that this is a complete, other league than the competitor, because the competitors are all locked down, so we can not do our software with any other competitors. So we're quite happy that CC has this hardware, because otherwise our software, our business wouldn't exist" (I3, 18.04.2019, PI)*

At the same time, however, another notion could be captured throughout the responses of gold partners, whereas no impact on the usage behavior can be noted, as its capabilities with

the platform's openness allow for great opportunities for integration (I1, 16.04.2019; I3, 18.04.2015; PI)

> *"Yeah, I think that it compares, okay. There's a lot of other ones that are IP-based." (I5, 25.04.2019, PI)*

Image Barrier

These barriers arise out of a negative impression, which is associated with the brand, the product itself or the producing country, as example.

One gold partner mentioned that products have been purchased as soon as they had been officially introduced to markets.

> *"And, and that it was made by [CC] and it works. So, whenever it came out, we started buying it immediately." (I4, 24.04.2019, PI)*

Overall, gold partners have been found to emphasize their close relationship with the CC, appreciating the way business is being conducted in collaboration with each gold partner. It has also been noted that gold partners place their trust into the CC, believing in qualitative superiority of products and their performance based on the brand name (I1, 16.04.2019; I3; 18.04.2019; I4, 24.04.2019; I5, 25.04.2019; I7, 02.05.2019; PI).

> *"High quality, extremely high quality as well in presentation to customers. That's why it's absolutely for us, the number one manufacturer we deal with, overall, for sure." (I4, 24.04.2019, PI)*

Furthermore, the highly skilled and knowledgeable customer service has been praised, providing great support with any inquiries (I1, 16.04.2019; I3, 18.04.2019; I4, 24.04.2019; PI).

Organizational Specific Factors

Initially not within the scope of this research, organizational specific factors (see chapter 2.2.2) emerged within the interviews conducted with gold partners.

Correspondingly, the collaborative infrastructure, enabling the accessibility of key resources like personnel both. at the headquarters in Sweden and in each regional area, has been positively evaluated. Moreover, gold partners highly appreciate the collaboration with the CC to create aligned marketing content for end-markets and the opportunity to receive trainings on the products itself (I1, 16.04.2019; I4, 24.04.2019; PI).

> *"We did a marketing video, matter of fact, it's still up on your website, from when we did that first installation." (I1, 16.04.2019, PI)*

"You know, if there's any issues, CC is always there to help, to guide, to train. That's been our big selling point internally, in fact, that we have all the support we could ever need." (I1, 16.04.2019, PI)

Internally, an initial lack of support towards the case product within one gold partners' firm has been brought up.

"The only thing that didn't work was, I think we had some personnel as far as the personnel management, lack of belief." (I1, 16.04.2019, PI)

4.2 Authorized Partners

Value Barrier

Assessing its relative advantage, authorized partners have perceived both advantages and disadvantages to benchmark products. On the one hand, the ease of installation and the benefits of the openness of the platform have been complemented, enabling the choice between a free embedded software with an user-friendly interface or a fee-based external software option (I6, 25.04.2019; I8; 06.05.2019; PI).

On the other hand, the innovation has been regarded as a premium product in a niche market that can not satisfy all customer needs within the market and that is way more expensive than many other competitors (I6, 25.04.2019; I9, 06.05.2019; PI).

"There's a huge Asian product penetration in the market. And the price point ... I mean the difference is just huge. " (I9, 06.05.2019, PI)

"But they do   seem a premium. So it's sort of a more of a niche market. I suppose you could say for people interested in that." (I6, 25.04.2019, PI)

Co-Dependence Barrier

The findings for this barrier show a demand for additions to the case product's soft- and hardware perceived by authorized partners, as some have expressed a need for additional functions and features, e.g. the ability to access a building with a phone as validation (I6, 25.04.2019; I9, 06.05.2019; PI).

"But software part of it was also going to require a little work around running around to make it work." (I9, 06.05.2019, PI)

It   has   furthermore been mentioned that the low density of the door control's own software with 16 doors has been perceived as too low, requiring the utilization of

external software to utilize a higher density (I2, 17.04.2019; I8, 06.05.2019; I9, 06.05.2019; PI).

Trialability Barrier

Two out of four authorized partners have been offered to test the product prior to purchasing it. Overall, the experience has been regarded as positive, as it allowed those partners to obtain a better comprehension of the product and to assess its capabilities and functions for the market's use, as well as to present it to their end-customers which triggered the closing of a deal (I2, 17.04.2019; I8, 06.05.2019; PI).

> *"We got a demo unit from their offices in Kenya which we did you for one our presentations to the client. [...] It helped us land the deal, so positive (Laughs)."* (I8, 06.05.2019, PI)

Compatibility Barrier

In this instance, authorized partners have mentioned the compatibility of the case product with existing innovations (I6, 25.04.2019; I9, 06.05.2019; PI).

> *"Yes, compatibility with other product lines."* (I9, 06.05.2019)

However, competitor softwares have been declared to provide more integrated solutions than that of the CC which is why the product's compatibility has been questioned (I8, 06.05.2019; PI).

> *"We prefer to offer more integrated solutions so it's better to use it together with [competitor product]."* (I8, 06.05.2019, PI)

Amenability Barrier

Authorized partners stated to make use of the CC's internal software, but also of those offered externally by third-party providers. Positively regarded has been the flexibility of being able to scale the innovation from 16 to 32 doors with an additional software. However, it has also been noted that the density of door control is still rather limited to small-to-medium-sized businesses, especially in comparison to competitors (I9, 06.05.2019, PI).

> *"I mean, it depends. It's a small installation, it's a great product, if it's a medium installation, it could be you know, not the best solution. And if it's a large installation, then it's difficult because he has these incumbents with great solutions as well. And they're all fully integrated, and they have a ton of specs. So, you know, it's a little bit more difficult in that space."* (I9, 06.05.2019, PI)

Complexity Barrier

Out of the sample, all interviewees emphasized the product's intuitivity and that it convinces through its ease of use (I2, 17.08.2019; I6, 25.04.2019; I8, 06.05.2019; I9, 06.05.2019; PI). Furthermore, one authorized partner mentioned that difficulties in comprehension may arise for laymen not familiar with that product category (I6, 25.04.2019, PI).

> *"Yeah, only because we've done other card access systems though. But I think if you have no experience, I think you may have some growing pains with it.[...]" (I6, 25.04.2019, PI)*

Communicability Barrier

The transfer of knowledge has mainly been regarded positively, with all interviewees stating that product's features have been clearly communicated to them. Its value proposition has also been regarded as easily transferable to their own customers. (I2, 17.08.2019; I6, 25.04.2019; I8, 06.05.2019; I9, 06.05.2019; PI)

With potential questions, authorized partners have acknowledged the possibility to reach out to customer service in order to receive additional help, which has has been found to be knowledgeable and supportive. (I6, 25.04.2019; I8, 06.06.2019; PI).

> *"Most of the technical specifications were clear, for anything that has not been clear, we have a lot of support from the team that live in Kenya. So okay, any questions we normally have we direct to them, and most of the time they're able to give us the answer." (I8, 06.05.2019, PI)*

On the other hand, however, lacking satisfaction with the customer support performance in one case has been noted, with them not being able to provide timely and constructive feedback on the issue (I9, 06.05.2019, PI). Further, one interviewee, when asked about how satisfactory the current state of communication with the CC is, answered that no room for improvement exists as no further communication is demanded from their side (I6, 25.04.2019, PI).

Functional Risk

In regards to the soft- and hardware of the product, it has been deemed reliable and intuitive, with an easy installation and usage procedure. However, also within this sphere, missing features have been mentioned as well as criticism towards to product's limited functionality (I6, 25.04.2019; I8, 06.05.2019; I9, 06.05.2019; PI).

> *"But overall, reliability is good. Ease of installation is good. Just so that clients can control it from their phones. Because that did come up a lot." (I6, 25.04.2019, PI)*

While overall mixed feedback for the hardware and the software of the innovation could be captured, authorized partners have also mentioned to experience a rather high rate of return for mal- and dysfunctioning products and to some extent issues and conflicts that could not all be solved and mitigated through the CC's partner support system (I9, 05.06.2019, PI).

Economic Risk

Some authorized partners have declared the price to be reasonable, however, in comparison to Asian competitors, a major price difference has been noted (I9, 25.06.2019, PI). One authorized partner also mentioned that the product could be cheaper since it only addresses the needs of small-to-medium-sized businesses (I8, 06.05.2019, PI).

> *"[...] the price could be a bit cheaper for some customers, especially the small and medium enterprises, [...]." (I8, 06.05.2019, PI)*

Image Barrier

Overall, the reputation of the CC is rather positive, with authorized partners believing in the quality and performance capabilities of its service- and product offerings (I2, 17.04.2019; I6, 24.04.2019; I8, 06.05.2019; I9, 06.05.2019; PI). It has also been noted that end-customers, purchasing products from authorized partners, have been found to request specifically the product offerings of the CC (I2, 17.04.2019, PI).

> *"We purchase quite a bit of CC. Our users, they always love CC, video platforms and all the features that can do." (I2, 17.04.2019, PI)*

At the same time, though, it has been mentioned by an authorized partner that the CC should place more emphasis on engaging with end-customers to create a market-pull effect and to raise the end-customers demand for CC products (I8, 06.05.2019, PI).

> *"Well, they may be the only feedback I'd have is maybe CC can engage more in terms of creating awareness on the, on the product. End users and that can make even our pitching better because they can be aware of the product and even when they see the pricing, they understand a bit more. [...]" (I8, 06.05.2019, PI).*

In this regard it also has to be mentioned that dys- and malfunctions with products have occurred that, to some extent, could be mitigated by the CC. However, not all conflicts could be solved, referring to the case of Interviewee 9.

4.3 Cross-Case Comparison of Authorized and Gold Partners

With the in-depth analysis of both authorized and gold partners as a separate entity, a cross-case presentation of all findings shall follow.

Value Barrier

In regards to assessing the relative advantages of radical innovations in comparison to benchmark products, both positive and negative remarks could be captured from authorized and gold partners. However, distinctions arose from the manner how these attributes have been perceived in comparison to competitor products.

Authorized partners have been found to focus more on product-specific advantages, complementing the products' flexibility and openness for multiple softwares, but also its ease of installation and scalability. While gold partners also addressed the product-related advantages, an emphasis on on the novelty of the product itself could also be noted, recognizing that *"it's quite an innovative product"* (I3, 18.04.2019, PI) which *"stands out from the traditional access market"* (I3, 18.04.2019, PI) and is furthermore *"a complete other league than the competitor*" (I3, 18.04.2019, PI).

A similar notion can be detected within the negative responses, whereas no advantage of the radical innovation in comparison to benchmark products can be perceived by partners. As such, authorized partners express negative remarks in regards to the products marketing mix, emphasising on product, price and its placement with target customers. Gold partners, on the other hand, have again been found to focus on the novelty of the product, commenting that the radical innovation is not that novel since *"there's a lot other ones out there that are IP-based"* (I5, 25.04.2019, PI).

Additionally, gold partners identified opportunities for improving the differentiation strategy of the case company. Recommendations were given supposed to aid in obtaining a superior market performance by "expanding the software", gaining more "integration partners" and "build[ing] out that bigger ecosystem" (I1, 16.04.2019) in addition to a "little broader product line" (I3, 18.04.2019, PI) to address all market needs. These kind of insights and recommendations could not be obtained with authorized partners.

Co-Dependence Barrier

Both gold and authorized partners have expressed a need for acquiring external software as a supplement to the hardware in order to utilize the product for their customers. Moreover, both parties also expressed the need for additions to the embedded software, asking for additional features like the ability to use phones to access a building or extended eco-system integrations with other applications like IFTTT.

It could further be seen that gold partners, unlike authorized partners, show a tendency towards perceiving a need for additions and thus co-dependence, as soon as the overall product line and its ecosystem is being regarded. For instance, they have recommended for the CC to expand its software partner and integrator customer base.

"...CC just has the one model, the one size fits all." (I7, 02.05.2019, PI)

"My recommendation would be to expand the software. Integration partners, build out that bigger ecosystem of companies like [Company A]." (I1, 16.04.2019, PI)

Trialability Barrier

Within the sample, all gold partners have been given a product on a trial basis, whereas solely positive remarks about the overall experience have been made.

"We did, we do have a [case product] that has a handwritten series number on it, so you know, we were one of the first ones before it was even commercially available." (I1, 16.04.2019, PI)

As such, it has been mentioned that the trialability phase helped gold partners tremendously with understanding and evaluating the requirements, features and functionalities of both hardware and embedded software as well as providing feedback to the CC. Authorized partners, on the other hand, have only limited experience with new releases prior to purchase, as those partners have not in all cases been granted a trial product.

"And there's no pre sales or there's ... there's no local presence. So we had no possibility of testing it." (I9, 06.05.2019, PI)

Nonetheless, those experienced with the product prior to release have also responded positively, suggesting that it greatly supported in understanding the product and selling it to their respective customers.

Compatibility Barrier

In this case, both authorized and gold partners have noted that the radical innovation presented is compatible with other innovations and products.

"Yes, compatibility with other product lines." (I9, 06.05.2019, PI)

"...because it's an open platform controller, so we are able to use it with (Company X) which is also our partner. Yeah that's part of the reason." (I8, 06.05.2019, PI)

Both parties have further compared that very product to competitive products and their interaction capabilities with other products in an ecosystem, e.g. by labelling the case product as a niche product.

Amenability Barrier

Within this sphere, gold and authorized partners have stated to use a combination of the internal and external software for different customers, whereas both positive and negative features about the software has been provided. The product's limited functionality with regards to controllable doors has been mainly criticized by both parties in this context.

Complexity Barrier

Both parties deemed the product comprehensible enough. Suggestions or recommendations for improvements were not made on either side.

"...it works for the customers, because it's simple." (I4, 24.05.2019, PI)

"I think it is, I think it's fairly clear." (I9, 06.05.2019, PI)

Only one authorized partner mentioned, that difficulties in the comprehensibility of the product might arise with layman's that are neither knowledgeable nor experts in the area of door access products.

"Yeah, only because we've done other card access systems though. But I think if you have no experience, I think you may have some growing pains with it. I don't know." (I6, 25.04.2019, PI)

Communicability Barrier

Whereas gold partners have been found to be quite open to communication and providing input as to how the product could be improved, an authorized partner mentioned that he is satisfied with the status quo and does not "want more communication" (I6, 25.04.2019, PI).

When it comes to technical inquiries where tech assistance through customer service is required, both parties have responded quite positively, complementing the service provided to be knowledgeable and quite supportive for any kind of inquiry. Even though both parties

made positive remarks about the product's communicability, authorized partners encountered a situation were their issue with regards to the product could not be solved by the CC's tech support, leaving the case unsolved for a few months.

Functional Risk

Issues in regards to the products performance and quality could be noted by both partners, and again concerned similar aspects such as the perceived need for additions to the products soft- and hardware. What differentiates both cases however, is that for gold partners, such issues could be mitigated through quick support through the CC's customer support in all cases. Contrary to this, however, one authorized partner did mention a rather high rate-of-return for dys- and malfunctioning products though, which could not be correctified or solved through customer support.

Gold partners in this regard mention a decreasing fear due to the trust placed in the customer service support of the CC, which seems to mitigate the fear of mal- and dysfunctions, even though a fear of trying new, radical innovations is existent. Authorized partners did not discuss their standpoint on this.

> *"Anytime we try something new, you know we're, we're, you know, in Missouri, it's called the show me state. So, so people, people around here, just a little cautious to try new things. So I would say there was some of that."* (I9, 06.05.2019, PI)

Economic Risk

> *"The price was a big driving factor."* (I4, 24.04.2019, PI)

> *"Actually, I think the [case product] is a very savvy priced [door] control because it is all integrated into a single unit, including the software that runs it."* (I7, 02.05.2019, PI)

Whereas all gold partners deemed the investment into the radical innovation as reasonable, authorized partners could be seen to be non-compliant. Whereas some of the authorized partners agreed with the notion of gold partners, some deemed the investment into the innovation as too high.

> *"There are definitely more economic solutions out there from Asia."* (I9, 06.05.2019, PI)

Usage Barrier

In the context of this study, no data describing the attitude of authorized partners towards usage barriers could emerge. However, gold partners could distinct a change in behavior due to the openness of the product which provided opportunity for one of the interviewees to create a new business with the development of its own software for that product innovation.

> *"...because the competitors are all locked down, so we can not do our software with any other competitors. So we're quite happy that CC has this hardware, because otherwise our software, our business wouldn't exist." (I3, 18.04.2019, PI)*

Image Barrier

In both cases, the brand and image of the CC have been regarded quite positively. Overall, it could be noted, however, that gold partners deemed the brand image to be even more valuable, showcasing high levels of trust and believe into the performance and quality of new products.

> *"We don't want to go with a company that cannot support their own product and their answers. Well, I don't know where I've been down that road. And I've actually dropped companies because of that. But the quality, the looks, he ability for them to just function and keep functioning for way over the working period. And the ability of the product to supply superior. Video and functionality is why I go with them." (I3, 02.05.2019, PI)*

Furthermore, gold partners have shown to be highly appreciative of the service provided and the training received for new product developments in in-house academies of the CC. They have also emphasized on the great relationship they share with the CC.

> *"I mean, we are huge fans of CC." (I7, 02.05.2019, PI)*

While authorized partners also share the sentiment of interacting with a trustworthy and high quality manufacturer, their feedback can be deemed more reserved and rational.

> *"So, quality performance, typically, they are up there, high quality, you know. They perform as expected." (I6, 25.04.2019, PI)*

Even though conflicts in form of mal- and dysfunctions have occurred on both sides, the CC's reputation still seems to mitigate any worries about functional risks.

> *"And I had a good relationship with CC for a while. They are product-based, so I am open to try out anything from them."* (I2, 17.04.2018, PI)

However, as previously mentioned, the conflict described within Interview 9 and the authorized segment could not be solved. At the same time, authorized partners do see a chance for creating more awareness with the end-customer and stress that the CC should engage more with end-customers to create a market-pull.

> *"Well, they may be the only feedback I'd have is maybe CC can engage more in terms of creating awareness on the, on the product. End users and that can make even our pitching better because they can be aware of the product and even when they see the pricing, they understand a bit more. So for me that will be the only feedback to create more awareness on the product to the end-user especially."* (I8, 06.05.2019, PI)

Organization Specific Factors

Even though organization specific factors of innovation adoption (see chapter 2) were not intended to be examined within this study, findings in this area arose through the conducted interviews, however only for fold partners.

As such, specific factors addressing the internal sphere of organizations have been mentioned, in particular the lacking belief in the product coming from employees of one gold partner, as well as the tight-knit collaboration and synchronized marketing content experienced by other gold partners.

5. Discussion

5.1 In-case-analyses

By separately investigating each barrier and the experiences gold and authorized partners have made in this regard, the following analysis shall define which of the barriers have been encountered by the respective customer group. These in-case analyses shall form the foundation for the subsequent analysis of cross-case patterns, aiming at assessing the impact of relationship quality on adoption barrier evaluation.

5.1.1 Gold Partners

Value Barrier

Overall, gold partners have identified certain weaknesses and disadvantages of the case product in comparison to competitors, marking the occurence of value barriers in their adoption experience. The novelty of the product has further been evaluated as mediocre, being expressed through the comparison of it to other IP-based products, for instance. Due to these reasons, a value barrier exists for gold partners.

Co-dependence Barrier

Gold partners have perceived the need for certain additions to the soft- and hardware of the product, indicating the product's incompleteness and hence the existence of co-dependence barriers.

> *"Like, kind of or semi-satisfied. Ehm, there's a lot of other functions that they could add." (I5, 25.04.2019)*

Trialability Barrier

It becomes evident that no trialability barrier has been encountered by gold partners. Each interviewee within the gold case has been offered to try the product prior to purchase and has made use of that. Some customers have even been offered to try alpha- and beta-versions of the product prior to its launch. The fact that this pre-test enabled the customers to fully understand the product specifications, as well as to provide feedback on issues they have encountered while testing the product, further supports the absence of trialability barriers.

> *"Yeah, like I said, we do a lot of alpha and beta testing. Because even, even if we're warned that it may have bugs in it, and that may not function properly, we've rarely run across that case where even the alpha or beta products come out and they have a better quality than some of your competitors that have been on the market for years." (I1, 16.04.2019, PI)*

Compatibility Barrier

The inherent compatibility of the product with other products and innovations lies in its open nature. From most of the statements, it can be assumed that the compatibility of the product has been clearly accepted. However, considering that the product has been perceived as only providing one solution with a less flexible built-in software than competitor products as well as a need for several additions, its compatibility with other products is questionable. Hence, compatibility barriers could be detected.

Amenability Barrier

As the product has been declared to only offer limited openness to adapt to gold partner's larger customers and their requirements, an amenability barrier can be detected. The fact that gold partners have placed an emphasis on recommending the expansion of the product's ecosystem in terms product line and integration partners further emphasizes the perceived absence of the product's ability to adhere to customers' requirements, despite the majority of gold partners making use of both, the internal and external software.

Complexity Barrier

With no exception, gold partners have deemed the product to be easy to use and install and have several times outlined its simplicity. For this reason, it can be determined that no complexity barrier has been encountered by gold partners.

Communicability Barrier

Just as for the comprehension of the product's characteristics, its technical specifications as well as its value proposition could be easily communicated between the gold partners and the CC. Further, transferring knowledge on the product to the partners' end-customers has been also considered clear and simple, hence not providing any evidence for the encounter of communicability barriers.

Functional Risk

Even though a general scepticism has been mentioned by gold partners, it could be seen that overall the trust into the quality and into the brand is quite high, enabling and exacerbating the adoption rate of innovations.

Furthermore, former customer experiences, whereas faulty products have been quickly replaced, both in products and financially for any labor expenses incurred, mitigated the perceived risk of mal- or dysfunctions.
Nonetheless, the perceived fear of dysfunctions mentioned by one of the interviewees supports the existence of functional barriers for gold partner

Economic Risk

No economic risk has been perceived by gold partners, with each interviewee declaring the investment into the case product as reasonable. Considering that the company operates in a premium price segment, this positive assessment of the product's price by gold partners further proves the absence of economic barriers.

Usage Barrier

In contradiction to the literature, a change in behaviour provoked by the product's introduction did not represent a barrier but an enabler of new business opportunities. Due to the openness of the product, software developer partners took the chance of developing their own software for the product, which today forms the basis of their business. Accordingly, despite the potential triggering of a change of usage behavior, it is not perceived hindering but helpful. Hence, the barrier of usage has been encountered, however provoking positive effects for the gold partner affected.

Image Barrier

Based on conducted interviews, it can be assured that no image barriers have been encountered by gold partners. The interviewees emotional and highly positive feedback supports the existence of their high level of trust in and satisfaction with the CC. Even though gold partners have made negative experiences with products, the CC is nonetheless positively regarded, as these conflicts could be solved accordingly.

> *"I mean, we are huge fans of CC." (I7, 02.05.2019, PI)*

By not only praising the products, but also the CC's experience and customer support, including trainings, gold partners showcase their familiarity with the company and their committed relationship, which has endured for several years in all cases.

> *"So my company, we pride ourselves, because we have a museum of CC products. And they have handwritten serial numbers on them. So they were the first products ever to be made." (I1, 16.04.2019, PI)*

Organizational Specific Factors - Social, Cultural and Infrastructure

Surprisingly, internal resistance towards the innovation could be noted in one of the interviewed gold cases in form of lacking support from employees. This occurrence, whereas employees do not believe in an innovation developed by another firm, has been coined the not-invented-here syndrome by Burcharth, Knudsen and Søndergaard (2014). On the other hand, however, the collaborative infrastructure between the CC and the interviewed gold partners emerged in all interviews, and is expressed through regular knowledge and resource exchange, e.g. through trainings, as well as other forms of collaboration. Bearing in mind this intensive collaboration and the affiliation's high relationship quality, the occurrence of the not-invented-here syndrome becomes even more surprising, as trust should combat the emergence of such negative influences. As this study's data can not answer this contradiction, further research would be recommendable.

Summary of in-case analysis - Gold

In total, gold partners encountered six out of 13 adoption barriers presented by Joachim, Spieth & Heidenreich (2018). Two further barriers, namely usage and infrastructure-related aspects, have a positive impact on adoption behavior while the remaining six barriers encountered were negatively perceived.

The high level of commitment identified within this customer group (Appendix B+ C) has been particularly confirmed through the interviewees' detailed and rich feedback, underpinning their clear intention of contributing to the improvement of the offerings of the CC, which suggests that they are interested in a long-term, committed relationship, as defined by Palmatier et al. (2006).

This finding is further in line with academia, coining commitment to be the most crucial relational mediator for the achievement of customer loyalty. Customer loyalty has been deemed a main outcome of relationship quality and can be expected to contribute to more committed adoption behavior, which also implies a smaller negative impact of adoption barriers leading to resistance towards innovations.

5.1.2 Authorized Partner

Value Barrier

The overall positive remarks made from partners in the authorized segment have been weakened by remarks claiming that the product can be considered a premium product within a niche market, hence emphasizing that it does not meet the general market demand in comparison to other products. Further, the price and flexibility of the product in comparison to competitors have been negatively perceived. For this reason, a value barrier applicable for authorized partners can be identified.

Co-Dependence Barrier

Authorized partners have demanded certain additions to the existing product's soft- and hardware, thus confirming the existence of co-dependence barriers as the product is not be considered as fully complete by them.

Trialability Barrier

As only half of the interviewees have been able to test the product prior to its purchase, a trialability error could be detected for authorized partners. With the trial phase not being offered to all of them, authorized partners were not always able to profit from the opportunity of providing feedback that can be used for the improvement of the product.

Further, they were lacking the chance to experience and understand the product prior to purchase, as well as to present it to their own customers.

Compatibility Barrier

The product's compatibility with existing innovations has been confirmed by some authorized partners. However, another interviewee has emphasized a preference of using competitor products as they provide more integrated alternatives. Hence, it can be assumed that compatibility barriers have been encountered by authorized partners.

Amenability Barrier

As both options of using the built-in as well as third-party software have been made use of, authorized partners did, to some extent, perceive the product to be amenable to their customer's requirements. However, some interviewees have mentioned operational issues encountered in adjusting the product to larger project setups. Hence, amenability barriers could be detected.

Complexity Barrier

Overall, the products intuitive setup and installation have been evaluated as easily comprehensible, creating the assumption that no complexity barriers could be perceived.

> *"Yeah. It's easy to use. And that's, that's the main thing when it comes to the user. They don't like stuff that's complicated." (I2, 17.04.2019, PI)*

Nonetheless, with one interviewee doubting whether the product is understandable to people with less knowledge in the field, complexity barriers can be defined.

Communicability Barrier

No barriers in comprehending the product could be detected for authorized partners, however they have mentioned doubts with regards to the ease of communicating its features through the use of language. Despite the common perception of having purchased an easy-to-use and install product, shortcomings of the product could not always be communicated appropriately, as indicated by interviewee 9. Hence, authorized partners did not evaluate the product to be fully comprehensible, marking the occurrence of communicability barriers.

Functional Risk

As interviewed authorized partners have stated a rather high number of returned products due to malfunctions, functional barriers could be observed. Despite positive remarks that have been made with regards to the product's hardware and software functionality, the amount of criticism expressed prevailed. As the customer service has not always been able

to solve the issues, the likeness of authorized partners to fear product mal- and dysfunctions has been increased.

Economic Risk

With half of the interviewees in the authorized segment perceiving the price as unreasonable, an economic barrier can be registered for this case.

Image Barrier

At first, considering the authorized partners' positive opinion on the CC's image, no image barrier could be detected. This indicates sufficient levels of trust and satisfaction. Nonetheless, as negative remarks have been made regarding the popularity of the CC amongst end-customers, it has been mentioned by an authorized partner that the CC should place more emphasis on engaging with end-customers, which can be interpreted as a call for the creation of a market-pull effect to raise the end-customers' demand for CC's products. As lacking awareness speaks against a strong brand image, this observation does provide evidence for the existence of image barriers.A further supporting factor for this is provided by the negative experience made by interviewee 9 with regard to the solving of an encountered conflict, which is expected to have negatively impacted the authorized partner's view of the CC's image.

Summary of in-case analysis - Authorized

Authorized partners have encountered all of the presented barriers, with a total of 10 out of 10. The high amount of encountered barriers is the basis for the assumption that low relationship quality may negatively impact the occurrence of adoption barriers. However, this assumption can only be confirmed in the upcoming cross-case analysis, holding the results of high relationship quality customers against those of authorized partners.

5.2 Cross-case Comparison: Analysis of Findings

For better comprehensibility and as an introduction to the analysis, the following table summarizes which adoption barriers have been encountered by the respective partner group and further lists commonalities and differences identified between both cases. Out of these observations on commonalities and differences in the adoption barrier evaluation of authorized and gold partners, an assertion about the influence of relationship quality on adoption barriers within radical innovation adoption is expected to be derived. Hence, the focus of upcoming cross-case analysis lies in interpreting such variations. The findings will be formulated into proposals which will eventually be confirmed or rejected based on given primary and secondary data.

Legend
● Barrier encountered/arisen   ● Barrier not encountered/arisen   ● Not applicable, did not emerge

Barrier Type	G	A	Similarities	Differences	
				Gold	**Authorized**
Value	●	●	Consider product-specific advantages and disadvantages in comparison to competitors	Also consider the novelty of innovation and market insights→ more holistic view	Recognize solely product-specific advantages and disadvantages
Co-Dependence	●	●	Requiring additional software and features	Provide holistic feedback on product could be improved e.g. by expanding the software collaborations for a bigger portfolio of external softwares	
Trialability	●	●	Positive perception of trialability as it enables better comprehensibility	Were able to give feedback to CC based on trial experience and get to understand product	Could not always profit from the benefits of trying the product prior to purchase
				Always offered to try product prior to purchase or launch	Not always offered to try product, and if, only prior to purchase
Compatibility	●	●	Perceived incompatibility with existing innovations due to limited functionality of the product		
Amenability	●	●	Both using external as well as internal software mostly		
			Both have perceived the limited functionality of the integrated software to be hindering in adapting to customers' requirements		
Complexity	●	●	Perceived as fully comprehensible	Fully positive perception of comprehensibility of product	Comprehensibility issues for laymans perceived
Communica-bility	●	●	Both overall happy with communicability of	Fully positive perception of tech	Only partly see the benefit of tech support as

	🟩	🟥	product's benefits	support	shortcomings with regards to the product couldn't always been solved through the use of language
					Have stated to not want "more communication"
Functional Risk	🟥	🟥	Conflicts, mal- and dysfunctions occurred, increasing the likeliness of fear to occur	Any conflicts, mal- or dysfunctions could be solved and thus mitigated by CC	High rate of product returns and dysfunctions occurred could only partially be solved/mitigated by CC
Economic	🟩	🟥	Price believed to be reasonable	Price perceived as reasonable in all cases	Some interviewees believe that the investment into the product is not reasonable
Usage	🟥	🟨		Product can be behavior changing due to its openness and the possibility of e.g. new software creation	No data emerged on whether or whether not usage barriers have been encountered
Image	🟩	🟥	Positive perception of brand in both cases	Particularly positive, with enthusiastic reflections on their relationship with CC, e.g. hand-written serial number	Mention that awareness is lacking at the side of the end-customer
	🟩	🟥			Not all conflicts could be solving, raising the assumption that the CC's image has been negatively affected
Infrastructure	🟩	🟨		Access to key personnel, collaboration and training complemented	
Social & Culture	🟥	🟨		Not-Invented-Here syndrome in form of lacking employee support	

Table 6: Cross-Case comparison of encountered adoption barriers

5.2.1 Derived Propositions

Observation: Value, co-dependence, amenability, compatibility barriers and functional risks have been encountered by both parties.

> *Proposition 1: Value, co-dependence, amenability, compatibility barriers and functional risk are not dependent from relationship quality as the adoption behavior of both parties does not differ in this context.*

In general, new product developments are being regarded as risky, whereas end-consumers see little to no advantage in comparison to benchmark products (Barczak, Bello & Wallace, 1992). However, with gold and authorized partners acting as surrogate buyers, both parties are responsible for the collection and processing of information on behalf of their respective end-customers, implying that a more in-depth understanding on the marketspace of door control with various benchmark products and the introduced product innovation of this study is required on their part (Aggarwal, Cha & Wilemon, 1998). Hence, partners are supposed to be experts in their field of business.

Within their role, both, gold and authorized partners can be expected to make evaluations of radical innovations based on the products capabilities and the needs and requirements on behalf of their end-customers. This can be achieved through the acquisition of readily available information, but also through information given to surrogate buyers through special occasions, e. g. product trainings, trade shows or corporate journals and newsletters. Through this specialized information, authorized and gold partners are given an advantage to assessing a product's value (also in comparison to competitors) to convey the benefits and relevant information to their end-customer as potential adopters (Aggarwal, Cha & Wilemon, 1998), but also to make decisions upon how to best amend a product to their respective end-customers needs. Hence, their expertise in the area can again be deemed the reason as to why value, co-dependence, compatibility and amenability barriers have similar outcomes for both categorizations.

As for functional risks, it is reasonable for partners to question the functionality and fear the occurrence of mal- and dysfunctions, considering no prior use of history exists (Aggarwal, Cha & Wilemon, 1998). However, both authorized and gold partners have seemed to associate the innovations levels of performance with the positive image of the firm, relying on its reputation for providing high performance and quality products. Thus, high levels of trust can be noted in the brand image, which, in addition to positive customer experiences with knowledgeable customer service made, seems to mitigate the fears of product mal- and dysfunction for the radical innovation within both categorizations to some extent.

For above mentioned reasons, it becomes obvious that surrogate buyers, independently from their respective relationship quality, are responsible for the evaluation of the product's

advantage in comparison to competitors (value barrier), as well as the careful examination of its functionality and completeness (co-dependence barrier and functional risk) to perfectly adapt the solution to their end-customers' requirements and their pre-existing ecosystem (compatibility and amenability barrier).

Observation: The categories of usage barrier as well as organizational factors did only emerge in the case of gold partners.

> *Proposition 2a: Higher relationship quality increases the chance for organizational factors to emerge.*

> *Proposition 2b: Higher relationship quality increases the chance of triggering a change in user behavior.*

Overall, it has been noted that within interviews with gold partners, the importance of infrastructure has surfaced, whereas investments in marketing are leveraged through collaboration to gain advantages over competition, showcasing a higher commitment and engagement between the CC and the gold partner. It could also be noted that on an organizational level, adverse effects, such as social and cultural barriers in the form of lacking support through gold partner's employees have been mentioned (Burcharth, Knudsen & Søndergaard, 2014). Further, usage barriers have emerged for gold partners, however with a positive effect.

It is questionable why these factors have not surfaced with the categorization of authorized partners. Data could not have emerged due to their perceived unimportance to authorized partners or simply due to the reason that these factors have not been the focal point of this study and hence were not integrated in the data collection process. However, academia provides an explanation for this observation.

Within the different categories of partnership tiers, gold partners have been found to be more committed to upholding beneficiary relationships, ensuring a more tight-knit collaboration between all parties involved in comparison to authorized partners. As such, a higher devotion of gold partners to commit to a business relationship exists, which is expressed through e.g. frequent and personal communication with the CC. Furthermore, unlike the customer group of authorized partners, gold partners have shown their willingness and commitment to testing products prior to their launch, with some interviewees testing alpha- and beta-versions of the case product. With these trial phases allowing experimentation and the identification of strengths and weaknesses, first hands-on experiences can be generated. Hence, gold partners in general are introduced to the novelty of the product at an earlier stage.

Moreover, gold partners have been shown to place a higher amount of trust in the CC, deeming even the trial products to be of higher quality in comparison to benchmark products.

> *"Because even, even if we're warned that it may have bugs in it, and that may not function properly, we've rarely run across that case where even the alpha or beta products come out and they have a better quality than some of your competitors that have been on the market for years." (I1, 16.04.2019, PI)*
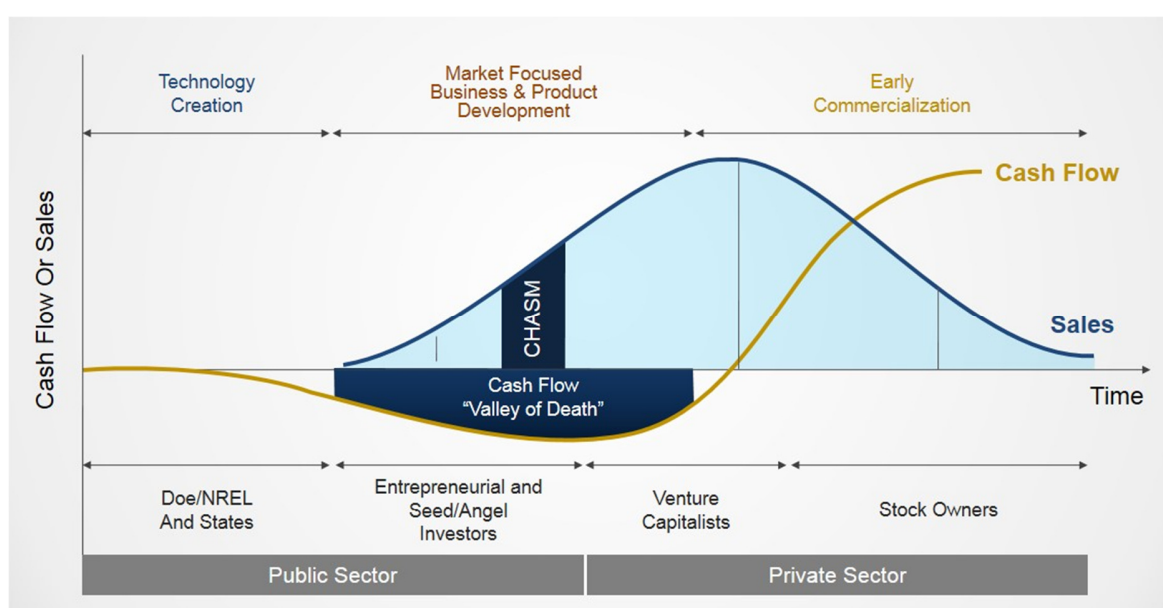
Figure 9: Adoption Lifecycle (source: slidemodel.com)

This could imply that gold partners, being exposed to novel radical innovations at an earlier stage in comparison to authorized partners, make the chasm of accepting a radical innovation significantly earlier (see figure 9), exacerbating the adoption rate of the innovation within markets towards maturity (see figure 10).
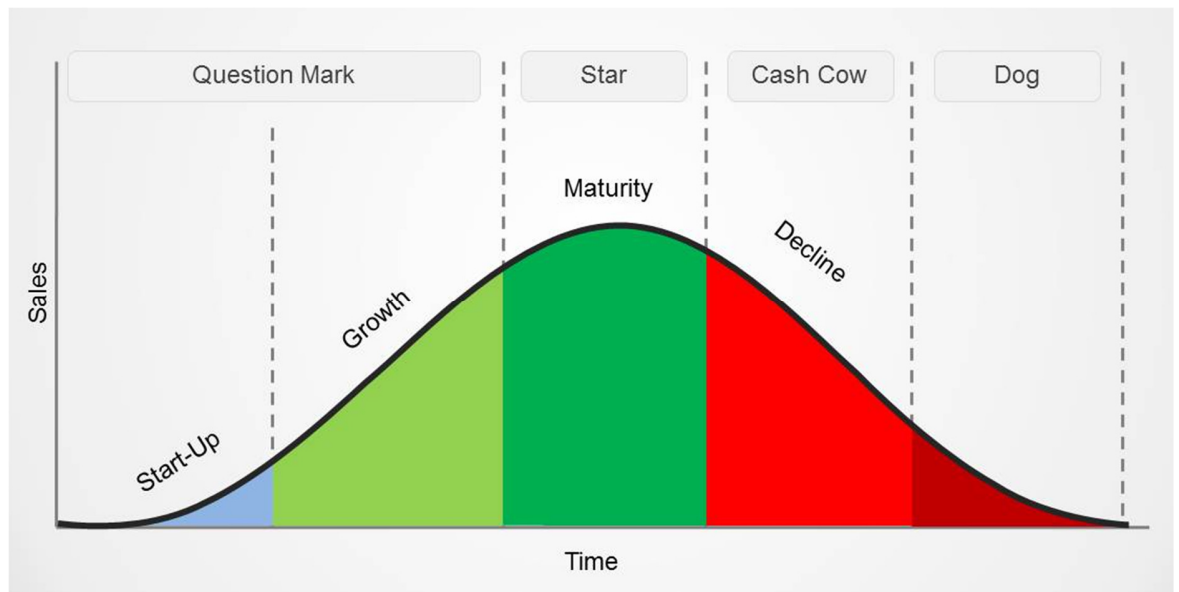
Figure 10: Product Lifecycle (source: slidemodel.com)

As the early adopters within the market, the gold partners could then be the drivers of the change within markets, leading to the general acceptance of the radical innovation as the new market standard (Aggarwal, Cha & Wilemon, 1998). Following, authorized partners adopt the radical innovation at a later stage, representing the early to late majority, whereas the general market has already shifted towards accepting the radical innovation. Hence, authorized partners at that stage do not perceive a change in behavior initiated by the radical innovation anymore, as these changes have already been widely accepted. Nonetheless, it has to be emphasized that no data on usage behavior of authorized partners did emerge from the interviews within this study, hence outlining the need for confirmation of this partly validated assumption through the application of primary data.

Furthermore, as stated by (Palmatier et al., 2006), higher levels of trust of a customer imply the organization's belief in the seller's integrity and capabilities. Applying this fact to this case study, it becomes evident why partners with a higher relationship quality are perceived to be more open towards accepting external influencers on their behavior, coming from their trusted supplier.

As for the emergence of organizational factors and the importance of a collaborative infrastructure to gold partners, this could be explained by the establishment and maintenance of a more committed and trustworthy relationship between the gold partners and the CC that persists. At the same time, a more tight-knit collaboration allows for points of corrosion, whereas negative impacts can be perceived. This could explain as to why simultaneously negative barriers, such as the not-invented-here syndrome with lacking

employee support emerged within the interviews (Burcharth, Knudsen & Søndergaard, 2014). It has to be noted again, however, that this tentative finding is subject to further research as no primary data on the occurrence of organizational factors for authorized partners has emerged, leaving their evaluation of this factor unclear.

Observation: Image, Trialability, complexity, communicability and economic barriers only apply for authorized partners.

> *Proposition 3: Image, trialability, complexity, communicability and economic barriers and risks do depend on relationship quality, with a higher chance of encountering them with decreasing relationship quality.*

Within this study (see appendix B + C), the relationship quality of the categorization of authorized partners has been shown to be of lower levels in comparison to gold partners. Following, a lower commitment from authorized partners towards upholding a relationship has been proven. With a more loose collaboration in comparison to gold partners, authorized partners can be deemed to lack information in varied behavioral contexts to generate accurate predictions on the behavior of the CC, further spurring a lower commitment to the relationship (Palmatier et al., 2006) and enabling a vicious circle that concurrently keeps the relationship quality low if none of the partners take the first step for improving the relationship itself.

The encountering of above barriers and risks by authorized partners ist expected to be mainly driven by trialability and communicability barriers, causing the effects of lacking comprehension of the product and the absent willingness to invest in it.

As for trialability, those able to test the product prior to purchase as well as those that have not been given that opportunity have experienced an information asymmetry, whereas benefits and limitations of the product are not efficiently communicated. As a result, limited capability of authorized partners to comprehend the product can be expected due to potential misconceptions. This phenomenon is further discussed in academia, with researchers arguing that complex technologies and their attributes need to be fully understood to avoid misunderstandings related to their complex nature. The endeavour of offering trial phases provides a suitable method for reducing the perceived risk by partners and hence facilitates a positive adoption barrier evaluation (Banerjee, Wei & Ma, 2012). It has been found that product trials have furthermore the positive effect of reducing "anxiety-related affective responses such as frustration and fear" (Soscia, Arbore & Hofacker, 2011).

On the other hand, limited communication frequency and the prevalence of impersonal communication channels between the authorized and gold partners could be identified within previous interim analysis (Appendix B + C). Literature has shown that communication represents a crucial relationship-building strategy that influences the

outcomes of B2B-relationships, e.g. adoption behavior (Murphy & Sashi, 2018; Palmatier et al., 2006). It supports the settling of conflicts and the alignment of goals (Morgan & Hunt, 1994), which however is not possible to the same extent for authorized partners, recording smaller interaction frequency as well as a smaller variety of communication channels being used. With communicability also affecting the tangibility of the product's benefits (Ram, 1987), these circumstances again imply the limited ability of authorized partners to acquire and process information for obtaining superior market knowledge, in comparison to authorized partners (Aggarwal, Cha & Wilemon, 1998).

For above reasons, gold partners were able to make a more profound evaluation of the overall product, whereas authorized partners have been restricted in their evaluation to impressions and post-purchase experiences, where trial opportunities have not always been given. Thus, authorized partners tended to be less convinced of the products performance and quality, decreasing their willingness to invest into that innovation, thus explaining the occurrence of economic barriers.

Moreover, Catalini and Tucker (2016) argue that if natural early adopters are "delayed relative to their peers", their behavior towards adopting an innovation is negatively impeded, leading towards the tendency to reject an innovation. It has furthermore been suggested that this tendency generates spillovers to other adopters who are not natural early adopters, negatively impacting the rest of the adoption chain.

These findings suggest that slight changes in the availability of technology within trial phases might have a lasting effect on the adoption lifecycle of innovations throughout a network, improving the ability of surrogate buyers to comprehend the product and their willingness to invest into it independently from its market price (complexity and economic barriers).

As for image barriers, a connection to the antecedents of relationship length and interaction frequency could be drawn. It could be noted that all interviewed partners already have a long established relationship. On average authorized partners have been seen to interact within an affiliation for 5 ½ years, whereas gold partners have been cooperating even longer with the CC, on average for approximately 13 years.

Palmatier et al. (2006, p.140) suggests that relationship length and the interaction frequency "provide trading partners with more behavioral information in varied contexts, which allows for better predictions that should increase each party's confidence in its partners behavior". Thus, the closer partners interact and engage within a network, the more interwoven they become over time, increasing the accuracy of these behavioral predictions and furthermore the confidence placed within this relationship. With greater confidence within relationships

comes increased trust (Das & Teng, 1998), which can only exist when a party has confidence in the partners reliability and integrity (Morgan & Hunt, 1994).

However, Palmatier et al. (2006) note that with increasing conflicts, partners tend to have a weaker confidence in the long-term orientation and maintenance of a relationship. Within this study, it could be noted that all conflicts on the gold partners sphere could be resolved, further increasing the perceived reliability of the CC and strengthening the confidence in the relationship. Yet, on the authorized partner's side, not all conflicts could be solved or mitigated, explaining the lesser commitment and engagement encountered by authorized partners within this study as trust and reliability is concurrently lower, negatively impacting the partners's perception of the CC's image. As this factor however does not consider the perceived need for awareness-increasing measures with regards to the company's brand, the topic of image barriers in connection to lower relationship partnerships could be further elaborated and hence is subject to further research.

Observation: Authorized partners have encountered more adoption barriers than gold partners.

> *Proposition 4: Surrogate buyers with a lower relationship quality are more vulnerable to adoption barriers.*

As noted, authorized partners have encountered a number of 10 out of 10 adoption barriers with a negative impact on their operations, while gold partners have been found to negatively evaluate only six out of 13 adoption barriers, with two further barriers (usage and infrastructure) being deemed positive. As a result, customers with a lower relationship quality have been found to be more vulnerable to adoption barriers within the scope of this study. As stated previously, an impact of relationship quality on adoption barriers could be validated within preceded in-case-analyses. Varying adoption behavior between the two researched cases, meaning barriers that have only been encountered by one of two parties, further indicate such an impact, as they prove that different types of relationships trigger distinct attitudes towards adoption barriers.

Referring to literature of Palmatier et al. (2006), it becomes evident that with increased levels of trust, commitment and satisfaction, the partners' interest in upholding a long-term relationship is strengthened. Hence it can be expected that in case of issues occurring throughout the adoption process, partners with a satisfactory relationship history are more likely to discount such incidents, as they truly believe in the integrity and reliability of their supplier. Considering the evidence provided within this explorative research, this finding could be confirmed.

5.2.2 Further Findings

Observation: More functional than psychological product-specific barriers have been encountered in total.

Proposition 5: Functional, product-specific adoption barriers are more typical to appear in radical innovation adoption.

As proposed by Joachim, Spieth & Heidenreich (2018), adoption barriers can be categorized based on their nature, with some representing psychological barriers that are perceived differently based on the judging organization's values and norms, and some being categorized as functional risks, solely depending on the adopted product's characteristics and performance itself. It becomes evident that those barriers encountered by both parties, with the exception of functional risks, all belong to the second category of functional barriers. This notion could suggest that relationship quality can be expected to have a smaller impact on functional barriers, in contrast to psychological barriers which depend more on the social constructs within that affiliation. Further, it implies that functional barriers are more likely to occur, independently from the respective relationship quality within the buyer-seller relationship.

This phenomenon can be explained by applying literature on science-based companies and innovations provided by Fleming and Sorenson (2004). Considering the radicalness of the case product, with it being a mixture of a complex, engineering-driven product and a commodity good, it can hence be considered a so-called highly coupled product, describing products with a variety of inherent, complementary components that interact to a high extent to enable the product's functionality (Fleming & Sorenson, 2004), e.g. interacting hard- and software components. However, several researchers have outlined that such highly coupled products are very sensitive to minor changes, representing much more unpredictable and uncertain innovations than those with a lower degree of coupling and smaller complexity (Fleming & Sorenson, 2004; Uhl-Bien, Marion & McKelvey, 2007).

It consequently becomes evident why product-specific barriers related to this product's functionality and radicalness have been encountered, , considering its high degree of coupling that increases the chance of errors to occur under varying application scenarios. The occurrence of this phenomena hence confirms existent literature on the management of radical, complex innovations.

5.3 Summary and Visualization of Analysis

With the general impact of relationship quality on adoption behavior in B2B relationships being confirmed through variations in the evaluation of each adoption barrier made by both case groups , the analysis of this explorative study further provided five propositions that indicate how this impact takes place.

Overall, it could be noted that with the exception of one authorized partner (I9, 06.05.2019, PI), gold partners have provided more in-depth and constructive feedback, further offering a variety of suggestions on how the radical innovation could be improved. This observation again emphasized the higher level of commitment that is typical for buyers with a higher relationship quality, as they intend to obtain a long-term relationship that is of mutual benefit (Palmatier et al., 2006).

As a summary of above findings, the following model (see figure 11) depicts how relationship quality impacts the different product-specific adoption barriers, as well as those organizational adoption barriers that have emerged throughout the research.
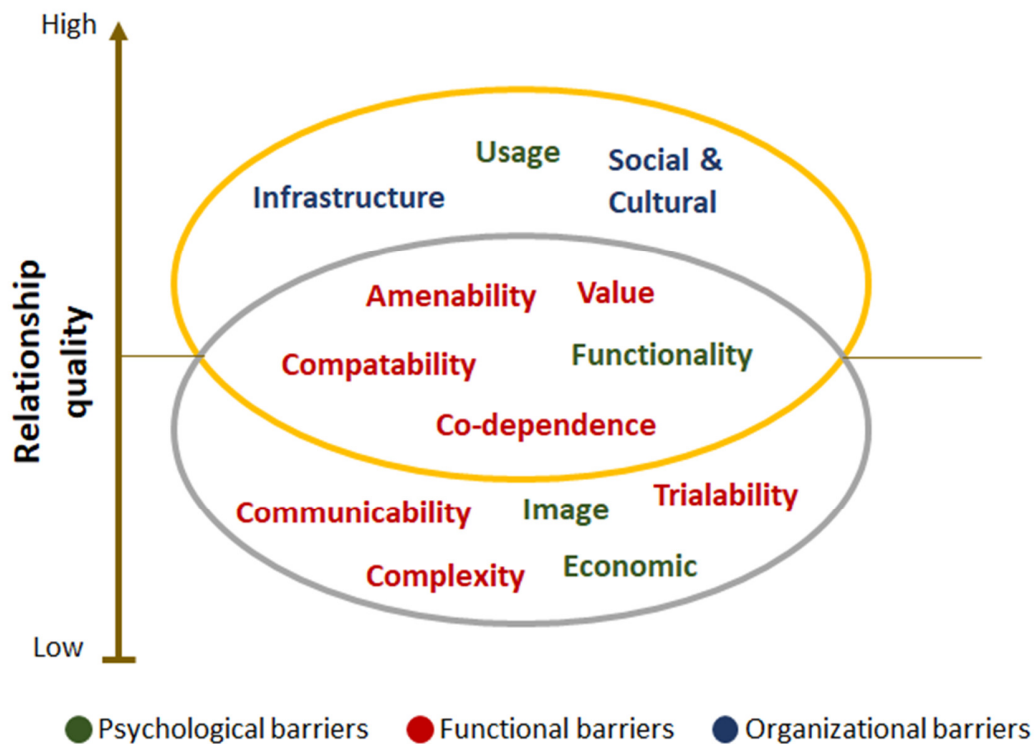
Figure 11: Depiction of the impact of relationship quality on adoption barriers.

6. Conclusions and Implications

6.1 Conclusion and theoretical implications

Within this explorative study, the goal of investigating how relationship quality influences the evaluation of adoption barriers in the diffusion of radical innovations has been set. Despite the perception in network and adoption literature being that relationships influence organizational attitudes towards adoption behavior, a research gap on how this impact is expressed could be identified, leading to the this study's research question and emphasizing its contribution. Through the investigation of multiple cases within a single case study, two case groups with different levels of relationship quality have been identified and compared with regards to their respective perception of different adoption barriers. For better comparability and applicability of all interviews, a retro perspective viewpoint of the interviewees' experiences in purchasing a case product, being specified as a radical

innovation in the network door controlling space, has been inquired. As a result, the emergence of five proposals could be achieved, with each one specifying how different adoption barriers are affected by varying levels of relationship quality, as presented in the following:

It has been found that the functional barriers of value, co-dependence, amenability, compatibility as well as the psychological risk of functionality are not impacted by relationship quality, with both groups recording similar experiences with the product. This has been found to be caused by both partner group's equivalent position and responsibility as surrogate buyers to carefully assess the product in terms of its advantages, functionality as well as completeness and amenability in order to accomplish superior market knowledge for the provision of seamless product solutions to their end-customers.

Secondly, the higher likeliness of experiencing organizational barriers as well as product-specific usage barriers with increasing levels of relationship quality could be partly validated. Literature shows that within more tight-knit collaborations, a higher frequency and intensity of interorganizational exchanges can be expected, leaving more room for the occurence of barriers or adoption-enabling factors of organizational nature. Furthermore, as gold partners have been offered to try radical innovation even before their official launch, benefits of early market adopters could be used, being the experience of the product and hence bigger openness to adopting it. It was however not been possible to fully validate these assumptions, as no data has emerged at all for authorized partners' attitude towards organizational and usage barriers, leaving the question open whether the absence of such barriers in lower relationship partnerships can be confirmed.

Thirdly, it has been found that trialability and communicability errors, which are negatively influenced by lower relationship quality due to less extensive communication infrastructures and no guaranteed option of trying products, further cause the occurrence of economic and complexity barriers. As the lacking ability to try and communicate the products specifications arise, buyers with a lower relationship quality tend to experience issues in comprehending the product as well as lacking willingness to invest in it, due to misconceptions. Overall, lower relationship quality has been found to increase the chance of encountering adoption barriers, representing a further finding of this study.

As for why authorized partners encounter image, trialability, communicability, complexity and economic barriers, this factor could be linked to the absence of trial phases as well as insufficiently developed communication infrastructure in lower-level partnerships. Research has shown that trialability is often considered a crucial factor in enabling the comprehensibility of innovations in product adoption processes. This notion exists for communicability in the same way, being a medium to create transparency and hinder the

occurrence of misunderstandings and reluctance to invest, which could be further supported within this study's analysis. As for image barriers, further research on why low relationship quality has created a negative effect on partners adoption barrier evaluation is recommended.

As a further finding, functional barriers have been found to occur more often than psychological barriers, leading to the finding that this can be related to the complexity of the case product and the high relationship quality between gold partners and the CC, which further lowers the occurrence of psychological barriers.

With above findings, this study contributes to extant literature on adoption barriers within networks at the example of radical innovations, which is considered to be of high theoretical significance due to the prevalent focus of academia on individual adoption behavior (Mohamed Samir Hussein & Mourad, 2014) as well as the presence of empirical proof of the crucialness of adoption barriers for radical innovations in particular (Sandberg & Aarikka-Stenroos, 2014). Furthermore, by using the concept of surrogate buyers, this evidence is given at the example of a practical and common phenomenon in B2B networks, whereas the occurrence of adoption barriers occurs much more frequently in comparison to end-consumers. With regard to relationship management literature, it expands the initial viewpoint provided by Palmatier et al. (2006). Palmatier limits the potential customer-centric outcomes of relationship quality to the factors of expectation of continuity, word of mouth and customer loyalty. Through this explorative research an expansion of this list by the factor of adoption barrier evaluation can be reached, providing a broader understanding of the effects relationship quality entails on customers within the sphere of relationship marketing.

6.2 Managerial Implications

Considering that this study has provided insights into how relationship quality influences adoption barrier evaluation, the ability of management to assess problems experienced in the commercialization of radical innovations through networks has been provided. The detailed insights into the role of each respective adoption barrier in that sense gives the unique opportunity to managers in science-based industries to create fruitful measures that directly address the occurrences of barriers within radical innovation adoption.

It could be noted that intermediaries within a commercialization network act as the diffuser of innovation within markets. As such, the capability to facilitate or hinder the diffusion of an innovation is given. If an intermediaries interests are not properly considered and addressed, the diffusion of innovation through these partners might be hampered with. Hence, managerial attention should be placed on identifying and recognizing the role of

critical intermediaries and place special emphasis on solving any conflicts that might impede with continuous business opportunities.

Another managerial implication arises out of the strategic setup between manufacturer, intermediary and end-customer. Within this particular case setup, the manufacturer did not engage directly with end-customers and focused his attention on promoting products to the intermediaries. However, it has to be noted that knowledge and information shared via different mediums between manufacturer and intermediary differs significantly from the knowledge and information shared between intermediary and end-customer. Whereas intermediaries are more likely to seek out product specific information and technical attributes, the end-customer is more likely to place its focal on the value proposition. Even though no major occurrences could be noted within this study, the differences in information requirements have to be considered to equip each involved party with the required information and to enable the most efficient and effective commercialization process to achieve the best results for commercialization.

Ultimately, trialability has been deemed a crucial adoption-enabling factors within this research. Perceived risks and benefits of the product can be showcased in real-life settings to the customer through trial offers, hence diminishing the hindering factor of uncertainty on the customer's side, which is commonly perceived in radical innovation adoption (Banerjee, Wei & Ma, 2012; Colombo et al., 2017; Schuhmacher, Kuester & Hultink, 2018). With findings proving the causal relationship of trialability as either a facilitator or, in case of the missing opportunity to test products prior to purchase, barrier to innovation adoption, science-based companies are recommended to offer trialability phases to potential customers.

Overall, clear benefits of investing into Customer Relationship Marketing could be determined, as it enforces trust, commitment and satisfaction within trading partnerships. Hence, this study hopes to stimulate managers to pay closer attention to one of the biggest resources any firm may have: it's partners within their network.

6.3 Limitations and Future Research

Certain limitations of this study have to be outlined, as they may influence the results of the research or offer inspiration for future research.

Firstly, due to resource and time constraints, this study will exclusively focus on dyadic relationships and not consider relations consisting of multiple actors. As organizational behavior strongly depends on each interaction a firm encounters in its surrounding (Alsaad, Mohamad & Ismail, 2018), different outcomes may be expected in relationships comprising more than two actors.

Secondly, it has been chosen to tackle a specific type of relationship by focusing on dyads within networks for commercialization. Even though this step has been chosen purposively due to the amount of challenges characteristic to the commercialization of innovations and the focal stance of innovation adoption, the topic of relationship quality could be examined from the perspective of different network types in future research.

Moreover, when choosing interviewees within the CC's loyalty program, the silver tier status has been purposively not considered due to the intention of catching the extremes first before achieving a more nuanced understanding. It is questionable whether including interviewees belonging to this category may create additional findings that are of relevance for the research, but should hence be considered for future research endeavours.

Further, with regard to relationship quality, a sole focus on its dyadic antecedents has been made. These offer opportunities for future research to address the role of customer- and seller-based antecedents of relationship quality to extend this research findings.

Also, interviews were exclusively conducted with upper-level management who were expected to lack certain information in comparison to field employees, who might have been more knowledgeable and insightful for the conduction of these interviews. However, with the difficulty of obtaining interviews at all, this limitation had to be accepted.

Moreover, limitations may occur with the conduction of interviews being focused on a radical innovations, whose introduction to markets has been five years ago. Hence, answers to questions might be deluded and not catching all of the interviewees insights due to retrospectiveness. However, market standards have since then not adapted as rapidly, hence the product still requires a change of user behavior, as many radical innovations do. Additionally, it has yet to reach its main market of customers and offers supplemental, renewed functionalities with its open software platform. Hence, the product can still be deemed a radical innovation and thus a research object for this study.

As for the product-specific value barriers, a slight change of the original understanding has been added, asking the interviewees to compare the selected radical innovation with competitor products instead of prosecutors. As the product represents a radical form of innovation, no prosecutor model exists thus far, making it necessary to determine the value of the innovation otherwise.

Furthermore, the presented organizational barriers in chapter 2 were initially not within the scope of this study due to resource constraints and have thus not been considered as extensively. However, due to the fact that this dimension arose during the interviews, they have lastly been included within the literature review and presented in chapters 5 and 6. Nonetheless, a more extensive study with the inclusion of organizational specific factors or even a primal focus on these would be of high interest for future research.

Additionally, the usage barrier did not provide sufficient data for a more thorough analysis within this study. It can be questioned whether data did not arise with authorized partners due to their lacking relevance or if data simply hasn't emerged sufficiently for more in-depth consideration. Hence, further research should be conducted for clarification.

Lastly, triggered by an overall low number of interviews as well as an uneven distribution of status membership, this study may not be able to capture cultural differences in a sufficient manner. A lower generalizability of each examined region can be expected. Thus, future research could transfer our study design to other countries or solely focus on one specific region to provide new insights into discussions about relationship quality and its influence on adoption barrier behavior.

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Appendix

Appendix A: Semi-structured interview guide

Section 1: Relationship questions

Dyadic Antecedent of Relationship Quality	Interview Question
Similarities	What are your firm's strategic objectives? How important is R&D and innovating to your firm? CC emphasizes heavily on its partner network. What relationship strategies do you pursue with your customers?
Relationship Length	How long have you been a customer of CC?
Frequency of Interaction	How frequently do you communicate with CC?
Communication	What channels do you use to communicate with CC? How satisfied are you with current communication? How could CC improve its communication with you in the future?
Conflict	Have any conflicts/failed agreements occurred within your collaboration? If so, how has it been handled between you and CC? (satisfied with outcome?)
Overall Satisfaction	How satisfied are you with CC overall performance?

Section 2: Adoption Barriers

Innovation-specific barrier	Interview question
Trialability Barrier	- Have you been offered to test [case product] prior to purchase?

	- What experiences have you made during this trial phase? Anything positive or negative?
Open question for more holistic findings	- What were your reasonings to invest into [case product]? - Were there factors that made you hesitate?
Economic Risk	- How would you evaluate the investment into the [case product]? - Do you think the investment into [case product] is reasonable?
Amenability Barrier	- How do you sell the product to your (end-)customers? (Using CC software or external software) - What do you think about the openness/customizability of the software?
Marked behind respective question	- How satisfied are you with the functionality of the **hardware** of the [case product]? *(Functional risk)* - (If CC) How satisfied are you with the functionality of the CC **software** for [case product]? *(Co-dependence barrier & compatibility barrier)* - (If not) Why did you choose not to utilize it? *(Functional risk)*

Marked behind respective question	- How comprehensible are the technical specifications of [case product]?
	    - To your own organization *(Complexity and Communicability barrier)*
	    - How easy is it to translate the relevant information to your customers? (Communicability barrier)
	- How comprehensible is the value proposition of [case product]?
	    - To your own organization *(Communicability and complexity barrier)*
	    - How easy is it to translate the relevant informations to your customers? *(Communicability barrier)*
	    - Do you miss any info? *(Add-on)*

Value Barrier	- How would you evaluate the benefits/improvements of [case product] to competitor products?

Marked behind respective question	- How would you evaluate the [case product] with regards to quality and performance results? *(Funktional risk & image barrier)*
	    - Have you experienced (severe) issues like malfunctions/dysfunctions with the [case product]?
	    - If so, has CC customer service provided sufficient help to solve any issues experienced? *(conflicts)*

Closing Question	- Is there anything else you would like to add in regards to feedback, experiences, etc. for the product [case product]?

Appendix B: Interim Analysis on Relationship Quality - In-case

Having conducted a total of nine interviews, raw data in the form of statements and strategies expressed by the interviewees within the first section of the interview guide could be collected and converged into first- and second-order concepts within both of the predefined cases of authorized and gold partners. As stated, this interim analysis has been conducted to determine the different levels of relationship quality, namely trust, commitment and satisfaction, of the two cases.

For better comparability of the results, the second-order concepts have been summarized by using academic literature, namely the classification of dyadic relationship quality antecedents by Palmatier et al. (2006). Hence, the aggregated dimensions of communication, interaction frequency, conflicts, relationship length and similarity could be identified for each case. These antecedents shape the relational mediators of trust, commitment and satisfaction (Palmatier et al., 2006) and hence need to be examined before determining the extent of each relational mediator.

A detailed in-case analysis of both cases, presenting the raw data as well as its merging to aforementioned aggregate dimension shall be presented in the following. Hereafter, both cases evaluation of each antecedent shall be compared within a cross-case analysis (Appendix C) (Eisenhardt, 1989) to identify differences between both cases. As a result, each case's relationship quality can be determined and hence the assumption, that gold partners do possess a higher relationship quality than authorized partners, validated.

Gold - Relationship Quality

<u>Similarities</u>

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "Yeah, we're doing software for [...] access control. Our objective is to built platform that can have...ah... both cards and cell phone as a way to access doors to some buildings. So that's ... that's the short version of what we are doing." (I3) - "We only focus on software, the hardware is is	Software Developer	Company type	Similarities

something that's necessary to upload the software." (I3)		
- "So we are obviously a system integrator. We, we specialize in CCTV, access control, fire alarm, audio, video, intercom solutions, TV solutions, you know, so we, we do all low voltage systems." (I4) - "Our company is a solutions integrator. So we integrate technology across all spectrums. So we don't manufacture any hardware. And we don't write any software but we make, or we integrate open architecture, off-the-shelf technology to communicate amongst each other. We have a focus on a lot of different products." (I1) - "So, ehm, we, we do, we're a integrator. [...]we use only [CC] cameras and products, [...] we have a very good strong background with it." (I5)	System Integrator	
- We are a crucial system integrator in the US. However, we do not just do solutions, we are also architects, meaning the development of security design for large enterprises and softwares.(I7)	Hybrid of System Integrator and software developer	
- "Very important. I mean, we're always trying to suit our customers needs. It's .... not everything fits in the same box, if that makes sense. We want to have, you know, we like to present leading edge technology, sometimes bleeding edge, [...], Because sometimes, we have to think outside of that box and present, you know, solutions and services. Because there's a need, and we're trying to create a need or create a solution out of the need." (I4) - "Yeah, it is. We actually worked quite closely with [...] regarding R&D. We have, last week, their R&D team, for New Business was here in our office. So we work very closely with [...] on R&D." (I3) - "Uhm, Innovation is important to us, because as a technology company people expect us to provide solutions to them are not not necessarily cutting edge, but sort of more advanced of what they can find with just sort of basic Google searches. So when suppliers and manufacturers come up with new ideas, like as an example, just using your phone for the card access or something, something as basic as that. That's sort of the conversation for us." (I1) - "Yeah. Yeah, it's super important. [...] have really good partnership with us because of that. And we actually have some of our, some of the places like [CC] and stuff actually have devoted regional sales manager for some of our stuff, where they know we're so valuable and be, do have such a big footprint that they just	High strategic importance of Innovation	Core values

-	actually have people just for us." (I3) - ""Very, very important. We… our company itself, we do a lot of designing custom solutions, and we do a lot of bleeding edge implementations of technology. We try and take the bleeding edge away." (I7)			
	- "We have just a very few selected partners. So we have a different strategy than a lot of other other firms.So we use only [CC] cameras and products,[...]. Ehm, and we actually turn away clients on a regular basis if they don't want to use those products." (I5) - "We, we don't necessarily have programs with our customers. But we do pick and choose our customers, if that makes sense. So, sometimes we've had to fire customers, because they're a pain in the butt. And, they don't get it. And, honestly, we're, we do partner with all of our customers in the sense that we commit to them, that we will provide, you know, goods and services and be there to fight for them, and bring them the solutions, a new technology. But if it's a one way street, it doesn't work. Like you said, it's got to be a partnership. [...] And we're always looking out to, to make sure that our customers, you know, are being taken care of, and they don't have to go somewhere else." (I4) - We have a focus on a lot of different products. So we are a networking company. In the IT network space we're a [company A] gold partner. We have a controls and automation, so an industrial controls and automation group. So the lights of [company B] and [company C] and you know, [company D] we integrate their technology. Uhm, We also do a lot in physical security, obviously, [CC] being our largest security partner, from a manufacturer standpoint. And then we have others. We have audio visual, such as [Company E], which is room automation and conference room controls.[...] We have a very wide breath of technologies that we integrate with a variety of partners." (I1) - "No, we actually used to copy the strategy that [...] has as our customers will be [CC] partners, we have the same kind of partner setup with the different levels, they are transparent to the [...] levels. So it's, it's more or less a copy paste of the setup." (I3) - "We do not have a loyalty program. We do have long term customers that have been with for almost 30 years, we build more on a partnership instead of a customer base. [...] We partner with our customers, we help them grow, educate, and also give them best practices, and also keep them from being a security hole to the rest of their company." (I7)	Selective Customer Acquisition Strategy	Customer Relationship Management	

Conflicts

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "Yeah, it's been one conflict, a couple years ago, it was like, maybe five years ago, where we did a hack that showed a vulnerability in the set up with [...] hardware. But that was solved quite easy. I can't really blame [...] for that conflict. It was rather us being a bit aggressive, I guess." (I3) - "[...] only big issue we've had is backordered products, not necessarily knowing when, when the product is, I mean, we make a big order, man, we don't even find out that it's backed up for a while, and then we're trying to figure out how we're going to solve this, you know, and, and then we get a ship date, and then later on that ship, it changes, and then later on that ship changing is kind of hard when we're held hostage, if you want to say that. [...]" (I4) - "One ride of cameras we got. It was less than I would say 50 that we had some problems with the imagers, it would be online for maybe 60 days, and the cameras would look to go out of focus, but nothing we could do could get them back into focus, and then [...] made that right. They basically replaced all the cameras, haven't had a single issue sense. So, yeah. That was that's the worst case we've ever had and was handled in a good manner." (I1) - "I'm not really able to pick any out. Any, any issues, but yeah, there has been a few, but I'm very quick to bring those devices in an get them repaired and turned around." (I5) - "Well, when we initially installed this, it was going to be for probably about six doors. And we were, you know... the product in the literature for the products as it's only good for up to 16 doors, maybe up to 32, I believe. But yeah, but it was it was not capable of doing more than that. [...] Well, as it turned out, this customer rapidly grew to about 16 doors. And we started having some problems. We worked very closely with the tech support people. And it appeared that there was a problem, because of the architecture of this product where it downloads the database to each individual panel. There appeared to be a problem when you get into a larger system for this database updates to... to be reliable. So we started having a lot of errors. And over time, you know, in working with the engineers and the support people, the decision was made to ...to pull all the equipment out. And we did remove all of the equipment from this particular site. And replaced it with something else." (I7)	Occurence of conflicts	Crisis Management	Conflicts

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "[...]but I'm very quick to bring those devices in an get them repaired and turned around." (I5) - "You know, we all have issues with products once in a while. I mean, it's not, it's not always, I feel everyone's got a lot of products that just for some reason has, has this ease, but most ..99% of the time, you call [CC] tech support, and we have probably sitting here today after that, and it is, you know, that's one thing we really like about [CC]. The ordering process is very, very simple." (I4) - Interviewer: "Okay. So [CC] handled that quite well, from your perspective? I3: Yeah." (I3) - "Absolutely, they handled it very well, I basically reached out to not our local person, but our regional manager and said, hey, we got a big problem here, we need to get this stuff out and replace it. And then, not only did he take care of getting us credit for all of the material, he also helped us cover some of the labor costs to do this. So support was excellent." (I7)	Helpful assistance during conflict		

Communication and Interaction Frequency

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "Most likely, multiple times a day, there are people in my organization or myself directly that are communicating with our NSI channel manager, or some sort of technical person or even the business development folks and the product managers." (I1) - "On a daily basis." (I5) - "Ehm, I'd say on a daily basis.[...] So I would say that is a lot of it might be 10 people something that we have regular contact with within [...]." (I3) - "I wouldn't say daily, but I would definitely say multiple times a week." (I7) - "We're more independent, I think it is, but we still communicate on it, at least on a weekly basis in the sales side, and often on, on the installation side." (I4)	Frequent (daily to weekly) communication interactions	Interaction Frequency	Communication + Interaction Frequency
- Interviewer: "So probably a mixture of email, personal, phone?" - I1: "Yep. Yeah, all the above." (I1) - "Since geographically, we're apart, most of the time it is either text, phone calls or emails. But whenever possible, we try to meet personally." (I7) - "Everything I mean, we will call our rep or will text them. Or if it's a project, for instance, face and work	Mixed, direct and indirect communication channels	Communication Channels	

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "mailing, something with multiple communication formats[...]." (I4) - "Yeah, different channels. So regional sales manager, uhm, for global accounts, there's, key account managers support. All kinds of different people, but on daily basis. We also meet up personally sometimes" (I5) - "Yeah, we have our sales contact, which is [sales representative name]. We communicate with him, at least every day. I would say that we have a lot of developers we have direct, personal contact with and also some of the product managers in different areas of [CC]." (I3)			
- "I would say that we're pretty tight. As a matter of fact, you know, we were at [exhibition name], and I had four different meetings with [...] personnel, from marketing, to business development to general products to, uhm, you know, people from corporate from [CC headquarter city name]." (I1) - "Let me think about that. Now with [CC sales representative name] coming onboard and doing more on site, time, personalized meetings with us, I think that's the biggest thing that we could do to keep building the relationship." (I7) - "As satisfied as I could be. I have nothing to complain about. [...] I will say no, because I think we we always get what we asked for. They're always... like... responding to us. So obviously, it works perfect. As flawless as it is right now. For us at least." (I3) - "Very satisfied. There's no issues with communication." (I4) - "Very (satisfied)." (I5)	High perceived level of satisfaction with communication	Communication Quality	

Relationship Length

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "I'm gonna say about 12 years officially?" (I7) - "I think we're going at 12 years now." (I1) - "Almost 10 years." (I3) - "We have been buying [CC], I would say since we've been in business. 16 years or so? 15, 16?" (I4) - "Ehm, 10 years? 15 years? Something like that?" (I5)	10 years or longer	Duration of relationship	Relationship length

AUTHORIZED

Co-Dependence Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- Interviewer: "So you're a system integrator, but could you please define what your firm strategic objectives are? What do you what you offer?" I6: "Yeah, so anything what we deem low voltage, so that includes security systems, camera systems, access control. And then as well, audio, video in the commercial world." (I6) - "We're a electrical contractor, we do uh, high voltage electrical controls, and our low voltage divisions access control, video surveillance, intrusion, voice data fiber." (I2) - "Basically, we are an integrator. We do have reselling, as part of our revenue share. But we also do project integration, and we do services, post sales." (I9) - "I mean, ehm we're a system integrator from Africa, we have about; we're in about 10 countries here. And we have our headquarter here in Kenya, as well as our technology division." (I8)	System Integrator	Company type	Similarities
- "Yeah, we're more a public RFP type of company." (I2) - "Well, we do not actively engage in R&D. So basically, we count on our vendors to do R&D and share it with us so that we can basically evaluate if some of the new technologies coming out of or, you know, insights our vendors share with us if they apply to our market, you know, how we can take advantage of that." (I9) - "We are system integrators, and for that we are very partly involved in research and development of products. From the feedback we get from our customers, we share that with [CC]." (I8) - "Ok, ehm, well, it's part of us since we try to provide customers with the newest technologies, however, we don't do R&D ourselves so...I mean as you a said, [CC] is really out there and we, ehm, we definitely admire that but it can not really compare to what we do." (I6)	Mediocre importance of Innovation	Neutral attitude towards innovation	
- "We actually work with contractors, they are extremely important to us. So in doing so, doing quality work, ensuring that they know what, what new technologies are out there. Ehm, commercial aspects, sort of what sort of building technologies are available	Customer Strategy	CRM	

Quotes		
- "to them. If they have older systems, reaching out to them and letting them know, new features that are available." (I6)		
- "Ehm, I mean, we use quite a bit of [CC] but we also have other manufacturers that we work with as well. As far as video surveillance, it's [company name A], or [company name B] or [company name C]. And ehm, as I said, we're an RFP type of company, so that's how we interact with our customers." (I2)		
- "Well, we are also B2B and our structure is designed around account managers, and more recently, product managers. Part of our, our, I guess, strategy to better cover our current clients. We've also around, like you said, some allies are either you know, service delivery or, you know, hardware installation. So, we don't, we don't only get to clients, through through our own staff, but also through third parties that want to work with us. Okay, that's all symbiotic in that way. But unlike [CC], we also heavily corporate with customers directly." (I9)		
- "Yea we do have some partners we collaborate with on a daily basis but we are also flexible to, ehm, let's say, new influences and opportunities." (I8)		

Conflicts

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "Well, we had a top million dollar negotiation last year, okay. Our cameras that had to be delivered to Venezuela, we were working on a project for for the oil industry. And, obviously, this was not going through the regular channels. So we had to go up a few notches, to share information with with compliance and legal. And, I mean, I'm not going to say we had an argument, but we we definitely...the [...] compliance person that we were assigned initially did not have the the, say the experience dealing with this type of compliance issue. [...] Now, here's the thing, the [...] people. This is more of a, I guess, I don't know, from whatever standpoint, you guys need to read review this book.The [...] people asked us as a channel to deliver the, you know, the news to the client, that the project had to be edited. And so, all along, we had to tell the client that we were going back and forth. And basically, we, we lost all credibility with the client, [...] And months later, or maybe six, seven months later, the actual team contacts us and says, look, we	Occurence of Conflicts	Crisis Management	Conflicts

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
have great news. We can. The project has now been approved. [...]." (I9)			
- "No, we've not had any failed agreements." (I8) - "No." (I2) - "Not really, at least I can't think of anything." (I6)	No occurrence of conflicts		
- "You know, I mean, it's not the ground, we're, we're facing clients, with the [...] name on our shoulders. And sometimes we do need a little bit more support from [...]. It's none of the you know, it's, like 80% of the deals do not require this. But maybe 20% require a little more support. And that's where we, you know, basically, [...] was just telling us, you know, informally things they did not want to commit." (I9)	Assistance during conflict		

Communication and Interaction Frequency

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "On a weekly basis with the Kenya representative." (I8) - "I would say probably twice a month." (I6) - "Well, a couple of times a month, maybe 3-4 times." (I2) - "On a weekly basis, I think. Maybe a little less." (I9)	Weekly to monthly communication	Interaction Frequency	Communication + Interaction Frequency
- "No, that's per phone and mail." (I8) - "We use WhatsApp and EMail." (I9) - "Cellphone, just phone calls." (I2) - "Via email, ehm, they do send a like a monthly newsletter as well. Just sort of a blanket email, but then as well, I do a phone conversations with the one guy more frequently." (I6)	Exclusively indirect communication channels	Communication Channels	
- "Communication was all verbal and nothing was written. And, you know, it's a little bit cowardly, when you're a huge company, and you let the partner do all the dirty work. And we're tiny company in comparison to them" (I9) - "Uh, okay, I'm pretty satisfied. They're helpful.[...]Ehm, it seems to be a good process, really. " (I2) - "We can reach the commercial people of [CC], like ... the account manager in Colombia, through WhatsApp and email fairly easily. But when we need to contact,	Lacking satisfaction with communication to CC	Communication Quality	Communication

Quotes			
presale support, or yeah, for technical support. The website sometimes is not the best channel, for instance, sometimes we we want to, you know, set up a chat conversation with one of the presale specialist with [company name E]. And using [browser name A], for some reason that the chat is not always available, the some of the links are broken on the website. Not so many of the links are broken on the [CC] website. So sometimes it's a little bit difficult to get ahold of [CC] people on the technical side. And the information that we sometimes believe is available on the website is not always available. And I can give you one example. Last week, we had a meeting with a company that that do, their service is cranes. So they have like huge cranes for, for ports for building, for mining. Okay. And they were asking us how to protect their perimeter. So we went on [CC] website, and we saw this magnificent site, almost a micro site with information about perimeter protection. So we started, you know, we considered sending it to the client. But as we start clicking on the links, some of the information was not available, and it led to a broken link. And that was very disappointing, because it happens with a certain frequency, so links are broken. So we decided against sending it ... the ... sharing that with the client, because if the client happens to click on one of the broken links, you know, the experiences are not positive. And so this happens with a certain frequency around the website. I'm not sure why. But it does." (I9) - "Ok, we are really satisfied communication-wise. Ehm, nothing to complain about really." (I8)			
- "Very satisfied. It's quite alright I'd say. [...] No... no, I wouldn't (improve the current state of communication). Only because we don't want more communication. (laughs)" (I6)	Satisfied with CC Communication		

Relationship Length

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "Well, I mean, started about 10 years ago, probably? Maybe a little longer." (I9)	Longer than years	Duration of relationships	Relationship length

- "Well, at this company two and a half years [...]." (I2) - "Ah, I would say five or six years." (I6) -	Shorter than ten years		
- "Ehm, let me think about it.. I'm not sure actually to be honest. Could be a couple of years." (I8)	Undefined length of relationship		

Appendix C: Interim Analysis on Relationship Quality - Cross Case

Findings and first assumptions

The in-case analyses showed that all aggregated dimensions have provided varying results for gold and authorized cases, as indicated in the following cross-case comparison. Hence, it could be confirmed that gold partners have a higher relationship quality than authorized partners.

Similarities

Within this sphere, the second-order concepts of CRM, company type and core values could be identified. With regard to the latter, gold partners have been found to resemble CC more than authorized partners in their attitude towards innovation, all placing heavy emphasis on innovating and providing their customers with the newest technologies (I1, 16.04.2019; I3, 18.04.2019; I4, 24.04.2019; I5, 25.04.2019; I7, 02.05.2019; PI). On the other hand, authorized partners have either defined themselves as Request For Proposal-company (advertised for bids projects, mainly applicable in construction) (I2, 17.04.2019, PI) or have not emphasized the role of innovation sufficiently, estimating its relevance to be mediocre to their company (I6, 25.04.2019; I8, 06.05.2019; I9, 06.05.2019; PI). Considering the CC's strong strategic focus on R&D and innovation, a higher similarity could be hence identified between gold partners and the CC in this regard.

This higher level of similarity is further supported by the gold partners' selective and partnership-centric customer strategies which they apply with their very own customers. Gold partners have described to carefully select their partners based on their compatibility with them, as well as their honest intention of providing premium services to these customers. This factors resembles the CC's partnership focus, which it places a high emphasis on.

> *"And we do that for customers, where we provide innovative, you know, solutions, as well as a high level of service capabilities from our technicians. And we're always looking out to, to make sure that our customers, you know, are being taken care of,*

and they don't have to go somewhere else. But at the same time, if if we can't provide a solution, we will suggest another, another supplier, if that makes sense for somebody that if it's outside of our wheelhouse that we can't do, we'll bring in partners that will help create that solution or, or pass them off to somebody else.'' (I4, 24.04.2019, PI)

Contrary to this, such a dedicated customer strategy could not be noted in the case of authorized partners, who overall have provided an impression of being more flexible in their CRM endeavours and less partnership-focused (I2, 17.04.2019; I8, 06.05.2019; PI). Furthermore, they have mentioned to also serve end-customers directly which represents another major difference to the CC (I9, 06.05.2019, PI)

Further, all interviewed partners in the gold and authorized segment either operate as system integrators or as software developers where they, in some cases fully and in some cases partly, deal with security solutions, hence representing another similarity to the CC.

With gold partners registering a higher resemblance to the CC in regards to their CRM initiatives and core values, an overall higher similarity to the CC has been found. As mentioned in Chapter 2, similarities represent one of five dyadic antecedents of relational mediators and hence improve the relationship quality of dyads (Palmatier et al., 2006). Consequently, the gold partner's stronger similarity to the CC is expected to imply higher relationship quality in comparison to that of authorized partners with an overall smaller resemblance.

Conflicts

As for both cases, the second-order concept of crisis management could be detected, describing the first-order concepts on the occurrence of conflicts within the relationship and their management by the CC. Gold partners have experienced more conflicts and failed agreements with partly severe dimensions than authorized partners (I1, 16.04.2019; I3, 18.04.2019; I4, 24.04.2019; I5, 25.04.2019; I7, 02.05.2019; PI). However, these could be solved with the help of committed customer service operations of the CC and did not cause any harm to the relationship or satisfaction as perceived by the partner. On the other hand, only one conflict occurred on the side of authorized partners, which eventually could not be settled in a satisfactory manner and led to the loss of the partner company's customer (I9, 06.05.2019, PI).

Overall, these findings could be connected to the antecedent of conflicts. They were found to occur more often in the case of gold partners, however could be settled in all cases in contradiction to authorized partners, who mentioned to not have been satisfied by the way the conflict was handled by the CC (I9, 06.05.2019, PI). For this reason, conflicts have a

more negative impact on partners in the authorized segment than for gold partners, which is an indicator for a lower relationship quality applicable for authorized partners.

Communication and Interaction Frequency

The third dimension, communication, could be linked to the antecedents of communication and interaction frequency. With regards to the latter, communication has been found to be more personal and frequent for gold partners. They have described to be using a variety of communication channels which also included personal face-to-face channels, such as meetings, while authorized partners communicated exclusively via impersonal channels like emails. Further, all gold partners have stated to be in touch with the CC on a daily or weekly basis, whilst authorized partners register only few interactions a month. Overall, gold partners have stated to be satisfied with their current state of communication at all times, while authorized partners have criticised their communication with the CC or mentioned that they do not need further communication (I6, 25.04.2019; I9, 06.05.2019; PI).

With the communication and interaction frequency being perceived as more personal and regular for gold partners, a higher relationship quality is expected to persist as the factor of trust can be enabled through frequent and transparent exchanges, thus facilitating the alignment of goals and resolving of disputes (Palmatier et al., 2006). Regular interactions further indicate high levels of commitment. For these reasons, a higher relationship quality can expected for gold partners.

Relationship Length

With a total relationship length between 10 and 16 years, compared to 2-7 years for the authorized segment, gold partners have recorded a substantially longer period of continuous relationships with the CC. However, one authorized partner has been a customer of the company for 10 years (I9, 06.05.2019, PI). Nonetheless, this particular partner represents a small account of the CC, purchasing only little volumes per year. As gold and authorized partnership levels are not dependant on relationship length, it is questionable whether it constitutes a representative indicator for relationship quality in this case and hence will not be considered for the determination of relationship quality within this interim analysis. However, it has been chosen to be integrated into the interview guide in case this topic emerges at a later stage of the analysis.

Cross-case analysis: Gauging Relationship Quality of Gold and Authorized Partners

In order to be able to empirically judge and compare each case's relationship quality, the aggregated dimensions and their linked antecedents need to be evaluated and connected to the relational mediators of trust, commitment and satisfaction. High levels of trust,

commitment and satisfaction in dyadic relationships lead to increased customer loyalty (Palmatier et al., 2006). As gold partners are deemed to purchase products more frequently and in higher volumes than authorized partners, they were expected to showcase higher extents of trust, commitment and satisfaction, which could be confirmed in the following analysis.

Research has shown that each antecedent impacts relationship quality differently, meaning that some antecedents have a greater impact on certain relational mediators than others (Palmatier et al., 2006). To measure the perceived relationship quality, mediators have been connected with the dyadic antecedents according to their greatest influence with the intention of generating a higher comprehensibility.

As an example, high interaction frequency enables trust the most, as it offers the opportunity to learn more about the partner and its intentions, which ultimately reduces uncertainty about future behaviors (Palmatier et al., 2006).

Commitment

Out of all dyadic antecedents, the mediator of commitment (see figure 12) is mostly influenced by the antecedent of similarities. According to previous findings, it becomes evident that gold partners are more similar as they have a shared passion for innovation and are strategically focused on partnerships. As a result of this, a higher level of commitment to the CC can be observed in comparison to authorized partners.
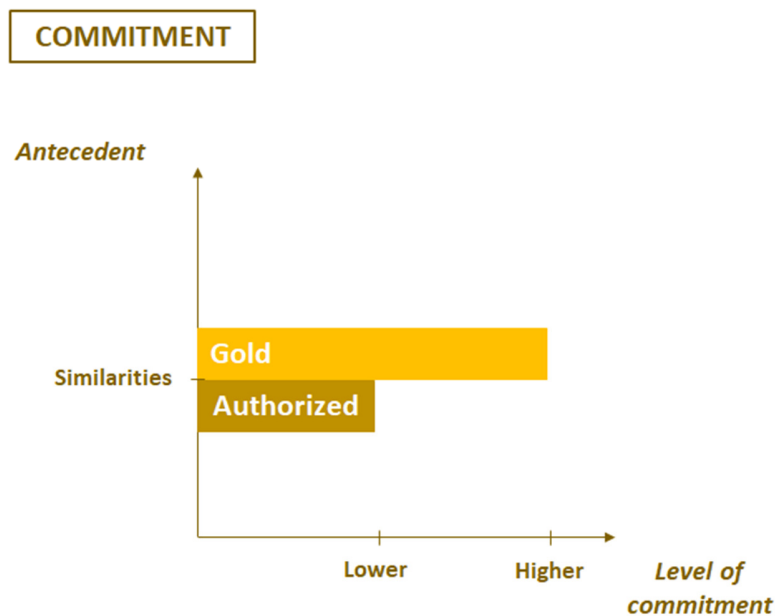
Figure 12: Comparison of commitment within gold and authorized partnerships.

Trust

As for trust (see figure 13), communication between gold partners and the CC happens on personal channels and more frequently, thus enabling transparency and trust between both parties. The relationship duration of gold partners has been also found to be higher than that of authorized partners, however, considering the minimal impact relationship duration has on relational mediators (Palmatier et al., 2006) as well as the fact that customers do not descend within the loyalty program based on the length of their relation but their purchasing volume, this factor shall not be of further consideration. However, it can be observed that just like commitment, trust is more common to be perceived by gold partners than by authorized partners.
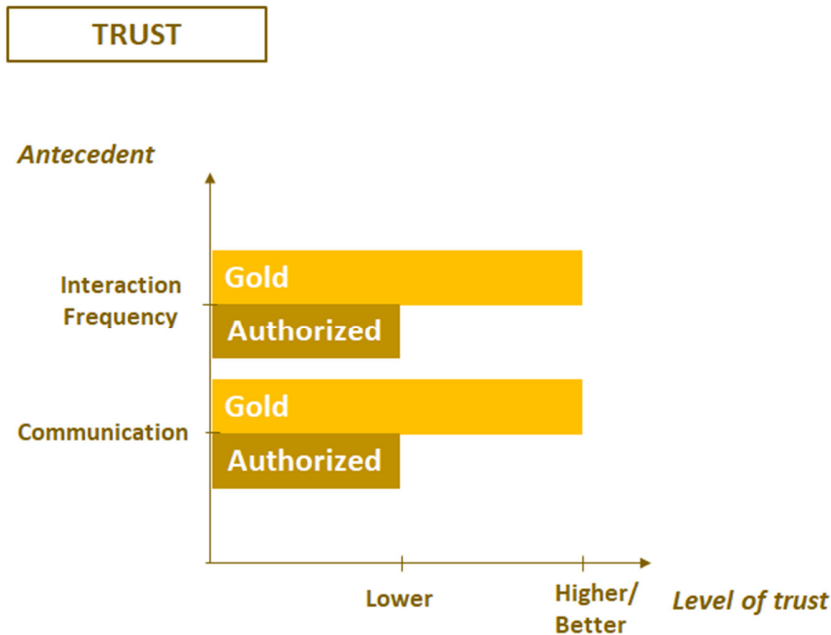
Figure 13: Comparison of trust within gold and authorized partnerships.

Satisfaction

Lastly, the antecedent that mostly influences the customer's satisfactions (see figure 14), conflict, have occurred in all of the gold partner relationships. Contrary, only one authorized partner has mentioned failed agreements or conflicts in the past. Hence, it could be assumed that the overall satisfaction of gold partners should be negatively influenced, especially considering the highly negative impact conflicts can have on relationship quality (Palmatier et al., 2006). However, as all conflicts could be solved, and due to the fact that the customer

support of the CC has been praised by many interviewees, the overall level of satisfaction within the relationship can be viewed as stable for gold partners.

"High quality, extremely high quality as well in presentation to customers. That's why, you know, it's it's absolutely for us, the number one manufacturer we deal with, you know, overall, for sure." (I4, 24.04.2019).
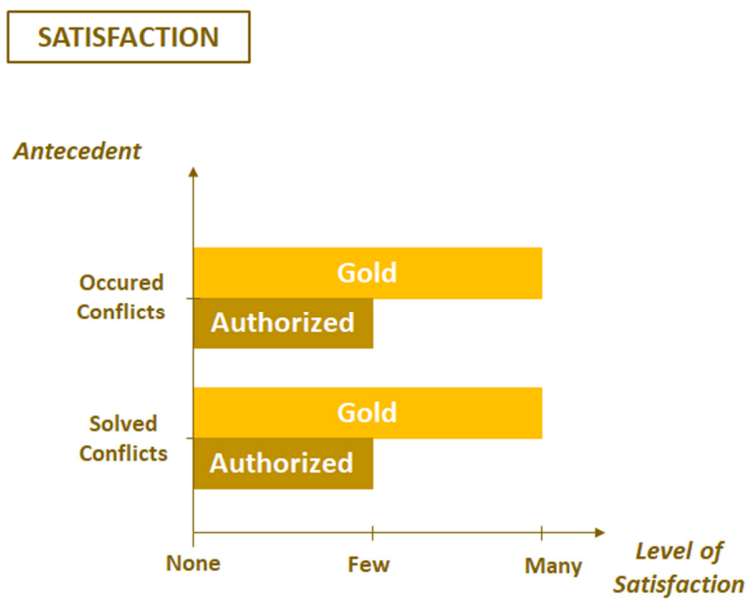
Figure 14: Comparison of satisfaction within gold and authorized partnerships.

Nonetheless, considering the the conflict that has occured in the authorized segment could not be resolved, smaller levels of satisfaction with the CC have been noted.

Relationship Quality of authorized and gold partners
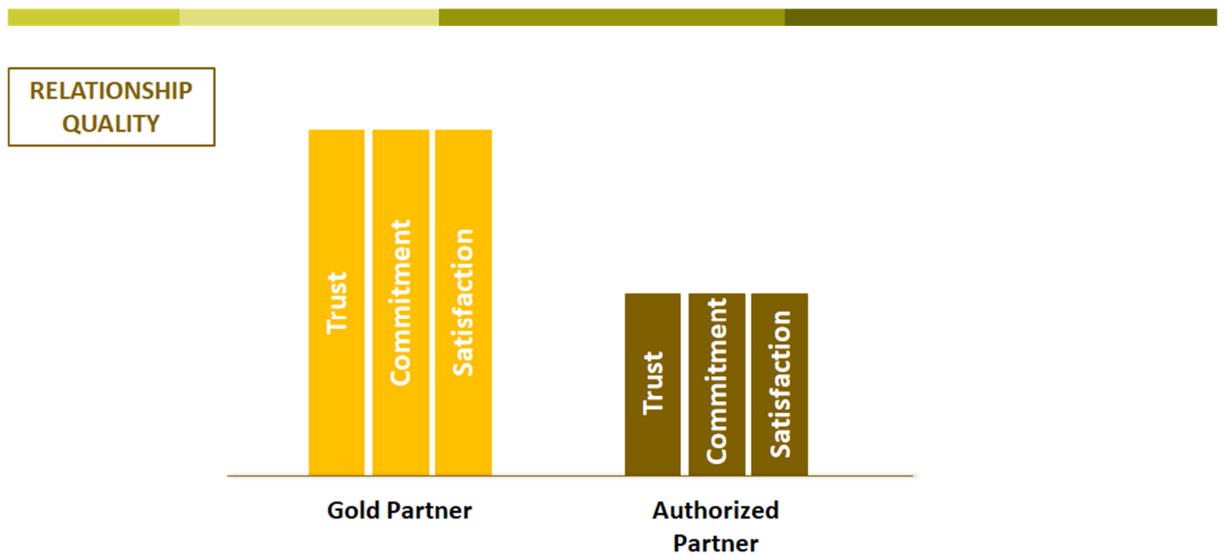
Figure 15: Comparison of relationship quality within gold and authorized partnerships.

Summing up, varying levels of relationship quality could be detected for gold and authorized partners (see figure 15). Gold partners indicate higher levels of commitment, trust and satisfaction than authorized partners, while both cases are equally satisfied with their relationship with the CC. As a consequence, the relationship quality within relationships with gold partners can be considered higher than that of authorized partners.

Appendix D: Adoption Barriers - Analysis

Adoption Barriers - Gold Partners

Value Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...other league than competitor, because the competitors are all locked down…" (I3) - "We sell some CC control platforms that are hardware diagnostic, and, you know, we could use it with them for upselling. Yes, it's a benefit." (I7) - "It's not quite as flexible a platform, you know, as the [competitor name] platform. One of the things with [competitor name]'s...we do a lot of retrofit work...and the [competitor	Openness of platform allowing more flexibility	Value Barrier	Functional Factor

name] hardware is quite a bit more flexible, there's a lot more different form factors versus where [...] just has the one model, the one size fits all." (I7)			
- "There's a lot of other ones that are IP-based" (I5) - "we found immediate, you know, an immediate advantage over a lot of other people" (I4) - "Being power ready and to have the ability to work with APIs and add users and everything in a fashion that's more common in IT world…" (I3) - "...I can see how a product that is this edgy would have some problems during, like test phase, in the beginning." (I3) - "...other league than competitor, because the competitors are all locked down…" (I3) - "...we didn't really see any advantage to the actual hardware, this product, other than they were already using camera station software…" (I7)	Perceived Innovativeness and Novelty		
- "...instead of having a bunch of these things on a wall, other competitors have a box that has high density door pounds in them." (I4)	Scalability to customer needs		
- "My recommendation would be to expand the software. Integration Partners, build out that bigger ecosystem of companies like [company name J]" (I1)	Eco-System extension recommended		
- "...come up with a high density solution somewhere...what am I doing with 30 doors, and they're all coming into one room?"(I4) - "...we do a lot of retrofit work...and the [competitor name] hardware is quite a bit more flexible, there's a lot more different form factors versus where [...] just has the one model, the one size fits all. So CC seems to be geared more towards a smaller system" (I7)	Product line extension recommended		
- "If, "if this happens then do this"-type	Additional		

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
of a trigger. It just does not do those very well" (I5) - "they could add more features" (I5) - "...both cards and cell phone as a way to access doors to some buildings." (I3) - "The only feature I would love to see is at least the ability to do a year's worth of logging for the events that are on it." (I7) - "...the one other thing that I'm missing would be the ability to do a lockdown system-wide." (I7)	functions and features recommended		

Co-Dependence Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "[...]it was initially, small client type setup that we were thinking about. And that's when we found, it doesn't have all of these things." (I5) - "...the big shift will start to happen is when that ecosystem of software partners grows and expands." (I1)	Eco-System extension with software partners required	Co-Dependence Barrier	Functional Factor

Trialability Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "We have a [case product] that has a handwritten series number on it" (I1) - "...we do a lot of alpha and beta testing." (I1) - "We had, like the first Beta-Version." (I3) - "...I do think we did get an alien back in the day." (I4)	Opportunity to test has been utilized	Trialability Barrier	Functional Factor
- "...first company to ever install it into commercial environment…" (I1) - "...even if we're warned that it may have bugs in it...they have a better quality than some of your competitors that have been on the market for years." (I1)	Experience has been positive		

Quotes			
- "...I can't really complain, because I think that they solved all the problems with the performance...with the next release." (I3) - "...When you looking at data sheet, it's really hard to, to, to comprehend what that thing is going to provide for us until I get it in my hands." (I4) - "...we initially like it…" (I5) - "And I think that they listen to partners and did the improvements necessary with the next two days, that was the [product line extension of case product]." (I3)			

Compatibility Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...other league than competitor, because the competitors are all locked down…" (I3) - "... they were already using camera station software and we knew that there was some integration between the access software and the camera station software, so we felt it would be a more seamless experience for the end-user." (I7)	Compatibility with other innovations	Compatibility Barrier	Functional Factor
- "...limited integration with other larger access controls systems that may already have, uh, they may already be embedded into those customers...without having the [CC] integration to those softwares it makes it a lot more challenging." (I1) - "And the [competitor product] hardware is quite a bit more flexible, there's a lot more different form factors versus where [CC] just has the one model, the one size fits all." (I7)	Lacking compatibility		

Amenability Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension

Quotes	1st Order	2nd Order	Aggregated
- "...if it's a small to medium sized business, that doesnät require an enterprise level software, we will use the [cc] entry manager. But if it's a large enterprise customer, where there may be, you know, hundreds of thousands of locations with, you know, thousands of personnel to be entered in the access control system, we'll partner with someone…" (I1) - "...the ability to tie it to other softwares…" (I1) - "Yeah, we use external software, as we made our own software for the unit." (I3) - "...we have large customers, it doesn't work with large numbers and cell phone opening." (I3) - "We always want to run our own software as as we want the ability to open with a phone." (I3) - "...we can go into customer and sell them with two to four, six doors, and the day that they wanted to increase it, you know, then it's on the head and like [company B], ant it was just straight in…" (I4) - "So, we can start small, and we can grow as soon as customers are ready." (I4) - "...will migrate them from entry manager to [company B]..." (I4) - "We use an external software for that big global account. For our smaller customers, we use the [CC] Entry Manager." (I4) - "I actually have both in use." (I7) - "The CC control pieces are limited to 32 doors. So its a product that we typically wouldn't sell. We don't like to sell anything that our customers may grow out of" (I3)	Adaptability to customer needs	Amenability	Functional Factor
- "...the ability to tie it to other softwares…" (I1) - "...the open standards for controlling the units server setups. They are as open as they can be, I guess." (I3)	Perceived flexibility		

Complexity Barrier

Quotes	1st Order	2nd Order	Aggregated

	Concept	Themes	Dimension
- "...it provides everything we need for your controller…" (I4) - "I don't think there's anything to improve. The product is quite easy to use and install, so there's nothing…" (I7) - "[...] it's a very capable product, you know, have less features, which is typically fine for that environment where people use it as an electronic key rather than a true access control system. (I1)	Technical Specifications are well comprehensible	Complexity Barrier	Functional Factor
- "The benefits of the product are pretty self-explanatory." (I1) - "...they are quite clear." (I3) - "Yeah, very clear value proposition" (I5) - "No, I think it's very clear, so I don't think it needs improvement." (I7)	Value proposition is clear		

Communicability Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "..I think that they listen to the partners and did the improvements…" - "...It works for the customer, because it's simple." (I4) - "I definitely don't have a problem giving [Local Sales Representative] my feedback on it." (I7) - "So we feel very, very satisfied in the level of support. You know, if there's any issues, CC is always there to help, to guide, to train." (I1)	Efficient Transfer of Knowledge and Information	Communicability Barrier	Functional Factor
- "I don't think that us or [CC] had, kind of thought about, ehm, you know, what, what kind of additional things it should have for larger clients or whatever service, it was initially, small client type setup that we were thinking about. And that's when we found, it doesn't have all of these things." (I5)	In-Efficient Transfer of Knowledge and Information		

Functional Risk

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...it's a very capable product, you know have less features, which is typically fine for that environment…" (I1) - "...then, once they see how versatile it is and how very cool. And I can control, I can plow, you know, with a click of a button…" (I4) - "...it works for the customers, because it's simple." (I4) - "...it's very functional, and we're pleased with this." (I4)	Positive Feedback Software	Functional Risk	Psychological Factor
- "...was a lot of manual entry from our side on the installation that caused the delay…." (I1) - "...I would rather have like a light version, that's for one door only." (I3) - "...it would be easier for us to have a cheaper hardware with less functionality actually." (I3) - "...there's just a few things that we need to consider when we have a higher density." (I4) - "...User-Interface, ehm, and the interactions with it. So just a flow of going through...entering in a new badge and creating stuff in there...that's where we've had...some slight hiccups with smaller customers…" (I5) - "It feels kind of, ehm, feels kind of clunky…" (I5) - "...I think that the door controller software that's on there could be a lot more robust…" (I5)	Negative Feedback Software		
- "Hardware is terrific." (I1) - "It's very simple for our technicians in the field to do the installations with the color coded, uh, ports for wiring.." (I1) - "...very low learning curve for our technicians in the field" (I1) - "...being able to export the wiring diagrams to deliver back to our customers is extremely helpful." (I1) - "We are very satisfied with the functionality." (I4) - "We sell some CC control platforms	Positive Feedback Hardware		

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...thing that could be improved… the speed of the hardware." (I3) - "...I*m limited to where I need to mount me a [case product], instead of having a bunch of these things on a wall...I can't put the controller at the door. It's harder to bring all these back to one room." (I4) - "We are running into experiences where we can't rely on the door controller to supply the voltage…" - "I'm satisfied with it, it's pretty self-explanatory." (I8)	Negative Feedback Hardware		
- "...almost 12 years we've been doing this, I think there is one ride of cameras we got." (I1) - [Case product?] "Nothing" (I1) - "And we have under ten...percentage. So it's not that much, I would say." (I3) - "You know, we all have issues with products every once in a while." (I4) - "We are running into experiences where we can't rely on the door controller to supply the voltage…" - "No, no, not at all. Been rock solid." (I7) - "[...] in Missouri, it's called the show me state. So, so people, people around here, just a little cautious to try new things." (I7)	Fear of mal-/dysfunctions		
- "They basically replaced all the cameras, haven't had a single issue since." (I1) - "...but I' very quick to bring those devices in and get them repaired and turned around." (I5)			

Economic Risk

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "The price is fair. Definitely." (I1) - ...I think it's very reasonable, right	Reasonable Pricing	Economic Risk	Psychological Factor

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- in line with, you know, market standards from a, from a price perspective." (I1) - "So I think it#s quite reasonable…" (I3) - "The price was a big driving factor." (I4) - "Whenever it came out, we started buying it immediately." (I4) - "And we can say that we could save a ton of money." (I4) - "...it's reasonable for like a small, you know, that only has a couple of doors." (I5) - "Overall, I think the product is a very savvy priced access control because it is all integrated into a single unit, including the software that runs it." (I7) - "...it's a very valued solution for the customer…" (I7)			

Usage Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...it's quite an innovative product and it stands out from the traditional access market." (I3) - "...other league than competitor, because the competitors are all locked down…" (I3) - "Yeah, I think that it compares, okay. There's a lot of other ones that are IP-based." (I5)	Induced Behavioral Change	Usage Barrier	Psychological Factor

Image Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...very satisfied in the level of support and the quality of the products." (I1) - "High quality, extremely high quality as well in presentation to customers. That's why, you know, it's it's absolutely for us, the number one manufacturer we deal	Positive Brand Image	Image	Psychological Factor

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "with, you know, overall, for sure." (I4) - "...we're extremely satisfied with their...there's always innovation…." (I4) - "I mean, we are huge fans of [...]." (I7) - "We don't want to go with a company that cannot support their own product and their answers. Well, I don't know where I've been down that road. And I've actually dropped companies because of that. But the quality, the looks, he ability for them to just function and keep functioning for way over the working period." (I7) - "And, and that it was made by [CC] and it works. So, whenever it came out, we started buying it immediately." (I4)			

Infrastructure

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...access to all the [CC] personnel that were responsible…." (I1) - "...as far as the personnel management, that had a lack of belief…" (I1) - "...we really love it, because the support we get from [CC] on it." (I1) - "...[CC] is always there to help, to guide, to train. That's been our big selling point internally..." (I1) - "...we have all the support we could ever need." (I1) - "...99% of the time, you call [CC] tech support...that's the thing we really like about [CC]. The ordering process is very, very simple." (I4)	Access to key people	Infrastructure	Organization Specific Factor
- "We did marketing videos…" (I1) - "We have like a close connection with the developers." (I3)	Synergistic investments		

Social & Culture

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...as far as the personnel management, that had a lack of belief…" (I1)	Not-invented-here syndrome	Social & Culture	Organization Specific Factor

Adoption Barriers: Authorized Partners

Value Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...because it's an open platform controller, so we are able to use it with [company A] which is also our partner." (I8) - "...being that it's an open platform is a really good thing…" (I8) - "...open-based give it another added advantage." (I8)	Openness of platform allowing more flexibility	Value Barrier	Functional Factor
- "...some of these products have, you know, are being commoditized. Video cameras have nearly been commoditized. So access control is also a little bit of a difficult thing to sell, unless we can, you know, show something new or, or different" (I9) - "One is because the network-based so it's easier to use, compared to some other controllers, which are not network based." (I8) - "...different technology for the controller, which is a plus, because some of the controllers, mostly, most of them actually are not open to open-based." (I8) - "...small maybe, when you get into larger aspects, I don't know, it could be kind of a more difficult process, just because of the bigger options that some customers might require, like a large industry application." (I2) - "There's a huge Asian product penetration in the market. And the price point ... I mean the difference is just huge. " (I9)	Product Feedback		

Quotes		
- "So it's sort of a more of a niche market. I suppose you could say for people interested in that." (I6)		
- "Some customer wanted this, that you can change it from like a small application to a larger application." (I8) - "...because of the fact that it's a very scalable product." (I6)	Scalability to customer needs	
- "...we need a software that gives us a complete vision of a control room, for instance, where we can control any number of sensors or access control and video etc and make that work as a whole." (I9) - "...this is not something that's been, you know, done traditionally by us, but some of these clients, they already have their audio, their heating, ventilation, air condition, integrated." (I9) - "There are some features, feature sets that I would like to see added at some point....just so that clients can control it from their phones. Because that did come up a lot." (I6)	Additional functions and features recommended	
- "...maybe [CC] can engage more in terms of creating awareness on the, on the product. End users and that ca make even our pitching better because they can be aware of the product and even when they see the pricing, they understand a bit more." (I8)	Create Market-Pull Effect	

Co-Dependence Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "But software part of it was also going to require a little work around running around to make it work" (I9)	Perceived need for additions/supplements	Co-Dependence Barrier	Functional Factor

Trialability Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...there's no local presence. So we had no possibility of testing it." (I9) - "No, I was not." (I6) - "We got a demo unit from their offices in Kenya which we did use for one of our presentations to the client." (I8) - "...we had a demo. We got to do some integration with it, programming on it before we actually installed it." (I2)	Opportunity to test not always given	Trialability Barrier	Functional Factor
- "It helped us land the deal [with the customer], so positive!" (I8)	Experience has been positive		

Compatibility Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "Yes, compatibility with [CC] product lines" (I9) - "We prefer to offer more integrated solutions so its better to use it together with [Company name A]..." (I8)	Compatibility with other innovations	Compatibility Barrier	Functional Factor

Amenability Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...we use the [CC] software." (I9) - "..it depends. It's a small installation, it's a great product, if it's a medium installation, it could be, you know, not the best solution. And if its a large installation, then it's difficult because he has these incumbents with great solutions as well…" (I9) - "Mostly we use it together with [Company name A]. Not the standalone system." (I8) - "Now we use the entry manager, unless it's going to be a large application. Sometimes you go for another software." (I8) - "No, I just use the built-in user-interface… I've never really entertained the idea of using	High adaptability to customer needs	Amenability Barrier	Functional Factor

Quotes			
a third party, so it never really crossed my mind." (I6)			
- "...I think we are looking into a third party, because there was a limitation apparently, on the I think it was a number of doors and the number of controllers that you could put them into." (I9) - "It's a little difficult, because we cannot sell the [CC] solutions to all clients." (I9)	Perceived flexibility		

Complexity Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...with this product in particular, I'm going to say it's fairly comprehensive." (I9) - "Most of the technical specifications were clear, for anything that has not been clear, we have a lot of support from the team that lives in Kenya." (I8) - "It's easy to use. And that's the main thing when it comes to the user." (I8) - "They described it pretty well." (I2) - "Yeah, only because we've done other card access systems though. But I think if you have no experience, I think you may have some growing pains with it. I don't know." (I6)	Technical Specifications	Complexity Barrier	Functional Factor
- "I think it is, I think it's fairly clear." (I9) - "Yes, we have been able to grasp the value of the network controller…" (I8) - "It was very easy. Once I showed it that they were pretty sold on it." (I2) - "Yes, very easy." (I6)	Value proposition is clear		

Communicability Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "For anything that is not clear, we have the team in Kenya. So okay, any questions we normally have we direct to them, and most of the time they're able to give us the answer." (I8) - "Yes, we have been able to grasp the value of the network controller…" (I8)	Efficient Transfer of Knowledge and Information	Communicability Barrier	Functional Factor

Quotes			
- "...the team in Kenya is very resourceful, they're able to assist us even during the design phase, so they also assist me in terms of the brand and understanding of the product. So for me, I think, ehm, their support is good." (I8)			
- "And the information that we sometimes believe is available on the website is not always available." (I9) - "But when we need to contact people, presale support or yeah, technical support. The website is sometimes not the best channel, for instance...the chat is not always available, some links are broken on the website." (I9) - "[CC] was just telling us, you know, informally things they did not want to commit." (I9) - "Communication was all verbal and nothing was written." (I9)	In-Efficient Transfer of Knowledge and Information		

Functional Risk

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "...it's user-friendly and it seems to be quick to connect." (I2) - "Yeah, I'm satisfied." (I6) - "I think it's fairly intuitive. The fact that it's drag and drop, I think it makes it intuitive and easy." (I6) - "But overall, reliability is good. Ease of installation is good. Just so that clients can control it from their phones. Because that did come up a lot." (I6)	Positive Feedback Software	Functional Risk	Psychologic al Factor
- "But software part of it was also going to require a little work around running around to make it work" (I9)	Negative Feedback Software		
- "The functionality is good. For the hardware we did not have challenges." (I8) - "For the hardware I am satisfied with its functionality." (I6)	Positive Feedback Hardware		
- "...there's a relay that happens, kind of something I would think would need to be changed because there's only one dry relay output. The second one energized. A lot of situations we run into, we're	Negative Feedback Hardware		

actually using now, it's just a trigger, a power supply. So it would be great if there was actually two dry outputs, that we could use for door one and for door two." (I2)		
- "We always have issues." (I9) - "...we do have a percentage of products that are either dead on arrival, or that we have to RMA the product within...a few months of having delivered it to the client." (I9) - "There has been a couple of bad cameras that we received but the RMA process is really easy. And so it really wasn't too much of a hassle." (I2) - Yeah, that's typical of anything. So, there was actually a camera. I don't actually remember the part number of it. But I've had a couple where they've become waterlogged." (I6)	Fear of mal-/dysfunctions	
- "It's usually very cumbersome for us, especially when, when they're related to Venezuela. There's no distributor...so shipping has to be done back to the US. So it's an issue that cost money." (I9) - "...the team in Kenya is very resourceful, they're able to assist us even during the design phase, so they also assist me in terms of the brand and understanding of the product. So for me, I think, ehm, their support is good." (I8) - "There has been a couple of bad cameras that we received but the RMA process is really easy. And so it really wasn't too much of a hassle." (I2) - "So, a huge component for me is tech support. And I find [CC] tech support very good. (I2) - "Yeah, well, they offered replacement. So I would say, very satisfied, because they ship you out the unit, and you can replace it and do it in one trip and return the defective unit, which I think is a huge bonus." (I6) - "But when we need to contact people, presale support or yeah, technical support. The website is sometimes not the best channel, for instance...the chat is not always available, some links are broken on the website." (I9) - "...the compliance person that we were assigned initially did not have the...say experience dealing with this type of compliance. So the answers were immediately negative." (I9) - "The [CC] people asked us as a channel to deliver the...news to the client, that the project had to be ended. And basically, we, we lost all credibility with the client. And months later, [CC] contacts us, look, we have good news, now we can do the project. And obviously, the client did not react positively" (I9)	Customer Service reacting to experience	

Quotes			
- "Sometimes we .. need a, the accompaniment of the [CC]...sometimes we do need a little more support from [CC]...[CC] was just telling us, you know, informally things they did not want to commit." (I9) - "...it's a little bit cowardly, when you're a huge company and you let the partner do all the dirty work." (I9)			

Economic Risk

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "The product seemed reasonably priced." (I9) - "The reasons were basically financial or economic." (I9) - "It seems to be working out. The customers are very happy." - "Yeah, I mean, it's definitely fair." (I6) - "...because we're not cabling a whole setup." (I6) - "...other brands sometimes make you buy a software, which can get expensive, especially for smaller systems." (I6)	Product is reasonably priced	Economic Risk	Psychological Factor
- "There's a huge Asian product penetration in the market. And the price point...I mean the difference is just huge." (I9) - "They're expensive products. You know, it's not a cheap product." (I9) - "...the price could be a bit cheaper for some customers, especially the small and medium enterprises, so they….might find it to be a bit on the head side. But for enterprise customers, replacing is ok." (I8) - "They do seem a premium. So it's sort of a, more of a niche market, I suppose you could say that for people interested in that." (I6)	High cost unit		

Image Barrier

Quotes	1st Order Concept	2nd Order Themes	Aggregated Dimension
- "I mean, we always go with the warranty, we go with the Swedish made...and the engineering and experience, etc." (I9) - "...what I would do good is quality, high end products. That's essentially what we got with [CC]." (I6)	Perceived Brand and Image reputation	Image Barrier	Psychological Factor

- "So, quality performance, typically they're up there, high quality you know, they perform as expected." (I6) - "We purchase quite a bit of CC. Our users, they always love CC, video platforms and all the features that can do." (I2)			

Appendix E

Interviewee 1 - 16.04.2019

Kerstin Nagl
[Interviewee 1], can you hear me?

Interviewee 1
I can. Good morning. How are you?

Kerstin Nagl
Perfect. Thank you. I'm doing fine. How are you?

Interviewee 1
Not too bad. I apologize for the confusion. When you originally sent out the invite, I realized that I double booked at the 10 o'clock eastern time slot. So I requested this time slot. So apparently it just didn't go through.

Kerstin Nagl
Ohh, that's what it was. It didn't go through I'm sorry.

Interviewee 1
Don't worry at all, I got about 20 or 30 minutes to sit with you guys to answer any questions.

Kerstin Nagl
Yeah, I think that should be enough. So should we dive right in? But before that, is it ok if we record you?

Interviewee 1
Yes sure, let's go for it.

Kerstin Nagl

Okay, perfect. So just to give you a brief overview. We are both students at Lund University. And we are doing a student consulting project and a master thesis. So the questions I'm going to ask you are a mixture for the consulting project and for the master thesis. So there might be some questions that might not make that much sense to you. And these are the ones that have a scientific background. So please bear with me.

Interviewee 1

Sure, no worries.

Kerstin Nagl

Okay, so first, as an introduction, what does your company do?

Interviewee 1

Our company is a solutions integrator. So we integrate technology across all spectrums. So we don't manufacture any hardware. And we don't write any software but we make, or we integrate open architecture, off-the-shelf technology to communicate amongst each other.

Kerstin Nagl

Okay. When integrating such technologies, what customer strategy do you pursue with your very own customers, meaning end-customers from [CC]'s perspective.

Interviewee 1

We have a focus on a lot of different products. So we are a networking company. In the IT network space we're a [company A] gold partner. We have a controls and automation, so an industrial controls and automation group. So the lights of [company B] and [company C] and you know, [company D] we integrate their technology. Ehm, We also do a lot in physical security, obviously, [CC] being our largest security partner, from a manufacturer standpoint. And then we have others. We have audio visual, such as [Company E], which is room automation and conference room controls. And then we also do a lot within retail. So that can be point of sale systems. That can be wireless technology, lighting technology. We have a very wide breath of technologies that we integrate with a variety of partners.

Kerstin Nagl

Great. How important is innovation and R&D to your company?

Interviewee 1

Ehm, Innovation is important to us, because as a technology company people expect us to provide solutions to them are not not necessarily cutting edge, but sort of more advanced of

what they can find with just sort of basic Google searches. So when suppliers and manufacturers come up with new ideas, like as an example, just using your phone for the card access or something, something as basic as that. That's sort of the conversation for us.

Kerstin Nagl
And how long have you been a customer of [CC]?

Interviewee 1
I think we're going at 12 years now.

Kerstin Nagl
Okay, that's quite a long time. So how frequently would you say do you communicate with [CC]?

Interviewee 1
Every day. (laughs)

Kerstin Nagl
(laughs) Okay.

Interviewee 1
Most likely, multiple times a day, there are people in my organization or myself directly that are communicating some sort of technical person or even the business development folks and the product managers.

Kerstin Nagl
So probably a mixture of email, personal phone?

Interviewee 1
Yep. Yeah, all the above. We're dealing with registration of projects through distribution companies. We're dealing with Tugg Speaking with a local RSM in each market to go and sell to direct end-users, then all the way through strategic relationships, marketing programs, and then even doing product testing, and consulting with the product managers. So my company, we pride ourselves, because we have a museum of [CC] products. And they have handwritten serial numbers on them. So they were the first products ever to be made.

Kerstin Nagl
Oh wow, that's interesting. And are you satisfied with the way you communicate with [CC]? Or do you think there's anything lacking or missing?

Interviewee 1

I am satisfied, I think, I don't know if there's any other ways to communicate that we don't use.

Kerstin Nagl

(laughs)

Interviewee 1

I would say that we're pretty tight. As a matter of fact, you know, we were at [exhibition name], and I had four different meetings with [CC] personnel, from marketing, to business development to general products to, ehm, you know, people from corporate from [city name HQ].

---SECTION2---

Kerstin Nagl

Okay, so going more in depth now and talking about the product, the [case product], I would be interested, if you had any chance to test the product prior to purchase?

Interviewee 1

We did, we do have a [case product] that has a handwritten series number on it, so you know, we were one of the first ones before it was even commercially available. And then we were also the first company to ever install it into commercial environment. Okay, so we had we had access to all the [CC] personnel that were responsible for the product, helping us out. We did a marketing videos, matter of fact, it's still up on your website, from when we did that first installation.

Kerstin Nagl

And how was the experience with the product itself? Did it fulfill all the expectation? Or was there anything that didn't work according to plan?

Interviewee 1

The only thing that didn't work was, I think we had some personnel as far as the personnel management, that had a lack of belief. And this has been a couple years ago, there were, ehm, was a couple of issues with the number of people we can put into the system, as well as being able to do Active Directory Integration, which was actually a known issue, but it

was addressed later in firmware updates. So, you know, initially, it wasn't real visible from a customer's perspective. But it was a lot of manual entry from our side on the installation that caused the delay in the installation.

Kerstin Nagl

Have you ultimately decided to invest into the [case product] for a customer?

Interviewee 1

Yes, so we have a number of customers that are running the [case product] right now, and we continue to sell it on a daily basis. Matter of fact, we're getting ready to start working with the [successor product of case product]01.

Kerstin Nagl

Okay. And how do you sell the product to the customers? Do you use to [CC] software? Or do you use external software?

Interviewee 1

A combination of both. So if it's a small to medium sized business, that doesn't require an enterprise level software, we will use the [CC] entry manager. But if it's a large enterprise customer, where there may be, you know, hundreds or thousands of locations with, you know, thousands of personnel to be entered in the access control system, we'll partner with someone like [company name F, pronounced wrongly], uhh not [company name F, pronounced wrongly], but [company name F, pronounced correctly].

Kerstin Nagl

And for the [CC] entry manager for [CC] own software, how satisfied are you with that?

Interviewee 1

I'd say we're very satisfied. Like I said, for the small medium business market, it's a very capable product, you know, have less features, which is typically fine for that environment where people use it as an electronic key rather than a true access control system. And then the ability to tie it to other softwares, ehm, you know, with video at a very limited scale, the entry managers are fulfilling our needs currently.

Kerstin Nagl

Okay, and the hardware, how would you estimate the hardware?

Interviewee 1

Hardware is terrific. It's very simple for our technicians in the field to do the installations

with the color coded, uh, ports for wiring, you know, as far as the schematics and then even using some design tools up front and being able to deliver the blueprints to wire up the controllers has been extremely easy, very low learning curve for our technicians in the field.

Kerstin Nagl

Okay, so the technical specifications are for your own organization, but also for your customers comprehensible enough?

Interviewee 1

Yes, especially once it's configured, installed and configured, being able to export the wiring diagrams to deliver back to our customers is extremely helpful.

Kerstin Nagl

How would you say is the comprehension of the value proposition, so the benefits of the product?

Interviewee 1

The, the benefits of the products are pretty self-explanatory. Typically, our customers already had an access control system or they're expanding to a new building that has no access control system, they may already have something within their enterprise. The value cell is there are challenges come to the limited integration with other larger access control systems that may already have, uh, they may already be embedded into those customers, like former [company name G] or [company name H]-style customers, without having the [CC] integration to those softwares it makes it a lot more challenging. Because typically an [CC] control, the customer will install, and then let it be until it dies and doesn't work anymore. So we get creative with with ourselves in tying into systems that were never traditional use practice control. So we're starting to do development with [case product] into industrial control systems. So when you go, see you had a factory that produced widgets, and there's workstations throughout the plant, and you only want authorized people to be able to gain access to these HMIs, you know, interfaces to the machines for safety purposes, we're integrating [case product] to be able to read a badge, do some biometrics to allow only authorized people. So utilizing the product in ways that was never intended to be used previous.

Kerstin Nagl

And do you see any possibilities for retrofits with the product? Or?

Interviewee 1 13:52

We do. Absolutely, we see retrofit capabilities and opportunities, it's just a much more

difficult sale, it usually takes a lot longer, and it's a lot more expensive for the customer. So there's, there's got to be a really good reason why we're going to switch them out.

Kerstin Nagl

Okay. And in comparison to competitor products on the market, do you see the benefits or the improvement of the [case product] in comparison?

Interviewee 1

We do I mean, we're a little biased (laughs).

Kerstin Nagl

(laughs).

Interviewee 1

But you know, I would say your biggest competitor, so [CC]' biggest competitor is [company name I] especially in North America. And the fact that that's open, truly open hardware where, you know, you have [company name G], [Company name H] and several others even utilizing the [company name I] boards. So that type of investment for a customer is typically a little safer in the fact that they can change their software, anytime. I see [CC] developing that ecosystem of software providers to be able to gain the same market share in the same level of comfort with the end-user. And I think that's where the big shift will start to happen is when that ecosystem of software partners grows and expands.

Kerstin Nagl

And overall, would you say the investment into the [case product] is reasonable?

Interviewee 1

Yes, yeah, I think it's very reasonable, right in line with, you know, market standards from a, from a price perspective. Uh, we really love it, because the support we get from [CC] on it. You know, if there's any issues, [CC] is always there to help, to guide, to train. That's been our big selling point internally, in fact that we have all the support we could ever need.

Kerstin Nagl

So overall, you would say that you in general trust [CC] products in regards to quality and performance results, no matter whether it's a product you've tested before, or whether you've seen it before, or whether it's something you've already seen and tested.

Interviewee 1

Yep. Yeah, like I said, we do a lot of alpha and beta testing. Because even, even if we're

warned that it may have bugs in it, and that may not function properly, we've rarely run across that case where even the alpha or beta products come out and they have a better quality than some of your competitors that have been on the market for years. So we feel very, very satisfied in the level of support and the quality of the products.

Kerstin Nagl

But have you experienced any issues with the product in regards to malfunctions or dysfunctions?

Interviewee 1

There is, you know, I think, almost 12 years we've been doing this, I think there is one ride of cameras we got. It was less than I would say 50 that we had some problems with the imagers, it would be online for maybe 60 days, and the cameras would look to go out of focus, but nothing we could do could get them back into focus, and then [CC] made that right. They basically replaced all the cameras, haven't had a single issue since. So, yeah. That was that's the worst case we've ever had.

Kerstin Nagl

So nothing for the [case product]?

Interviewee 1

Nothing.

Kerstin Nagl

Okay, so that's actually already the end of the interview. The last question that I would have is, if there is anything else you would like to add in regards to feedback or experiences, or insights in regards to the [case product] or the door access control and how [CC] would like to go into that market.

Interviewee 1

My recommendation would be to expand the software. Integration partners, build out that bigger ecosystem of companies like [company name J]. [Company name J] is a great company, they have tremendous software, they don't have a lot of brand recognition. So it's a little harder to penetrate the existing access control market, it's very slow, slow-to-adopt market. You know, it's one of those things if it works, don't, don't break it, don't try and fix it. So the more the ecosystem of software can develop, I think the quicker the adoption of the [case product] and [CC successor product of case product] will come.

Kerstin Nagl

Okay. Perfect. Thank you very much for your feedback. Senah, do you have any additional questions?

Senah Abou Taha
First of all, hi. I sneaked in. No, I'm actually good. Thanks a lot for the interview. I thought it was very insightful. And yeah, again, sorry about the slight delay, ehm, the misunderstanding, we had.

Interviewee 1
No problem whatsoever, that was my my fault anyway. So, don't, don't worry about it whatsoever.

Senah Abou Taha
Okay, perfect. Yeah. Then that's all from my side.

Kerstin Nagl
All right, then thank you very much for taking the time to speak with us. It was a pleasure to talk to you. And also to get your insights. It was really valuable feedback that you've given us. All right. Perfect. Thank you very much again, and have a lovely day.

Interviewee 1
Thanks so much. Bye bye.

Senah Abou Taha
Thank you. Bye Bye.

Interviewee 1
Bye.

--------------------------- END OF INTERVIEW ---------------------------

Interviewee 2 - 17.04.2019

Kerstin Nagl
[Interviewee 22]?

Interviewee 2
Yep.

Kerstin Nagl
Oh, hey, are you doing?

Interviewee 2
I'm good, thanks.

Senah Abou Taha
Great. Can you hear us clearly?

Interviewee 2
Yep.

Senah Abou Taha
Perfect. So yeah, first of all, thank you for taking the time to speak to us today. I'm Senah and I'm here with my colleague, Kerstin, who's sitting in Sweden right now, and we want to ask you some questions about your customer experience with purchasing the [case product]. And also in general, we would, ehm, like to learn more about your relationship with [CC]. Just so you know, we are also currently working on some scientific research. So some of the questions may seem a little abstract to you because there's some theoretical concepts encoded in them. So yeah, just try to answer anyways.

Interviewee 2
Yeah.

Senah Abou Taha
Perfect. Then before we start, is it okay if we record you?

Interviewee 2
Yeah that's fine.

Senah Abou Taha
Perfect, it's all gonna be treated anonymously. Great. So then let's start I would say, do you have any questions in advance?

Interviewee 2
Uh, No.

Senah Abou Taha

Perfect. All right. So first of all, what does your company do? What are your firm's strategic objectives?

Interviewee 2

We're a electrical contractor, we do uh, high voltage electrical controls, and our low voltage divisions access control, video surveillance, intrusion, voice data fiber.

Senah Abou Taha

Okay, ehm, we're also trying to compare your company to [CC] and, you know, [CC] is really into R&D and innovating. This was one of the core values of [CC]. And we were wondering how important are these values to your firm.

Interviewee 2

Sorry, what was that?

Senah Abou Taha

So, basically, we're trying to compare your company's core values to ours, at [CC]. So for [CC] R&D and innovating at a high frequency is of high importance. How about your firm, do you invest a lot into R&D and into developing innovations.

Interviewee 2

Well we're more a public RFP type of company. Okay, we have customer relations though as well, existing customers that we do quite a bit of work with and work with other contractors abroad on this project.

Senah Abou Taha

Okay. And do you have similar partner network network as that of [CC]? How do you interact or what strategies do you pursue with your customers basically?

Interviewee 2

Ehm, I mean, we use quite a bit of [CC] but we also have other manufacturers that we work with as well. As far as video surveillance, it's [company name A], or [company name B] or [company name C]. And ehm, as I said, we're an RFP type of company, so that's how we interact with our customers.

Senah Abou Taha

Okay, and how long have you been a customer of [CC]?

Interviewee 2

Well, at this company two and a half years but the previous company 12 years.

Senah Abou Taha

And what do you mean by previous company?

Interviewee 2

My former employer. They also purchased [CC] products.

Senah Abou Taha

Okay, perfect. And in your current company, how frequently do you communicate with [CC]?

Interviewee 2

Well, a couple of times a month, maybe 3-4 times.

Senah Abou Taha

Okay and what, what channels do you use to communicate. Just mails or do you have personal communication as well?

Interviewee 2

Cellphone, just phone calls.

Senah Abou Taha

Ah, okay. Perfect. How satisfied are you with that current state of communication?

Interviewee 2

I'm sorry, what was that?

Senah Abou Taha

How satisfied are you with your communication with [CC]?

Interviewee 2

Uh, okay, I'm pretty satisfied. They're helpful.

Senah Abou Taha

Okay. So do you have any recommendations on how to improve the service? Do you have any wishes?

Interviewee 2

Ehm, it seems to be a good process, really.

Senah Abou Taha

Okay. Ehm, in those two and half years that you've been working with [CC], have there been any conflicts or failed agreements that occurred within your collaboration?

Interviewee 2

No.

----------------- Section 2 -------------------------

Senah Abou Taha

Okay, that's good to hear. Now we're going to dig deeper into the product itself, the [case product], and how you perceived purchasing it and so on. So first of all, before purchasing it, have you been offered to test it?

Interviewee 2

Yeah, we had a demo. We got to do some integration with it, programming on it before we actually installed it.

Senah Abou Taha

Okay, and what experiences have you made during this trial phase, anything positive or negative that comes to your mind.

Interviewee 2

I mean, there's a, there's a relay that happens, kind of something I would think would need to be changed because there's only one dry relay output. The second one energized. A lot of situations we run into, we're actually using now, it's just a trigger, a power supply. So it would be great if there was actually two dry outputs that we could use for door one and for door two. That's the only thing I can think of really.

Senah Abou Taha

Okay. But since you've experienced this issue in the trial phase already, what were your reasoning to still invest into this product?

Interviewee 2

Some customers wanted this, that you can change it from like a small application to a larger

application.

Senah Abou Taha

Okay and were there any factors that make you hesitate?

Interviewee 2

No, not really.

Senah Abou Taha

Okay, so you were clear from the beginning, good. How would you evaluate the investment into the [case product]?

Interviewee 2

It seem to be working out great. The customers are very happy with the product.

Senah Abou Taha

Okay, so you think it's reasonable?

Interviewee 2

Yeah. It's easy to use. And that's, that's the main thing when it comes to the user. They don't like stuff that's complicated. (laughs)

Senah Abou Taha

That's for sure. We all know that. (laughs) Well, coming to the end users, how exactly do you sell the product to your end customer? Do you use the [CC] internal software, the entry manager, or do you use an external software?

Interviewee 2

Now we use the entry manager, unless it's going to be a large application. Sometimes you go for another software.

Senah Abou Taha

And what do you think about the openness/customizability aspect of the product. How would you evaluate that?

Interviewee 2

No, as I said, it's user friendly and it seems to be a quick connect.

Senah Abou Taha

So you are satisfied with the functionality of the [CC] software? (Silence). Hello?

Interviewee 2
Yep. I agree. Yes. Perfect

Senah Abou Taha
How satisfied are you with the functionality of the hardware?

Interviewee 2
I'm satisfied with it, it's pretty self-explanatory.

Senah Abou Taha
Okay. And that's also the main feedback you have received from your customers

Interviewee 2
Yes, definitely.

Senah Abou Taha
Okay, the next one is a rather abstract question. How comprehensible were the technical specifications of the product when it was sold to you?

Interviewee 2
It was pretty immediate. They described it pretty well. And I had a good relationship with [CC] for a while.

Kerstin Nagl
But did you feel like there was any information missing or was there anything you needed?

Interviewee 2
I'm sorry, what was that?

Kerstin Nagl
Did you receive all the information that you needed? Or did you feel like there was something missing?

Interviewee 2
No, no, they explained everything pretty well to us, ehm, ran through all the technical aspects of it.

Senah Abou Taha

Also with regards to the value and the actual solution, was that comprehensible to you? So apart from data sheets and all the technical stuff?

Interviewee 2

Yup.

Senah Abou Taha

Okay, great. And how easy was it for you to pass this information that you received on to your customers to explain to them the technical specifications of your end product as well as the value proposition and so on?

Interviewee 2

It was very easy. Once I showed it that they were pretty sold on it.

Senah Abou Taha

Okay, ow would you evaluate the benefits of this product, the [case product], to competitor products, maybe products you have previously purchased in that segment?

Interviewee 2

Ehm, Small maybe, when you get into larger aspects, I don't know, it could be kind of a more difficult process, just because of the bigger options that some customers might require, like a large industry application.

Senah Abou Taha

Ok, anything else that comes to your mind?

Interviewee 2

Nope.

Senah Abou Taha

Okay, ehm, how would you evaluate [CC] products in general in regards to their quality and performance results? Have you by any chance purchased other products from us?

Interviewee 2

Oh, yeah, we do. We do video surveillance and access control, we have purchased. We purchase quite a bit of [CC]. Our users, they always love [CC], video platforms and all the features that can do.

Senah Abou Taha

Okay. And have you experienced severe issues with product, malfunctions or dysfunctions, something like that in the past?

Interviewee 2

There has been a couple of bad cameras that we received but the RMA process is really easy. And so it really wasn't too much of a hassle.

Senah Abou Taha

Did I understand correctly? There's some bad cameras you said?

Interviewee 2

We had like maybe two or three cameras that were shipped to us from the factory, I assume they were damaged during shipping. Yeah, that happened.

Senah Abou Taha

In these cases where they were damaged them has [CC] Customer service provided sufficient help to solve the issue?

Interviewee 2

Oh, yeah. I mean, we always talk.

Senah Abou Taha

Great. And actually, this would be our last question. It's rather open question where we just want to ask you if there's anything else you would like to add in regards to feedback or experiences with regards to the [case product] in particular. Any last comments you have?

Interviewee 2

Ehm, no, I think I said it all.

Senah Abou Taha

Okay. Perfect. Then this was it from our side. Kerstin, do you have any additional questions?

Kerstin Nagl

I actually do not but thank you very much for taking the time to interview with us. We got some really valuable things. Thank you very much.

Senah Abou Taha

No problem. Thank you. Bye Bye.

Interviewee 2

Thank you. Bye.

-------------------------- END OF INTERVIEW --------------------------

Interviewee 3 - 18.04.2019

Kerstin Nagl

Hi, [interviewee 3]? Can you hear us?

Kerstin Nagl

Hello?

Interviewee 3

Yeah, yeah, I can hear you. Can you hear me?

Kerstin Nagl

Yeah, perfect. Hi, how are you doing?

Interviewee 3

Sorry, I'm late. It was quite hard to join [communication platform name] by mobile phone.

Kerstin Nagl

Oh, sorry about that.

Interviewee 3

Oh, it's not a problem.

Kerstin Nagl

Okay, so just to give you a brief introduction, I'm Kerstin and I'm here with my partner Senah. We are both students from Lund University doing our master's degree. We are collaborating with [CC] for a consulting project for students, and also for our master thesis. So we would like to ask you a couple of questions that have a mixture of our consulting project, where we will focus on the product itself, but will also ask you a couple of questions for our master thesis that half a scientific background and might seem a bit weird to you. So I just hope you can elaborate to the best of your abilities.

Interviewee 3

Yeah, no problem.

Kerstin Nagl

Ok, is it ok if we record you?

Interviewee 3

Sure, go ahead.

Kerstin Nagl

Okay, so as a start, I would like to ask what your firm's strategic objectives are?

Interviewee 3

Yeah, we're doing software for [CC] access control. Our objective is to built a platform that can have...ah... both cards and cell phone as a way to access doors to some buildings. So that's ... that's the short version of what we are doing.

Kerstin Nagl

Do you solely focus on software? Or do you also focus on hardware?

Interviewee 3

We only focus on software, the hardware is is something that's necessary to upload the software.

Kerstin Nagl

Okay.

Interviewee 3

So we try to work with [CC] partners, so they will sell the hardware, and we will have the software to do that.

Kerstin Nagl

Okay. And in regards to seeing the similarities between [CC] and [interviewee company], [CC] is focusing a lot on R&D and innovation. Would you say that's also something that's of high value for your firm?

Interviewee 3

Yeah, it is. We actually worked quite closely with [CC] regarding R&D. We have, last week, their R&D team, for New Business was here in our office. So we work very closely with [CC] on R&D.

Kerstin Nagl
Okay. And on another perspective, [CC] focuses quite heavily on its partner network and values it quite highly, do you have something similar with your customers? Or do you pursue a different strategy?

Interviewee 3
No, we actually used to copy the strategy that [CC] has as our customers will be [CC] partners, we have the same kind of partner setup with the different levels, they are transparent to the [CC] levels. So it's, it's more or less a copy paste of the setup.

Kerstin Nagl
Okay. And how long have you been a customer of [CC]?

Interviewee 3
Almost 10 years.

Kerstin Nagl
And how frequently do you communicate with [CC]?

Interviewee 3
Ehm, I'd say on a daily basis.

Kerstin Nagl
Do you use different channels for that? And if so, what channels?

Interviewee 3
Yeah, we have our sales contact, which is [name of CC sales representative]. We communicate with him, at least every day. I would say that we have a lot of developers we have direct contact with and also some of the product managers in different areas of [CC]. So I would say that is a lot of it might be 10 people something that we have regular contact with within [CC].

Kerstin Nagl
How satisfied are you with the current communication?

Interviewee 3

As satisfied as I could be. I have nothing to complain about.

Kerstin Nagl

Okay, so you don't see any way how [CC] could improve its communication with you in the future?

Interviewee 3

I will say no, because I think we we always get what we asked for. They're always... like... responding to us. So obviously, it works perfect. As flawless as it is right now. For us at least.

Kerstin Nagl

Have there been any conflicts or failed agreements in the past?

Interviewee 3

Yeah, it's been one conflict, a couple years ago, it was like, maybe five years ago, where we did a hack that showed a vulnerability in the set up with [CC] hardware. But that was solved quite easy. I can't really blame [CC] for that conflict. It was rather us being a bit aggressive, I guess.

Kerstin Nagl

Okay. So [CC] handled that quite well, from your perspective?

Interviewee 3

Yeah.

---------------- Section 2 -------------------------

Kerstin Nagl

Okay. So within the next couple of questions, we would like to focus on the product on the [case product]. So prior to purchase, have you had the opportunity to test the product?

Interviewee 3

Yeah. We had, like the first Beta-version.

Kerstin Nagl

And what has your experience been with the Beta-Version?

Interviewee 3

Eh, I will say that this has been good. But there's a lot of things that could improve. And I think that they listen to the partners and did the improvements necessary with the next two days, that was the [successor of case product]01. So I can't really complain, because I think that they solved all the problems with the performance and such with the A8001 or so with the next release, so yeah.

Kerstin Nagl

So even though you initially had a couple of...well, yeah, a solid experience during the test face, you still choose to invest into it at a later stage. Could you elaborate what the reasonings for that was?

Interviewee 3

I would say that it's quite an innovative product and it stands out from the traditional access market. So I would say that. Being power ready and to have the ability to work with APIs and add users and everything in a fashion that's more common in IT world that this access control works, I would say that this is a really good product. But, ehm, as it's so innovative, it was quite early, like they had some minor bugs, like logical issues with the first setup of software that was running on the [case product]. But I think that they fixed it quite fast. I don't really have a problem with it, because I can see how a product that is this edgy would have some problems during, like test phase, in the beginning. So I think it's quite reasonable to think that the product like this needs some tuning before it's ready for production.

Kerstin Nagl

And how do you sell the product to your end customers? Do you use the [CC] software? Or do you use external software?

Interviewee 3

Yeah, we use external software, as we made our own software for the unit. So we only use external software.

Kerstin Nagl

But how, in general, would you rate the openness, or the customizability of the product itself?

Interviewee 3

Very high. As everything that we do in our software is connected to the API, that is this... the open standards for controlling the units server setups. They are as open as they can be, I guess.

Kerstin Nagl

So overall, from a hardware perspective, you don't see any functional risks or is there any way that can be improved?

Interviewee 3

Yeah, I think the thing that could be improved, would be like, the speed of the hardware. And I think that they're doing improvements with that already, as the other version, the [successor of case product]01 is faster. So I would say that it's ...just make it go faster, I guess. I think that they have come a long way. That is, they are improving. So I couldn't really complain on speed either, because I see a lot of improvements been taught there.

Kerstin Nagl

Okay. And in regards to the software, you already mentioned that you're using your own but have you had a chance to test the entry manager from [CC]?

Interviewee 3

Yeah, and it doesn't work... Like a couple of....companies have a couple of doors. And that's the problem for us, because we have large customers, it doesn't work with large numbers and cell phone opening. So it's not a product for us. The latest version, [successor of case product]01, they disabled the entry manager. So, the entry manager has never been a focus for us. We always want to run our own software as we want the ability to open with a phone.

Kerstin Nagl

Uh huh. Okay. And in regards to the technical specifications of the product, were they comprehensible enough for your organization?

Interviewee 3

Yeah, I would say so. The thing is that they can control two doors with each thousand watt. And I would rather have like a light version, that's for one door only. Because that's the normal setup process one door. So it would be easier for us to have a cheaper hardware with less functionality actually.

Kerstin Nagl

Okay. And how easy is to translate that knowledge to your customers? Do you think you have all the information that you need from [CC]? Or do you think there's something missing?

Interviewee 3

Yeah, I don't think that....when we sell it to customers, they don't really... don't care about the hardware and all, based on functions. So, I would say it doesn't matter for the customer, it could be another browser, could be whatever. This is more for us to have, like hardware that we can trust when we deliver services.

Kerstin Nagl

And what about the value proposition of the product? Is it clear enough what benefits the product has?

Interviewee 3

Yeah, I would say so, because...they are quite clear.

Kerstin Nagl

Okay. And overall, how would you evaluate the benefits or the improvement of the product in comparison to competitor products?

Interviewee 3

I would say that this is a complete, other league than the competitor, because the competitors are all locked down, so we can not do our software with any other competitors. So we're quite happy that [CC] has this hardware, because otherwise our software, our business wouldn't exist.

Kerstin Nagl

And overall, how would you evaluate [CC] products in regards to quality and performance?

Interviewee 3

Very high. Performance was ...eh... on the access control side, I think they have some way to go. They need to improve their performance. But overall for cameras and all the hardware that [CC] has, performances... that stability is key value for me, as we deliver everything as a service, we need know that the hardware will work. So we're happy with the quality.

Kerstin Nagl

And in regards to the [case product] or any other product. Have you ever experienced any issues with malfunctions or dysfunctions?

Interviewee 3

Yeah, but... yeah, I have, but it's not that much, it is a couple percentage. And we all got like, we have gotten replacement units straight away. There's never been a problem with. I would say that we have delivered 1000 units or more, maybe freed up to 5000 units from

[CC] in the last seven years. And we have under ten ....eh.... percentage. So it's not that much, I would say.

Kerstin Nagl

Okay, so we've actually already reached the end of our questions. Now, the last question that we have is whether you have anything else to add in regards to feedback or experiences with the product, but also in regards to [CC] wanting to move more strongly in an access control space?

Interviewee 3

That's a big question. I would say that they are doing whatever they can. We have like close connection with the developers. The R&D team and the whole of [CC] has for the future. I think that's right. It's quite good work with both what we want to do as a company as well. So I don't think that there's anything that I could add that hasn't already been up for discussion with [CC] before. So I think the future looks quite good.

Kerstin Nagl

Okay. Oh, Senah, do you have any additional questions?

Senah Abou Taha

No, nothing from my side. Your feedback has been very insightful, so thanks for that, definitely.

Kerstin Nagl

I have to agree, you give us a lot of really good feedback that we can use both for the project but also for our master thesis. So thank you very much. Also for taking the time to talk with us. Really appreciate it. And have a great day.

Interviewee 3

Thank you. You too. Bye.

Kerstin Nagl

Bye bye. Thank you.

-------------------------- END OF INTERVIEW --------------------------

Interviewee 4 - 24.04.2019

Senah Abou Taha

So first of all, thank you for joining us, for taking your time to speak to us today. I'm Senah and I'm here with my colleague, Kerstin, who's going to be taking notes today. And basically, what we're going to do is, we want to talk about your relationship with [CC], first of all, and then go into your experience with purchasing and using the [case product]1. And just so you know, beforehand, we're also conducting research. So some of the questions might seem a little odd and even a little abstract, because we've encoded some theoretical concepts on them. But yeah, just ask whenever you have questions. And also, since we're doing that for research, partly, we would like to ask whether we could record you?

Interviewee 4

Yeah that's perfectly fine.

Senah Abou Taha

Perfect. Okay. Then let's start. First of all, what does your company do? What are your strategic objectives?

Interviewee 4

So we are obviously a system integrator. We, we specialize in CCTV, access control, fire alarm, audio, video, intercom solutions, TV solutions, you know, so we, we do all low voltage systems.

Senah Abou Taha

Okay, and how important is R&D and innovation to your firm in that context?

Interviewee 4

Very important. I mean, we're always trying to suit our customers' needs. It's .... not everything fits in the same box, if that makes sense.

Senah Abou Taha

Sorry, can you elaborate on that?

Interviewee 4

Sure, well, we want to have, you know, we like to present leading edge technology, sometimes bleeding edge, which is hard to say, but we don't... we don't depend on the customer, whether we present leading edge or for, you know, that kind of technology to our

customers. Because sometimes, we have to think outside of that box and present, you know, solutions and services. Because there's a need, and we're trying to create a need or create a solution out of the need.

Senah Abou Taha
That make sense. Okay. And then [CC], as you might know, emphasizes heavily on its partner network. Are you an authorized or a gold partner by the way?

Interviewee 4
We're gold.

Senah Abou Taha
Gold. Okay, perfect. What relationship strategies do you pursue with your customers, independently from [CC]? We're just trying to compare you with [CC] as a company.

Interviewee 4
Okay, can you repeat the question?

Senah Abou Taha
So basically, what we want to know is about [CC]' Partnership Program, and that they're very network oriented. So you're, for example, a gold member within that program. However, what strategies or what relationship strategies do you pursue with your customers?

Interviewee 4
Oh, I got it. So I guess that's ... that's an interesting question. We, we don't necessarily have programs with our customers. But we do pick and choose our customers, if that makes sense. So, sometimes we've had to fire customers, because they're a pain in the butt. And, they don't get it. And, honestly, we're, we do partner with all of our customers in the sense that we commit to them, that we will provide, you know, goods and services and be there to fight for them, and bring them the solutions, a new technology. But if it's a one way street, it doesn't work. Like you said, it's got to be a partnership. And I think [CC] does that for us. And we do that for customers, where we provide innovative, you know, solutions, as well as a high level of service capabilities from our technicians. And we're always looking out to, to make sure that our customers, you know, are being taken care of, and they don't have to go somewhere else. But at the same time, if if we can't provide a solution, we will suggest another, another supplier, if that makes sense for somebody that if it's outside of our wheelhouse that we can't do, we'll bring in partners that will help create that solution or, or pass them off to somebody else.

Senah Abou Taha

Okay, great. So how long have you been a customer of [CC]?

Interviewee 4

We have been buying [CC], I would say since we've been in business. 16 years or so? 15, 16?

Senah Abou Taha

Oh, wow. That's quite long. Okay. And how frequently do you...

Interviewee 4

(interrupts) Yeah, sorry. Well, I was just gonna say, I mean, if it's a good reference, [CC sales representative] was a brand new rep when when we started selling [CC] and has been with us since the start. He's now a big important guy with 33 reps ... you know, that's the reason why we stay with [CC] during the 16 years.

Senah Abou Taha

That's great to hear. And how frequently have you been communicating with [CC]? How often does it happen? Once a year or twice a year? Like, tell me more about that?

Interviewee 4

Well, so my communication with [CC] happens on a at least weekly basis. If, if not more often, but my technicians, IT manager there, they're talking to [CC] once or twice a week, depending on what the, what's going on, you know, our sales guys here, are always communicating whether it's directly with... directly with, you know, our, our channel, we buy into [CC], you know, on a weekly basis, you know, registering the project, or talking about products and solutions for a customer or, you know, there's a lot of communication going on.

Senah Abou Taha

That's great. But do you do that mostly personally? Or per email? What is your main communication channel?

Interviewee 4

Everything I mean, we will call our rep or will text them. Or if it's a project, for instance, face and work mailing, something with multiple communication formats were.... just for simple questions, you know, if, if a text message to our rep or, hey, listen, I got this one project, I need you to come out here and take a look at it with me, you know, next week. So,

you know, we'll send out emails or we have plans, we have a design that we need to go through and we're.... [company name A] is pretty self sufficient, where we do lots of estimates on our own. We bounced around quite a bit, but not necessarily. I would say that we don't bounce as many questions off as some companies do. We're more independent, I think it is, but we still communicate on it, at least on a weekly basis on the sales side, and often on, on the installation side.

Senah Abou Taha
Okay, and how satisfied with this current state of communication?

Interviewee 4
Very satisfied. There's no issues with communication.

Senah Abou Taha
Okay, so you you don't see any room for improvement? Any suggestions?

Interviewee 4
Well, I mean, there's always room but I don't know how to improve. You know, the last thing I want... So here's my take on that is, if you want to improve communication, you know, make your people more available, but you have a good product, and it's very high in demand. So don't make your people more available, because they're taking care of the business that needs to be taken care of. And I don't want to lose that personal touch, I'd rather have the people that we're talking to and, and get more more .... coherent... versed on the product and be able to sell solutions. And if I really need a question answered, then we'll shoot it out, whether it's a phone call a text or an email. And those questions always get answered. You know, things never go unanswered. So, so room for improvement. That's that's kind of hard to say. I think your guys are pretty smart. And if they don't know the answer, they're going to find the answer pretty slick. And quite honestly, I've got three or four people and even my inside sales guys that I can bounce questions off of if I need to, with everybody, you know, works as a team to get going or to get the answers to so. Well, I don't.....don't want to see channels change, per se.

Senah Abou Taha
That's great to hear.

Interviewee 4
I mean, yeah, I mean, the relationship, they have had that relationship. So... So keeping that relationship solid, is more important, we've been adding more people to try to solve really kind of a non-existent problem with guys, we....

Senah Abou Taha

True. True. You gotta build up that trust. So, the last question of this section would be, have any conflicts or failed agreements occurred within your collaboration with [CC]? And if so, how has it been handled between you and [CC]?

Interviewee 4

Well, I mean, I think the, the only big issue we've had is back-ordered products, not necessarily knowing when, when the product is, I mean, we make a big order, man, we don't even find out that it's backed up for a while, and then we're trying to figure out how we're going to solve this, you know, and, and then we get a ship date, and then later on that ship, it changes, and then later on that ship changing is kind of hard when we're held hostage, if you want to say that. That's kind of a hard word, we're held hostage to... you know, the [case product]1, it's going to be delivered in six months, you know, and when we go to a customer saying, hey, by the way, your projects going to be delayed for six months, or three months, for 30 days, it's kind of hard. So please beat up, we've beat up our routes pretty hard about the product availability and communication, see what we can do. And if there is another solution. Then, you know, we've gone through that, but that's really the ....only... when there is back holder product, communicate with us, let us know that, and that happened last year, it was really rough last year, in my opinion, as far as some products, you know, when there's a new product comes out, everybody wants it. So now we gotta, you know, somehow we gotta scale for that, or plan for that. You can have anything new for six months, something like that. So [colleague of interviewee 4] is in here, one of my favorite guys, estimators. He says, maybe there should be a hierarchy of ...Hey, listen, if there's a shortage of products, gold partner get first dibs on that product. You know, that would be kind of cool to see. If all the right people, you know... hey, they go to the back of the line. You know, I don't know if that's always happened happening or not?

---------------- Section 2 -------------------------

Senah Abou Taha

Ok I understand. We will forward this information to out tech support. Alright, now... Actually, we want to dig a little deeper into your experiences with this product now and have some more questions prepared for you. So let's see. First of all, have you been offered to test the [case product] prior to purchasing it?

Interviewee 4

That was a long time ago. This one's been around for a long time. So we've been buying that thing forever. And we can... we're now, you know, because we're for [company name B],

the lead distributors. So we were buying the [product line extension product of case product] now. The title when we will buy on, on, you know, still with standalone customers, everything else but the [product line extension product of case product] is more for [company name B]. You know, we... I don't.... I do remember, I do think we did get an alien back in the day.

Senah Abou Taha

Alright, because my next question would have been actually what experiences you've made during the trial phase, like, whether it has helped you that you could use it, or test it beforehand. But I mean, then, probably I should go to the next question since you do not really remember. Because unfortunately, this study focuses really on the [case product]. So all the upcoming questions will revolve around that product and not the [product line extension product of case product]. But let's see for the next question. Ehm, what were your reasonings to invest in the[case product]?

Interviewee 4

That was a long time ago. Capability. Functionality. The price was a big driving factor. And, and that it was made by [CC] and it works. So, whenever it came out, we started buying it immediately. When was it that the [case product]1 came out again?

Senah Abou Taha

That was 2013, quite a while ago. But were there any factors that made you hesitate?

Interviewee 4

No. So... I mean, we were working with it and it was good. We wanted to make sure it works. But the second means... the first thing we asked is the question if it works for the project. Absolutely. So boom, done, we're off. And we can say that we could save a ton of money. So, you know, summing up and... and it was pretty close.

Senah Abou Taha

Ok, that actually is also my next question, I wanted to know, like, how would you evaluate the investment into the [case product]1? So from your statement I can assume that you evaluate it as reasonable?

Interviewee 4

Well, for us, it was, I mean, I don't know about the rest of the country, but we, we, we found immediate, you know, an immediate advantage over a lot of other people by using the [case product]1. And we can...we can go into customer and sell them with two to four, six doors, and the day that they wanted to increase it, you know, then it's on the head and like [company

name B], and it was just straight in and there, you know, then then we have an enterprise level system that ... So, we can start small, and we can grow as soon as customers are ready.

Senah Abou Taha

Okay, great. So, ehm, how do you sell the product to your end customers? Meaning, do you also use the [CC] entry manager? Or do you solely use the external software?

Interviewee 4

Yes. You know, we will, depending on the customer, if the customer only have a small.. so, you know scope and they're not necessarily putting new cameras in or they don't want unified access and CCTV. We'll do ...will come in with an [CC] Entry Manager, we start small with them, then once they see how versatile it is and how very cool. And I can control, I can plow, you know, with with a click of a button instead of repeating my door, when you know, will migrate them from entry manager to [company name B] or just start with [company name B]... sitting on the customer.

Senah Abou Taha 19:22

So that sounds like that the openness and the customizability of this product is really well, you really benefit from that. So you consider that a major advantage, I assume..

Interviewee 4

Yep, totally.

Senah Abou Taha

Okay. And how satisfied are you with the functionality of the hardware only?

Interviewee 4

Really satisfied. We are very satisfied with the functionality. It's a...you know, all trying to remember there was a relay. I'm just trying to remember what hasn't worked. But....

Senah Abou Taha 19:54

Come again?

Interviewee 4

With the functionality of the hardware....

Senah Abou Taha 20:01

Okay. Let's just move to the next question for now. I mean, you already talked about the software, the [CC] entry manager, but is there any comments, you still want to make? Like, again, room for improvement? Are you satisfied? How satisfied are you?

Interviewee 4

I think we're satisfied with the entry manager. I don't ....we don't, you know, when we use it is very, it works for the customers, because it's simple. That makes sense. Yeah. You know, it provides a a melody that some of those customers are looking for, because most of the time they want to put some information in and then they want to forget about it, it's not something they're using every single day, it's not a monitoring point, you know, it's, it's, it's that that's what their customers are about. And once they start adding more to it, then they're going to have you know, they hire an HR person, 30 different cards, you know, once you have a lot of years expense to move to agenda or once you have a lot of doors, it makes sense to move away from it and depending on their, you know, we did we just kind of pick and choose whether the entry manager is reasonable. It is very functional, and we're very pleased with this.

Senah Abou Taha

Okay, perfect. Ehm, how comprehensible are the technical specifications of the [case product]1 to your organization?

Interviewee 4

Very, you know, I think the key... it provides everything we need for your controller, if we need more power, obviously, we have more power, but but it's, it's very, it's, it's work, you know, as a provider, nine times out of 10, *uncomprehensible* the controller *uncomprehensible*.

Senah Abou Taha

Ok. You already mentioned that your customers, eventually they really value the easiness, the simplicity of this product. So you would also basically say, or how easy would you say is it to translate the relevant or these relevant information to your customers?

Interviewee 4

Oh, very, very easy.

Senah Abou Taha

Okay. We have another question, which is rather abstract. Again, the theoretical concept behind the outcome principle is not the value and not the technical specifications, but the value proposition. So basically, this took to understand what solution this product offers.

How valuable is it? Is it comprehensible to to understand, like the value proposition?

Interviewee 4
Yeah, absolutely. I mean, I wouldn't use it if it wasn't.

Senah Abou Taha
Yeah. Make sense (laughs). But, I mean, do you miss any information or anything like that?

Interviewee 4
Say that again?

Senah Abou Taha
Do you miss any information? Did you miss anything when the product was pitched to you?

Interviewee 4
No, I don't think so. You know, because sales presentations or, or, you know, when you looking at data sheet, it's really hard to, to, to comprehend what that thing is going to provide for us until I get it in my hands. And we actually, like went up and started playing with it. So yeah, I mean, you know, the sales side of it, we always paint a picture that's larger than life. So we're very practical, and we want to get something in our hands and play with it before. Focusing, you know, we knew the limitations of it. Early on, and, and we plan around it, you know, when we're doing, we're more during, you know, limitations, meaning like, if we're getting a big room access or crash bars, we need to provide extra power for those things, we can power those things out, you know, this is just the relay. So, so we do it early on, in it.

Senah Abou Taha
Okay. Okay. I don't know about what competitor products of [CC] you sell or work with? But how would you evaluate the benefits of the [case product]1? Sorry, I mean in comparison to competitive products.

Interviewee 4
Depends on the situation, you know, there's always the one thing, the one thing that I can say is when I have a high density amount of doors, and I'm limited to where I need to mount me a [case product]1, instead of having a bunch of these things on the wall, other competitors have a box that has high density door pounds in them. So sometimes, sometimes in those situations, we will use [company name C], a competitor, because it's easier to bring lots of card readers into, you know, consistent box instead of a lot of these boxes on the wall. Because that the gentleman will use more real estate on the wall, if, if it's a high density

account, and I can't put the, if I can't put the controller at the door. It's harder to bring all these back to one room, if that makes sense. So sometimes we're limited, especially for retrofits, you know, where it's an existing [company name D] system or something like that. And we're tearing software out putting [company name B] in, and I've got a high density amount of doors, you know, in a room, it's hard to use the [company name E]l ones, because they take up a lot of room. Okay, so you know, I mean, I think aside of things is let's come up with a high density solution somewhere, you know, no, you can do two doors, but what am I doing with 30 doors, and they're all coming into one room?

Senah Abou Taha

Alright. How would you evaluate [CC] product in regards to quality and performance results? We're talking in general now. So not specifically the [case product]1?

Interviewee 4

High quality, extremely high quality as well in presentation to customers. That's why, you know, it's it's absolutely for us, the number one manufacturer we deal with, you know, overall, for sure.

Senah Abou Taha

I mean, we talked about the shortage, unfortunately, that you've experienced, but with regards to the product itself, like malfunctions, dysfunctions, were there any issues that you have experienced?

Interviewee 4

You know, we all have issues with products once in a while. I mean, it's not, it's not always, I feel everyone's got a lot of products that just for some reason has, has this ease, but most ..99% of the time, you call [CC] tech support, and we have probably sitting here today after that, and it is, you know, that's one thing we really like about [CC]. The ordering process is very, very simple.

Senah Abou Taha

That's very good to hear. That actually would have been my next question whether you've always received enough support coming from [CC], whether you've been satisfied with that, but that sounds quite positive.

Interviewee 4

The only thing I would mention about the process is if if our texts go out there, and they find the products bad, and they don't have the ability to get online or call tech support for some reason or another, and they bring the product back, it's harder to get an

incomprehensible number, because you have the power of the thing, you got to figure out what the problem was you got to troubleshoot before they give you know, and even believe that, but the only thing that changes is the report saying: By the way, this thing was bad this little resuming from tech support. So...

Senah Abou Taha

Okay, we noted that. Basically, we also arrived at the end of the interview. Finally, we would just like to ask you to maybe elaborate. Is there anything else you would like to add in regards to feedback or your experiences for the product [case product]1, is there any last comments you want to make?

Interviewee 4

No, no, I mean, I think overall, we're extremely satisfied with their ...there's always innovation and going from the panel on to [product line extension product of case product]. Like, the transition we were happy with, with the product. So there's just a few things that we have to consider when we have a higher density .We need to know... we need to consider what products we need but overall we are really happy with [CC]' work.

Senah Abou Taha

And we're very, very happy to hear that. And we'd like to thank you also for your very, very in-depth feedback, which truly helped and actually at this point, I just want to ask my colleague Kerstin if she has any more questions that she wants to add.

Kerstin Nagl

No, nothing to add. Thank you very much for taking the time again for talking to us and giving us your insights.

Senah Abou Taha

You're welcome. Have a great day guys, bye bye.

Senah Abou Taha

Thank you, and have a very good day. Bye.

--------------------------- END OF INTERVIEW ---------------------------

Interviewee 5 - 25.04.2019

Kerstin Nagl

Oh, hello Bryce. How are you doing?

Interviewee 5

Hey, I'm good, thank you, sorry about the delay, I had a call with one of my clients, they just kept dragging it on and on and on. (laughs).

Kerstin Nagl

Sounds like you had a very long day already. Don't worry, Senah and I got time. So just to give us, just to introduce us really briefly my name is Kerstin and I'm joined here by Senah. She's my colleague.

Senah Abou Taha

Hey.

Kerstin Nagl

We're both students from Lund University here in Sweden. And we are currently collaborating with [CC] for our master thesis, but also for a consulting project. So, that's the reason why we have reached out to you to interview you for both, for a master's thesis and for a consulting project.

Interviewee 5

Ok, awesome.

Kerstin Nagl

So just to give you a brief warning, some questions that we asked you have a scientific background, so they might seem a bit weird to you. But it would be great if you could still answer them.

Interviewee 5

Ok, sounds good (laughs).

Kerstin Nagl

So before we start with the questions about the product itself, we would like to ask you a couple of questions to, ehm, in regards to the relationship that you have with [CC] as a partner. So before we start with that, is it ok to record your answers?

Interviewee 5

Sure, no problem.

Kerstin Nagl

Alright, perfect. So, I would like to ask you as an introduction question, what are your firm strategic objectives?

Interviewee 5

Ehm, sorry, my phone did cut up, what was the question?

Kerstin Nagl

I wanted to know what your firm's strategic objectives are. So, [interviewee company], what does it do?

Interviewee 5

Oh, yeah. So, ehm, we, we do, we're a security integrator. We have just a very few selected partners. So we have a different strategy than a lot of other other firms. So we use only [CC] cameras and products, we use only [company name A] for VMS, we use only [company name B] for access control software. Ehm, and we actually turn away clients on a regular basis if they don't want to use those products. So we have a very good strong background with it. And if a client doesn't want to use that, we're like, okay, you know, we don't need you. And they realize very quickly, oh, maybe these guys are so strong in the field. So..

Kerstin Nagl

Okay. And in comparison to [CC] emphasizes quite heavily on its partner network. So you've already mentioned that you turn customers away, if they do not prefer the [CC] products, but in regards to your customers, what kind of strategy do you otherwise drive?

Interviewee 5

Ehm...(hesitates).

Kerstin Nagl

Maybe to clarify the question a little bit, do you also have such a strong network of customers that always turn to you? Or is it more flexible, like different projects that come in once in a while?

Interviewee 5

So yeah, we have our very strong clients that just do millions of dollars in business with us year after year after year. And then we have new clients that turn to us from word-of-mouth, because we do such a great job, and we do provide the best of everything out there. And that's all that we do, so you know, we specialize in doing that. There's a lot clients that are

turning to us from other integrators.

Kerstin Nagl
And in regards to the values of your firm, [CC] is also quite strong and R&d and innovation. Do you think those two are attributes that are also very important to your own firm?

Interviewee 5
Yeah. Yeah, it's super important. [CC] have really good partnership with us. And we actually have some of our, some of the places like [CC] and stuff actually have devoted regional sales manager for some of our stuff, where they know we're so valuable and be, do have such a big footprint that they just actually have people just for us.

Kerstin Nagl
And how long have you been a customer of [CC]?

Interviewee 5
Ehm, 10 years? 15 years? Something like that?

Kerstin Nagl
Okay.

Interviewee 5
I would say it's like close to 10.

Kerstin Nagl
Okay. And how frequently do you communicate with [CC]?

Interviewee 5
On a daily basis.

Kerstin Nagl
Do you use different channels for it?

Interviewee 5
Yeah, different channels. So regional sales manager, ehm, for global accounts, there's, key account managers support. All kinds of different people, but on daily basis. We also meet up personally sometimes.

Kerstin Nagl

And how satisfied are you with the current communication?

Interviewee 5
Very.

Kerstin Nagl
So do you see any points of improvement? Or is there nothing that comes to mind?

Interviewee 5
No, there's, there's nothing that comes to mind.

Kerstin Nagl
So okay, the last question for that part, in previous communications, and collaborations with [CC], has there ever been any conflicts or failed agreements between the both of you?

Interviewee 5
Ehm, no, not that I can remember, to be honest.

---------------- Section 2 -------------------------

Kerstin Nagl
Okay, perfect. So then I would like to move on to the product questions about the [case product]. So, before you purchase the product the first time, did you have a chance to test the product?

Interviewee 5
Yeah, yeah.

Kerstin Nagl
And what were your experiences with it?

Interviewee 5
So we, we initially liked it, ehm, and it worked, it worked good for what we were using it for for, uh. One of the clients that we were doing. Hopefully that answered your question.

Kerstin Nagl
So the very first client,...

Interviewee 5

(interrupts) I know you're gonna have, I know, you're gonna have other questions, and that's kind of where I just dive into what we don't like about it (laughs).

Kerstin Nagl
Okay. So ultimately, that first customer was the reason why you invested into the [case product], correct?

Interviewee 5
Correct.

Kerstin Nagl
Okay, but was there anything that made you hesitate from the very first experience that you made from the test trial, or were you at that point still convinced?

Interviewee 5
No, for the very first customer, it works great for them. And some of the other customers that we've installed, it works great for them as well. As we've, we've found, ehm, in our experience, that it works great for very small customers. So if they're only trying to control just a couple of doors, it works great for them. But the reason that everybody, a lot of people at [CC] know, stuff about the, about my interaction with the [case product] is actually a bad experience. So we actually have one of our global accounts, well over 100 of them deployed around the world, and controlling a ton of doors. And problem after problem after problem with them. I don't think that us or [CC] had, kind of thought about, ehm, you know, what, what additional things it should have for larger clients or whatever service, it was initially, small client type setup that we were thinking about. And that's when we found, it doesn't have all of these things.

Kerstin Nagl
For your customers, do you use the [CC] entry manager software? Or do you use the external software?

Interviewee 5
We use an external software for that big global account. For our smaller customers, we use the [CC] Entry Manager.

Kerstin Nagl
Okay, and then with regards to the entry manager, the [CC]-own software, how satisfied are

you with it?

Interviewee 5
I'm pretty satisfied.

Kerstin Nagl
Has there ever been any challenges that you experienced?

Interviewee 5
Ehm, user interface, ehm , and the interactions with it. So just a flow of going through and ehm, entering in a new badge and creating stuff in there, that's where we've had, ehm, some slight hiccups with a smaller customers. Its, just, it just doesn't necessarily flow too well. It feels kind of, ehm, feels kind of clunky, if you will. A little tedious to get through it sometimes.

Kerstin Nagl
Okay. And with the hardware, how satisfied are you with the functionality of the hardware of [case product]?

Interviewee 5
Ehm, I'd say, on a scale of one to 10, probably like a five or six? Like, kind of or semi-satisfied. Ehm, there's a lot of other functions that they could add.

Kerstin Nagl
For example?

Interviewee 5
Ehm.. (silence). I'm trying to think. There's, there's some, a lot of times where scheduling doors and trying to do them. So it kind of goes along the lines of like, ehm, if you've ever heard of "if this, then that". So if an event happens, it triggers other things. And, and the [case product] is not very good at doing. If, "if this happens then do this"-type of a trigger. It just does not do those very well.

Kerstin Nagl
And, overall, would you say that the investment into the [case product] is reasonable?

Interviewee 5
Yeah, yeah, it's reasonable for like a small, you know, that only has a couple of doors. And they don't need a ton of additional things other than just to control access for a couple of

doors.

Kerstin Nagl
Okay. And in regards to the technical specifications, when the product was presented to you, how comprehensible were the technical specifications for your own organization?

Interviewee 5
Yeah, yeah. I think very comprehensible. We were, at the time, everything was initially done and stuff.

Kerstin Nagl
Okay, what do you think about the comprehensibility of the value proposition?

Interviewee 5
Yeah, very clear value proposition.

Kerstin Nagl
Okay, and how would you evaluate the benefits or improvements of the [case product] in comparison to competitor products?

Interviewee 5
Hmmm, that's a toughie. I think that they're, ehm, you're asking if it's, how it's updated so far in comparison?

Kerstin Nagl
I'm asking whether you can see the benefits of the product in comparison to competitor products?

Interviewee 5
Yeah, I think that it compares, okay. There's a lot of other ones that are IP-based. Some of them have, yes, ehm. Yes, it's one of the only ones that has a software interface on there. But on the actual door controller itself, but I think that the door controller software that's on there could be a lot more robust, like they could add more features, make it a lot more user-friendly. And the competitors that are out there, I think that they could, you know, I think that [CC] could also do what some of their competitors out there do where you have any device that handles a head-end and then the [case product] and [CC] have kind of just a dummy piece of software, instead of having to program everything, every change that you do, across all of the devices, you have a big one place and that pushes it out to all of them.

Kerstin Nagl

Oh okay, yeah, that makes sense. And overall, how would you evaluate [CC] products in regards to quality and performance results?

Interviewee 5

Overall [CC] makes amazing products. There's times where there'll be, you know, hiccups or whatever, but overall, they, they make very excellent products.

Kerstin Nagl

So have you ever experienced any issues with product malfunctions or dysfunctions at all?

Interviewee 5

I don't know, off the top of my head. I'm not really able to pick any out. Any, any issues, but yeah, there has been a few, but I'm very quick to bring those devices in an get them repaired and turned around.

Kerstin Nagl

Okay, so [CC] customer service has provided sufficient help and support to solve the issue?

Interviewee 5

Yeah.

Kerstin Nagl

Okay. So thank you very much. We're actually already at the end of the interview. Senah, do you have anything to add?

Senah Abou Taha

Well, basically, just if there's anything else you would like to add in regards to feedback or any experiences with the [case product]. Any last comments?

Interviewee 5

Oh, ehm, yeah, I can't think of any right now.

Senah Abou Taha

Okay, perfect.

Kerstin Nagl

Okay, great. Yeah. Thank you very much for taking the time for speaking with us about the [case product]. Really appreciate it. And hope you have a great day.

Interviewee 5

Thank you, you guys too. Bye bye.

Kerstin Nagl

Thank you. Bye bye.

--------------------------- END OF INTERVIEW ---------------------------

Interviewee 6 - 25.04.2019

Senah Abou Taha

Hey [Interviewee 6], can you hear me?

Interviewee 6

Hey Senah, Yes, yes, I can hear you clearly.

Senah Abou Taha

Great So first of all thanks a lot for taking the time to speak to us today. My name is Senah and I'm here with Kerstin who you've been in contact with.

Kerstin Nagl

Hi [Interviewee 6], how are you?

Interviewee 6

Great, great, thank you.

Senah Abou Taha

So, just to explain everything to you. We're actually students from Lund University here in Lund, Sweden and collaborating with [CC] for our master's thesis and a consulting project. So in this scope, we would like to interview customers of [CC] and learn more about their relationship with [CC], as well as their experiences with purchasing and using the [case product]. And we've learned that you have purchased this particular product. And since we are also conducting scientific research, some questions might seem a little odd, because we've encoded theoretical concepts in them. So yeah, just try to answer anyways, if that's possible.

Interviewee 6

Sure.

Senah Abou Taha

But yeah, let's go for it. Now, before we start, is it okay, if we record you?

Interviewee 6

Yes it is. Go ahead.

Senah Abou Taha

Okay, perfect. So, I'd be interested what kind of business you conduct. What are your strategic objectives?

Interviewee 6

Yeah, so we do anything what we deem low voltage, so that includes security systems, camera systems, a[CC]ess control. And then as well, audio and video in the commercial world.

Senah Abou Taha

And what roles do R&D and Innovation play within your firm? We are trying to compare your core values with those of [CC] and as you probably already know, they are very eager to invest into R&D and place a high emphasis on innovation.

Interviewee 6

Ok, ehm, well, it's part of us since we try to provide customers with the newest technologies, however, we don't do R&D ourselves so...I mean as you a said, [CC] is really out there and we, ehm, we definitely admire that but it can not really compare to what we do.

Senah Abou Taha

Okay. you are an authorized partner of [CC]. Is that correct?

Interviewee 6

Yes, correct.

Senah Abou Taha

As you might be aware of, [CC] emphasizes heavily on its partner network, of which you're part of. What relationship strategies do you pursue with your customers?

Interviewee 6

We actually work with contractors, they are extremely important to us. So in doing so, doing quality work, ensuring that they know what, what new technologies are out there. Ehm, commercial aspects, sort of what sort of building technologies are available to them. If they have older systems, reaching out to them and letting them know, new features that are available.

Senah Abou Taha
Okay. And how long have you, yourself been a customer of [CC]?

Interviewee 6
Ah, I would say five or six years.

Senah Abou Taha
Oh quite some time now.

Interviewee 6
Yeah.

Senah Abou Taha
And within these five or six years, how frequently have you been communicating with [CC]?

Interviewee 6
I have two reps (sales representatives) that I deal with. In terms of dealing with like office and stuff like that, I don't, I have little to do with … very little contact with head office of [CC].

Senah Abou Taha
How actively would you say do you engage with your sales reps?

Interviewee 6
I would say probably twice a month.

Senah Abou Taha
And which channels do you use to communicate with [CC]?

Interviewee 6
Via email, ehm, they do send a like a monthly newsletter as well. Just sort of a blanket email, but then as well, I do a phone conversations with the one guy more frequently.

Senah Abou Taha

How satisfied are you with your current situation, with the communication with [CC]?

Interviewee 6

Very satisfied. It's quite alright I'd say.

Senah Abou Taha

How could [CC] improve its communication with you in the future from your perspective?

Interviewee 6

No… no, I wouldn't. Only because we don't want more communication. (laughs)

Senah Abou Taha

Ok. (laughs too) Have you experienced any conflicts or failed agreements between your company and [CC]?

Interviewee 6

I would say no.

Senah Abou Taha

Okay, so nothing that could apply?

Interviewee 6

Not really, at least I can't think of anything.

---------------- Section 2 -------------------------

Senah Abou Taha

That's great to hear, actually. Perfect, then we'll come to the next section, or to the last section of our interview, where we're going to elaborate more on your experience with the [case product]
So first of all, we would like to ask you, have you been offered to test the product prior to purchasing it?

Interviewee 6

No, I was not.

Senah Abou Taha

So, what were the circumstances, why did you initially invest into the product then?

Interviewee 6
So a huge component for me is tech support. And I find [CC] tech support very good. Their, their, their engineers on the other line are very knowledgeable.

Senah Abou Taha
Okay, ehm, have you been purchasing other [CC] products beforehand? I assume yes because you must have known about their tech support, when you chose to, ehm, purchase this product.

Interviewee 6
Yes. So, the camera systems is what we have primarily been using prior.

Senah Abou Taha
Okay. Okay, and what, ehm, were there factors that made you hesitate?

Interviewee 6
A little bit, because we're new to the market. And so, like, we were using other brands that obviously had the ability to sort of satisfy our needs for, but I don't know, as it has generally been, what I would do good is quality, high end products. That's essentially what we got with [CC].

Senah Abou Taha
Great. So how would you evaluate the investment that you put into [case product]?

Interviewee 6
Yea, I mean it's definitely fair.

Senah Abou Taha
Okay. So that's good to hear. So, let's move on to the next question. How do you sell this product to your end customers? Do you use the [CC] entry manager manager software? Or any external software?

Interviewee 6
No, I just use the built-in user interface.

Senah Abou Taha
Sorry?

Interviewee 6

No, I USE the Entry Manager.

Senah Abou Taha

Okay. Perfect. And what do you think about the openness of this product? And the fact that you could use external softwares?

Interviewee 6

I'd actually, to be honest with you, I've never really entertained the idea of using a third party, so it never really crossed my mind.

Senah Abou Taha

Okay. So you don't consider this beneficial or positive?

Interviewee 6

Not really, no. At least for me.

Senah Abou Taha

Okay. Then how satisfied are you with the functionality of the hardware?

Interviewee 6

For the hardware I am satisfied with its functionality. There some features, feature sets that I would like to see added at some point. But overall, reliability is good. Ease of installation is good.

Senah Abou Taha

Okay. And what kind of features would that be?

Interviewee 6

Ehm, just so that clients can control it from their phones. Because that did come up a lot.

Senah Abou Taha

Hmm. Yeah.

Interviewee 6

There is a third party app for that, but it's quite poor.

Senah Abou Taha

Okay. Noted. How satisfied are you with the functionality of the [CC] software?

Interviewee 6
Yeah I am satisfied.

Senah Abou Taha
Okay. Again, any room for improvement?

Interviewee 6
Off the top of my head? No. I thought it's fairly intuitive. The fact that it's drag and drop, I think it makes it intuitive and easy.

Senah Abou Taha
Okay, great. Ehm, then how comprehensible are the technical specifications of the [case product] to you?

Interviewee 6
Ehm, sorry can you repeat the question?

Senah Abou Taha
Sure. How comprehensible are the technical specifications of the product to your organization? So when it was pitched to you, was it, ehm, were you able to immediately understand the technical specifications of this product?

Interviewee 6
Yeah, only because we've done other card a[CC]ess systems tho. But I think if you have no experience, I think you may have some growing pains with it. I don't know.

Senah Abou Taha
Okay. So yeah. Was it easy to translate the relevant information to your customers?

Interviewee 6
Yes, very easy.

Senah Abou Taha
Okay. And actually, the next question would not about the technical data regarding the product but more about its value and the actual benefit it can provide. So okay, you have data sheets, you have all the technical facts. But on the other hand, you have a solution and a value that is being offered, when the [case product] was presented or pitched to you, were

you able to grasp this value proposition?

Interviewee 6
No not really, ehm

Senah Abou Taha
Can you elaborate on that?

Interviewee 6
The value proposition of it?

Senah Abou Taha
Yeah. Like what what it can do? What benefit it gives you if you use it? Was that emphasized?

Interviewee 6
Not not necessarily now. I mean, we're talking about three or four years ago, so I don't really remember.

Senah Abou Taha
Okay. And on the other hand, were you able to communicate this value to your customers?

Interviewee 6
Ehm, because of the fact that it's a, it's a very scalable product. The fact that it uses POV, and they can be installed locally, is a benefit to us. And then, obviously, that translates to the client, because they're savings for them, because we're not cabling a whole setup. So yeah, I suppose the value could be delivered. And that's it.

Senah Abou Taha
Okay. Ehm, did you miss any information? If you think back to when you bought it, anything you didn't know that you wanted to know. But that hasn't been told to you?

Interviewee 6
Ehm, I have some stumbling blocks I do remember, there wasn't enough power on the board.

Senah Abou Taha
Hmm.

Interviewee 6

..Which did cause some issues using it, having two strikes fired at the same time. But it means things like that are easily correctified.

Senah Abou Taha

Okay. You have mentioned that you have used other card access systems. So if you compare the [case product] to competitor products, what benefits does it offer?

Interviewee 6

Ehm, again, ease of installation, scalability, the user interface is nice, as well is as compared to other brands, other brands sometimes make you buy a software, which can get expensive, especially for smaller systems.

Senah Abou Taha

Okay. Ehm, then I would like to ask you, in general, about your experiences with [CC] products, how would you evaluate them in regards to quality and performance results?

Interviewee 6

So, quality performance, typically there are up there, high quality, you know, they perform as expected. But they do deem a premium. So it's sort of a, more of a niche market, I suppose you could say for people interested in that.

Senah Abou Taha

Yeah. Okay.

Interviewee 6

But I prefer that over an inexpensive product.

Senah Abou Taha

Ehm, have you experienced severe issues with any products like product malfunctions, anything like that?

Interviewee 6

Yes, that's typical of anything.

Senah Abou Taha

So okay, can you maybe also elaborate on that?

Interviewee 6

In terms of product malfunction?

Senah Abou Taha

Yeah, like you, you said that there has been a product that you've used from [CC] which showed dysfunctions. So what product was that?

Interviewee 6

Yeah. So, there was actually a camera. I don't actually remember the part number of it. Okay. But I've had a couple where they've actually been waterlogged.

Senah Abou Taha

Ok, in such cases, has [CC] customer service provided sufficient help to solve any of the issues experienceD, because I remember you've mentioned that you're very satisfied with the service so far. What about this case?

Interviewee 6

Yes, well, they have offered replacement. So I would say very satisfied, because they ship you out the unit, and you can replace it and do it in one trip and return the defective unit, which I think is a huge bonus.

Senah Abou Taha

Oh, great. Yeah, definitely. So, okay, actually we've reached the end of the interview already.

Interviewee 6

Ok.

Senah Abou Taha

And I would just like to ask my colleague Kerstin if there's anything she wants to add at this point.

Kerstin Nagl

Actually, I do. You mentioned earlier that you use third party applications with [CC] entry manager, and I just wanted to inquire which application you were referring to.

Interviewee 6

So we use (company name a], another card a[CC]ess system that we've used in the past. Ehm, and that's for more price conscious clients. There's another company [company name b]. In the OEM manufacturer of their boards is [company name c], we've used those as well. And then [company name d] is the other one.

Kerstin Nagl

Okay, perfect. Thank you. Otherwise, is there anything else that you would like to add in regards to feedback or experiences answers with the [case product] or [CC]?

Interviewee 6

No, the only thing that's missing on [CC] I have mentioned but on top of that? No.

Senah Abou Taha

Yeah, that was, that was great feedback, especially with the app. And we will make sure to forward all the information we got from this interview, ehm, to the product managers. So thanks a lot for your time. This was really insightful.

Kerstin Nagl

I have to agree. Yes. Very much.

Senah Abou Taha

And yeah, that's it for now. We hope you have a great day.

Interviewee 6

Alrighty guys, Thanks, you too. Again, sorry I was late.

Senah Abou Taha

 Don't worry. Don't worry. We're fine.

Interviewee 6

Alrighty. Perfect. (laughs). Bye Bye.

Senah Abou Taha

All right. Bye.

-------------------------- END OF INTERVIEW --------------------------

Interviewee 7 - 02.05.2019

Kerstin Nagl

First of all, we wanted to thank you for your time, we're quite positive that your feedback will help us in improving your customer experience with CC. Today, we want to ask you some questions first about your relationship with [CC]in general, and then go into your customer experience with purchasing the product. Overall, we would like to gather your feedback for a Student Consulting Project in collaboration with CC, but also for our master thesis. Hence we wanted to ask if we could record you? Anything said will of course be handled absolutely anonymous.

Interviewee 7
No, not at all. I don't mind. No, no.

Kerstin Nagl
Great, thank you. So do you have any other questions in advance?

Interviewee 7
No, no.

Kerstin Nagl
Okay. Then I would like to inquire what your firm's strategic objectives are?

Interviewee 7
We are a crucial system integrator in the US. However, we do not just do security solutions, we are also architects, meaning the development of security design for large enterprises and softwares.

Kerstin Nagl
In regards to innovation and research and development, how important would you deem those two factors to your company?

Interviewee 7
Very, very important. We… our company itself, we do a lot of designing custom solutions, and we do a lot of bleeding edge implementations of technology. We try and take the bleeding edge away.

Kerstin Nagl
Okay. And in regards to your partner or customer strategy, [CC]is emphasizing quite heavily on its partner network, where it focuses a lot on its loyalty program, what kind of customer strategy does your company conduct?

Interviewee 7

We do not have a loyalty program. We do have long term customers that have been with for almost 30 years, we build more on a partnership instead of a customer base. If you do not kind of fit into a partnership status, and you're looking for a lot of one off, you're just looking for somebody to dump hardware on you and leave. That's not our type of company. We partner with our customers, we help them grow, educate, and also give them best practices, and also keep them from being a security hole to the rest of their company.

Kerstin Nagl

Okay. And how long have you been a customer of CC?

Interviewee 7

I'm gonna say about 12 years officially?

Kerstin Nagl

And what type of partner tier are you? Gold, silver or authorized?!

Interviewee 7

We are gold partners.

Kerstin Nagl

Great. Now, I would be interested to hear about how often you communicate with CC?

Interviewee 7

I wouldn't say daily, but I would definitely say multiple times a week.

Kerstin Nagl

And what channels do you use to you must rely on in personal communication or personal?

Interviewee 7

Most of the time it is either text, phone calls or emails. But our local sales representative comes over quite often.

Kerstin Nagl

And how satisfied are you with the current communication?

Interviewee 7

It's great. Very much. Yeah.

Kerstin Nagl

How could [CC] improve its communication with you?

Interviewee 7

Let me think about that. Now with Local Sales Representative coming onboard and doing more on site, time, personalized meetings with us, I think that's the biggest thing that we could do to keep building the relationship.

Kerstin Nagl

Have you ever experienced any conflicts or failed agreements between your company and CC?

Interviewee 7

Well, when we initially installed the product, we were...it was a bad experience for us, because the performance, and I think it was more of a hardware issue that a software issue. But I think it was a combination, but it was not a good experience. It did not work well. Ehm, ynytime we try something new, you know we're, we're, you know, in Missouri, it's called the show me state. So so people, people around here, just a little cautious to try new things. So I would say there was some of that. But that was a learning experience.

When we initially installed this, it was going to be for probably about six doors. And we were, you know... the product in the literature for the products as it's only good for up to 16 doors, maybe up to 32, I believe. But yeah, but it was it was not capable of doing more than that. So because we were only planning on doing six doors, you know, we didn't anticipate that to be a problem. The other thing is that we, we are always trying to look out for our customers into the future, and assumed that if they buy this product, they will buy more of it, because they don't like it when they see it and, and just you know, the [CC] control systems tend to grow just in general. So we didn't expect a problem with size. Well, as it turned out, this customer rapidly grew to about 16 doors. And we started having some problems. We worked very closely with the tech support people. And it appeared that there was a problem, because of the architecture of this product where it downloads the database to each individual panel. There appeared to be a problem when you get into a larger system for this database updates to... to be reliable. So we started having a lot of errors. And over time, you know, in working with the engineers and the support people, the decision was made to ...to pull all the equipment out. And we did remove all of the equipment from this particular site. And replaced it with something else.

Kerstin Nagl

That's a very unfortunate experience, I'm sorry about that. So you would say that it was a combined issue regarding the software and the hardware that has caused the problem?

Interviewee 7

I believe so. Yeah, I believe it was a combination where the software just couldn't update the panels fast enough.
Now, there might be failed project, just because it went to a different vendor or a went to a lowest bid. But that's it.

Kerstin Nagl

I'd be interested in hearing how the CC's customer service has handled this issue. Could you elaborate on that?

Interviewee 7

Absolutely, they handled it very well, I basically reached out to not our local person, but our regional manager and said, hey, we got a big problem here, we need to get this stuff out and replace it. And then, not only did he take care of getting us credit for all of the material, he also helped us cover some of the labor costs to do this. So support was excellent.

Kerstin Nagl

Okay. That's great to hear. And overall, how satisfied are you with the relationship you have with CC?

Interviewee 7

Very satisfied. As mentioned, we are a long term partner. We wouldn't be if [CC]didn't uphold its promises.

--------------------------------SECTION 2 ----------------------------------

Kerstin Nagl

Okay, great to hear. So now, I would like to focus more on the product specific question. So about the [product name]. Before you have purchased the product, have you been offered to test it?

Interviewee 7

Yes, actually, I did have that. We had it in house for almost three weeks while we tested a single door controller.

Kerstin Nagl

What were the initial circumstances that led you to invest into the product?

Interviewee 7

The particular customer that we use this with was already using a significant number of [CC]cameras. And they were also using access cam station software. So we thought the [CC]access control would be a perfect fit.

Kerstin Nagl

And what has your experience with the product been like?

Interviewee 7

The product is very good. The product does need some update at this point. The biggest problem I'm running into right now is that some of the newer locks are requiring more amperage than the door controller can actually put out. We are running into experiences where we can't rely on the door controller to supply the voltage, I should say part-supply the amperage.

Mainly, in fact, it would be the best 9600s. And what happens with those is… mainly, since the door controller only puts out 500 milliamps. The strike is supposed to take less than that. But we're finding… after three to six months, two strikes are wearing requiring a little more voltage or amperage to run them. And also during cold and climate weather where the temperature is below 15 degrees, they require more… more amperage to run them. So the door controller at that point will start doing a cycling, where it just clicks the lock and does not hold the lock open like it should. So the progression of going away from a PV device that runs on AF over to a P-way/POE? device that can run on AT and supply 30 watts to a device and then up the amperage on the actual outputs like the new door controller, which I forget the model number that Local Sales Representative made helped me on that one. I know that that one will accept p plus or P a t and give a resolve the problem that we're talking about.

Local Sales Representative

That's the successor.

Kerstin Nagl

And how do you resell the product to the end-customer? Do you use the embedded software or do you rely on the external solutions?

Interviewee 7

I actually have both in use. In a business circumstance, where I do not have to have any type of long term logging, I can get away with in-built software. As soon as I go into education, or a business that must track all of their door openings and logins, then I have to use external

software to control the product. Right now I'm using a product called Amron, which we all know is not a supported solution anymore. And we're working with Local Sales Representative to actually go to a different software provider.That is the main reason that I only use one or the other.

Interviewee 7
Overall, how would you evaluate the investment into the product?

Interviewee 7
Overall, I think the product is a very savvy priced access control because it is all integrated into a single unit, including the software that runs it. Like I'm saying in a small business, if I do not have to track it long, I win bits because usually, I do not have to put in a controller indented node and all this other extra stuff I can put in just a controller, if it's two doors, which I have a lot of small offices that end up like that. And then it's a very valued solution for the customer..

Kerstin Nagl
And in comparison to competitor products, do you see the value of the product?

Interviewee 7
Ehm, no, not really, you know, I, we didn't really see any advantage to the actual hardware, this product, other than they were already using camera station software, and we knew that there was some integration between the access software and the camera station software, so we felt it would be a more seamless experience for the end user. That's the main reason we chose it. You know, there's, with with the software platforms that we sell, most all of them talked to mercury hardware, which is a generic hardware that is, you know, been around for a long, long time, and it's kind of proven. And so it seems like from our standpoint, choosing Mercury, for a none [CC]software application would be a much safer choice.

Kerstin Nagl
Okay, and what about the customizability, of being able to choose between different software options. How would you evaluate this functionality?

Interviewee 7
From a hardware standpoint, you know, because we sell some [CC] control platforms that are hardware diagnostic, and, you know, we could use it with them for upselling. Yes, it's a benefit.

Kerstin Nagl

Okay, perfect. And in regards to the technical specifications when the product was pitched to you. How could [CC] sales personnel improve the explanation of technical specifications for your organization?

Interviewee 7

I think don't think there's anything to improve. The product is quite easy to use and install, so there's nothing…. I don't see why… or how.

Kerstin Nagl

And to resell the product to your customers, was that also comprehensible enough?

Interviewee 7

Yes, but keep in mind that the customers that we deal with don't want to have to manage it, they may have a ability to add a person. But if you're talking configuration changes where they want to add a schedule or something. Most businesses today do not have the personnel that want to spend the time or know how to spend the time and program stuff. So that is where an integrator like us where we partner with our customers, and we become there, hey, we need this done fine. It's a phone call, or email or a website ticket away. And it's dealt with.

Kerstin Nagl

How about the value proposition? How could that be showcased better to your organization?

Interviewee 7

No, I think it's very clear, so I don't think it needs improvement.

Kerstin Nagl

Overall, how would you evaluate the software capabilities?

Interviewee 7

They are great. The only feature I would love to see is at least the ability to do a year's worth of logging for the events that are on it. I know that would require more upset memory. But that would be such a huge thing that it would be very valuable to my industry to be able to do that. And it would in the long run, it would be much more economical solution than me having to go to another vendor to supply that head end software just for the logging. That is the only thing that I would love to see change on it.

Kerstin Nagl

Have you otherwise experienced any issues with malfunctions or dysfunction so far with this product?

Interviewee 7
Only the one that I talked about and being a little short on amperage that could run the lock set.

Kerstin Nagl
Oh, yeah. True. Did you get a message back from customer service, so has the problem been handled satisfactory for you?

Interviewee 7
There was no real solution for it. It was just stated that, you know, we can see that you know, it's doing a reboot. And the only reason I would be doing reboot is… is falling over what the door controller can supply.

Local Sales Representative
So Interviewee 7, if I could… when we originally launched the product, a lot of hardware sets that they power the strikes that they they used to lock or unlock the door require less voltage. The ones that do today that they are the other side of the industry has changed, and we really haven't adapted the product to keep up.

Interviewee 7
And I agree with that. It's not so much that the product when it came out was deficient. It's just types of change, and the product needs a little bit of update to it.

Kerstin Nagl
But do you in general have the opportunity for giving feedback to [CC]to get the product improved?

Interviewee 7
Yeah. I definitely don't have a problem giving Local Sales Representative my feedback on it.

Kerstin Nagl
That's very good to hear. The kind of solutions the [CC]provides, is the way that the product functions within a solution comprehensible enough?

Interviewee 7

Yes, yes. Very. We do sell it regularly with the cam station software.

Kerstin Nagl
Okay. So overall, just to finish the interview, I would like how you, I would like to ask how you would evaluate excess products in regards to quality and performance?

Interviewee 7
Oh, absolutely, we absolutely love the [CC] camera products. I mean, we are huge fans of [CC]. And, you know, with with the [CC] control, you know, we've had the bad experience. And then we're also we're also looking at it is that it's not quite as flexible a platform, you know, as the mercury platform. One of the things with Mercury's... we do a lot of retrofit work, where you may be going in and taking up someone else's access control platform and install a different platform. And the mercury hardware is quite a bit more flexible, there's a lot more different form factors versus where [CC] just has the one model, the one size fits all. And another point is that a lot of our systems are fairly large. So [CC] seems to be more geared towards a smaller system.

But otherwise… well, let me just give you a little story here. The company I work at a couple weeks before started, which I've been there 12 years now. They hung some original [CC]cameras. When I moved to a brand new office a year ago. I'm sorry, actually been two years ago, we were still using those [CC]cameras. And they were still functioning after 10 years of 24/7, 365. Being used going through power outages and everything. That's pretty much what sold me on [CC]products. And then the other part is [CC]products, the quality of the support when you need it is one of the biggest things.
We don't want to go with a company that cannot support their own product and their answers. Well, I don't know where I've been down that road. And I've actually dropped companies because of that. But the quality, the looks, he ability for them to just function and keep functioning for way over the working period. And the ability of the product to supply superior video and functionality is why I go with them.

Kerstin Nagl
No, that's definitely true. Okay. Have you apart from this issue and the access controller or control, have you experienced any severe issues with other products that you purchase from?

Interviewee 7
No, no, not at all. Been rock solid.

Kerstin Nagl

Great. So thank you very much for your feedback, that's really positive. I'm glad to hear that. Overall, we've actually already reached the end of the interview, I would like to ask my colleague, Zeina, if you have anything else to ask.

Zeina Abou-Taha

Hey, Interviewee 7, first of all, thanks a lot for the nice feedback. And it was very insightful. I do not really have a question at this point. I was just wondering, is there anything else you would like to add in regards to feedback or your experiences with [CC]or the product in particular?

Interviewee 7

In other words, one thing I did forget to mention, okay, I use this product and a lot of K through 12 solutions. And the one other thing in the software solution that I'm missing would be the ability to do a lockdown system-wide. And that lockdown would just cause the doors to stop responding to reads or schedules, disable schedules, if they're holding the door open, and stop responding the reeds unless they are in a group that has no restrictions on it, kind of like an administrative group card. That is one of the big features I am missing within this product in a K 12 environment.

Local Sales Representative

Okay, guys, just to reiterate that I've only been with a company like 90 days now, I've heard that probably 50 times in that 90 days about this product.

Zeina Abou-Taha

Okay, so we should definitely stress that.

Interviewee 7

Well, finally, like... my comment would be that [CC], the products are very robust, in general the camera products. You know, it's an enterprise class product that we sell to our very best and largest customers. The [CC]control piece is limited to 32 doors. So it's a product that we typically wouldn't sell. We don't like to sell anything that our customers make grow out of. And so I guess my feedback would be that if you guys want to be in the enterprise access control space, it's going to probably require a little broader product line then that.

Kerstin Nagl

Okay, perfect. So, ultimately, I would just like to let you all know that we will share the feedback that you have given us with our engineers to see how we can improve the product. The data will of course be handled anonymously, should you have any privacy concerns.

And we will also pitch our findings to upper management so that we can improve not just the product, but also our service to our customers like you. And ultimately, since we have reached the end of the interview, I just like to ask Local Sales Representative, if you have anything to add, any questions that we might have missed or something that you would be interested in?

Local Sales Representative
No, I think I've got it. I just can't thank you enough, thank you very much for your time on this, Interviewee 7. I know your time is very valuable. So I.. thank you.

---------------------- END OF INTERVIEW --------------------------

Interviewee 8 - 06.05.2019

(Interviewee has been asked whether it is ok to record in advance).

Senah Abou Taha
Right. So one second (fixes microphone). So let's start. First of all, what does your company do exactly? You are a system integrator, we know that. But can you elaborate more on that?

Interviewee 8
I mean, ehm we're from Africa, we have about; we're in about 10 countries here.and we have our headquarter here in Kenya, as well as our technology division.

Senah Abou Taha
Ok. We're trying to understand how similar you are to [CC]. So how do you know that [CC] heavily emphasizes the role of R&D and innovation. How important is that to your company?

Interviewee 8
We are system integrators, and for that we are very partly involved in research and development of products. From the feedback we get from our customers, we share that with [CC].

Senah Abou Taha
And what about your partner strategy?

Interviewee 8

Yea we do have some partners we collaborate with on a daily basis but we are also flexible to, ehm, let's say, new influences and opportunities.

Senah Abou Taha

Okay, perfect. How long have you been a customer of [CC]?

Interviewee 8

Ehm, let me think about it.. I'm not sure actually to be honest. Could be a couple of years.

Senah Abou Taha

Okay, that's no problem. And how frequently do you communicate with [CC]?

Interviewee 8

On a weekly basis with the Kenya representative.

Senah Abou Taha

And that's personal as well?

Interviewee 8

No, that's per phone and mail.

Senah Abou Taha

Ok and how satisfied are you with the current state of communication with CC?

Interviewee 8

Ok, we are really satisfied communication-wise. Ehm, nothing to complain about really.

Senah Abou Taha

Ok, in the past, have any conflicts or failed agreements occurred within your collaboration with [CC]?

Interviewee 8

No, we've not had any failed agreements.

---------------- Section 2 -------------------------

Senah Abou Taha

Okay, now, I want to get a little into the [case product] and hear about your experience. So

before purchasing it, have you been offered to try it first?

Interviewee 8
The network controller?

Senah Abou Taha
Yeah, exactly.

Interviewee 8
We got a demo unit from their offices in Kenya which we did use for one our presentations to the client.

Senah Abou Taha
So what experience have you made with this trial.

Interviewee 8
It helped us land the deal, so positive (Laughs).

Senah Abou Taha
Great. What were overall your reasonings to invest into the network door controller?

Interviewee 8
One is because the network-based so it's easier to use, compared to some other controllers, which are not network based. Another reason is, because it's an open platform controller, so we are able to use it with [company name A] which is also our partner. Yeah that's part of the reason.

Senah Abou Taha
Okay. Ehm, were there any factors that made you hesitate?

Interviewee 8
To use their controller?

Senah Abou Taha
Yeah, exactly.

Interviewee 8
No, no, no, no. No factors that have caused us to hesitate. In fact, it's what we're actually pushing for right now for most of our plans.

Senah Abou Taha

Okay. That's great. Ehm, how would you evaluate the investment into [case product]? Is it reasonable, the price or are you not satisfied with it?

Interviewee 8

Okay, the price could be a bit cheaper for some customers, especially the small and medium enterprises, so they can they might find it to be a bit on the head side. But for enterprise customers, replacing is ok.

Senah Abou Taha

Ok. And you mentioned that you use the network controller together with the [company name A] software. Do you also use the built in [CC] entry manager or only [company name A]?

Interviewee 8

Mostly we use it together with [company name A]. Not the standalone [CC] system.

Senah Abou Taha

So you do not use it at all?

Interviewee 8

We prefer to offer more integrated solutions so it's better to use it together with [company name A], when we can onboard CCTV as well to the metric and have the [CC] control on [company name A] and all that. Yeah, so most provide solutions were pushed for [CC] with me [company name A] or [CC] with [company name B], which is a partner of ours.

Senah Abou Taha

All right. How satisfied are you with the functionality of the hardware only?

Interviewee 8

The functionality is good. For the hardware we did not have challenges.

Senah Abou Taha

Okay, that's good to hear. Ehm when, when the product was presented to you, how comprehensible were the technical specifications?

Interviewee 8

Most of the technical specifications were clear, for anything that has not been clear, we have

a lot of support from the team that lives in Kenya. So Okay, any questions we normally have we direct to them, and most of the time they're able to give us the answer.

Senah Abou Taha

That's great. The following is a more abstract question now; what about the value proposition? Meaning that okay, there's of course, technical data sheets and all these things. But were you really able to grasp the actual value? And what the benefits of this product are?

Interviewee 8

Yes, we have been able to grasp the value of the network controller, again, as, because it's a network-based controller, it has made its position a lot easier. And it has actually been explained to the client how the solution is being done, so generally the product is a good product.

Senah Abou Taha

Do you see apart from that any other benefits that it has, compared to competitor products?

Interviewee 8

Well, at the moment, I'm not sure if I can think of any off the top of my, of my head. But being that it's open platform is a really good thing, because they're able to use different leaders together with the controller, different technology together the controller, which is a plus, because some of the controllers, mostly, most of them actually are not open to open-based. So open-based give it another added advantage.

Senah Abou Taha

Yeah, that's very unique, actually. Yeah. Have you experienced severe issues? Like any malfunctions with the [case product]?

Interviewee 8

No, no, not so far.

Senah Abou Taha

That's great. And how satisfied are you overall with [CC]' performance?

Interviewee 8

For the product is a very good product, we've done installations at a couple of sites. And most of the customers are happy, if not all of them. I overall like their products.

Senah Abou Taha

Good. And what about [CC] Tech Support, you already mentioned that you're being supported in a very great manner. Are you satisfied with how the support is from our side? In case of questions, or...

Interviewee 8

Yeah, the team in Kenya is very resourceful, they're able to assist us even during the design phase, so they also assist me in terms of the brand and understanding the product. So for me, I think, ehm, their support is good.

Senah Abou Taha

Okay, great. And actually we've already reached the end of the interview now. Just finally, is there anything else you would like to add in regards to feedback or experiences anything with regard to this product or anything you would like us to know?

Interviewee 8

Well, they maybe only feedback I'd have is maybe [CC] can engage more in terms of creating awareness on the, on the product. End users and that can make even our pitching better because they can be aware of the product and even when they see the pricing, they understand a bit more. So for me that will be the only feedback to create more awareness on the product to the end-user especially.

Senah Abou Taha

So, should that be done in collaboration with [CC] or do you think [CC] should reach out to the end customer directly?

---Connection lost, no follow-up call could be arranged to answer the last question ---

--------------------------- END OF INTERVIEW ---------------------------

Interviewee 9 - 06.05.2019

Kerstin Nagl
[CC], this is Kerstin speaking. Hello?

Interviewee 9

Hi, Kristen. This is [Interviewee 9] from [Interviewee's company]. How are you?

Kerstin Nagl
Hi, I'm doing fine. How are you?

Interviewee 9
Good, good. Do you still have time?

Kerstin Nagl 9:09
I do. Do you have time? I don't want to take any time away from your lunch break.

Interviewee 9
Not a problem, we usually don't have time to eat anyway.

Kerstin Nagl
Awesome. Okay, so just to give you a brief introduction, both my partner Senah and I are students at Lund University here in Lund. And we are currently collaborating for our master thesis, but also for a consulting project for students with [CC]. This is also why we've reached out to partners like you to interview you about the [case product], about your experience, how we can improve that product and so on. Since we're parallely also working on our master thesis, some of the question have a scientific background and might seem a little bit weird to you. But it would be great if you could still answer them to the best of your abilities.

Interviewee 9
All right. All right. I'll do my best.

Kerstin Nagl
Okay, great. So I will start with a couple of questions about your collaboration with [CC]. But first, I would be interested in what your firm strategic objectives are to get a little background to your company.

Interviewee 9
Okay, okay. Okay, the company's strategic objectives currently. Well, we have among we have five pillars, basically, the five pillars are. Okay, we have internet internationalization is one of them. Okay, quality of service. Innovation, we have customer experience we have that I mentioned, global quality?

Kerstin Nagl

No, not yet.

Interviewee 9

Okay, so those are the five quality.. not quality.... five strategic pillars of our, our five year plan, which is on its third, fourth year, actually.

Kerstin Nagl

And what exactly does your company do? Are you a system integrator or a reseller?

Interviewee 9

Basically, we are an integrator. We do have reselling, as part of our revenue share. But we also do project integration, and we do services, post sales, so mainly integration.

Kerstin Nagl

Okay, and how important would you say is R&D and innovation to your firm?

Interviewee 9

Well, we do not actively engage in R&D. So basically, we count on our vendors to do R&D and share it with us so that we can basically evaluate if some of the new technologies coming out of or, you know, insights our vendors share with us if they apply to our market, you know, how we can take advantage of that.

Kerstin Nagl

Okay. And in regards to your customer strategy, [CC], has this network partnership, where they rely very heavily on their partners, and that doesn't include direct customer contact. Do you have something similar with a loyalty program? Or what is your customer strategy?

Interviewee 9

Well, we are also B2B and our structure is designed around account managers, and more recently, product managers. Part of our, our, I guess, strategy to better cover our current clients. We've also around, like you said, some allies are either you know, service delivery or, you know, hardware installation. So, we don't, we don't only get to clients, through through our own staff, but also through third parties that want to work with us. Okay, that's all symbiotic in that way. But unlike [CC], we also heavily corporate with customers directly.

Kerstin Nagl

Okay, great. And how long have you been a customer of [CC]?

Interviewee 9

Well, I mean, started about 10 years ago, probably? Maybe a little longer.

Kerstin Nagl

Okay. Are you an authorized partner or gold or silver?

Interviewee 9

We're an authorized partner.

Kerstin Nagl

Okay, great. And how frequently do you communicate with [CC]?

Interviewee 9

On a weekly basis, I think. Maybe a little less.

Kerstin Nagl

What kind of channels do you use for that communication?

Interviewee 9

We use WhatsApp and EMail.

Kerstin Nagl

Okay. And are you satisfied with the way you currently communicate with [CC] or do you see any ways for improvement? How that can be improved in the future?

Interviewee 9

Yeah, actually, I do. Great question.

Kerstin Nagl

Okay, let me know what I can do to help you.

Interviewee 9

Yeah, here's the thing... we work with. Just like we work with [CC], we work with [company name A], we work with [company name B], we work with [company name C], [company name D]. And we see a few important differences.

Kerstin Nagl

Okay.

Interviewee 9

We can reach the commercial people of [CC], like ... the account manager in Colombia, through WhatsApp and email fairly easily. But when we need to contact, presale support, or yeah, for technical support. The website sometimes is not the best channel, for instance, sometimes we we want to, you know, set up a chat conversation with one of the presale specialist with [company name E]. And using [browser name A], for some reason that the chat is not always available, the some of the links are broken on the website. Not so many of the links are broken on the [CC] website. So sometimes it's a little bit difficult to get ahold of [CC] people on the technical side. And the information that we sometimes believe is available on the website is not always available. And I can give you one example. Last week, we had a meeting with a company that that do, their service is cranes. So they have like huge cranes for, for ports for building, for mining. Okay. And they were asking us how to protect their perimeter. So we went on [CC] website, and we saw this magnificent site, almost a micro site with information about perimeter protection. So we started, you know, we considered sending it to the client. But as we start clicking on the links, some of the information was not available, and it led to a broken link. And that was very disappointing, because it happens with a certain frequency, so links are broken. So we decided against sending it ... the ... sharing that with the client, because if the client happens to click on one of the broken links, you know, the experiences are not positive. And so this happens with a certain frequency around the website. I'm not sure why. But it does.

Kerstin Nagl

Okay, that's not great to hear. But I will definitely forward that feedback to my colleagues to have it fixed, because that definitely shouldn't be happening. So I apologize for that. But I'm happy that I got the feedback.

Interviewee 9

So you have two things, the chat, the chat has to be better and more ubiquitous. And broken, things have to be fixed. This is 2019, this should be avoided. Yeah...

Kerstin Nagl

And in regards to your collaboration with colleagues with [CC], has there ever been any conflicts or failed agreements?

Interviewee 9

Well, we had a top million dollar negotiation last year, okay. Our cameras that had to be delivered to Venezuela, we were working on a project for, for the oil industry. And, obviously, this was not going through the regular channels. So we had to go up a few notches, to share information with, with compliance and legal. And, I mean, I'm not going

to say we had an argument, but we we definitely...the [CC] compliance person that we were assigned initially did not have the the, say the experience dealing with this type of compliance issue. So the answers were immediately negative, let's call them. Okay, so we had our legal team, facilitator, legal opinion, to aid in the decision making, you're gonna be able to write this down. But this is actually something important that I just discussed with our legal team today. Okay, here's the thing. This project had a lot of compliance issues about it. Because as far as government is being tensioned from the US. European Union has mentioned regarding dual use equipment for civilian or military use, and when this client, which was somehow linked to the Russian oil company, [company name F], also has tensions. So these three, you know, situations, made it very difficult to look for a legally viable solution to to commercialize the [CC] products to the client. Now, here's the thing, the [CC] people. This is more of a, I guess, I don't know, from whatever standpoint, you guys need to read review this book.The [CC] people asked us as a channel to deliver the, you know, the news to the client, that the project had to be edited. And so, all along, we had to tell the client that we were going back and forth. And basically, we, we lost all credibility with the client, the client will not speak to us anymore. And months later, or maybe six, seven months later, the actual team contacts us and says, look, we have great news. We can. The project has now been approved. And, you know, after it was a very tough negotiation. There were insults from the clients part, which or if you were not a good site. So, six or seven months later, [CC] contacts us, look, we have good news, now we can do the project. So let the client know, and have to be honest, that was not going to happen. So we let our our account manager know that we prefer that [CC] directly contacts the client, and give them the great news. And, obviously, the client did not react positively. I think that was the end of it. But sometimes we... we need a... the accompaniment of [CC] has to be a little more, let's say, like a sidekick. You know, I mean, it's not the ground, we're, we're facing clients, with the [CC] name on our shoulders. And sometimes we do need a little bit more support from [CC]. It's none of the you know, it's, like 80% of the deals do not require this. But maybe 20% require a little more support. And that's where we, you know, basically, [CC] was just telling us, you know, informally things they did not want to commit. Communication was all verbal and nothing was written. And, you know, it's a little bit cowardly, when you're a huge company, and you let the partner do all the dirty work. And we're tiny company in comparison to them.

Kerstin Nagl

Yeah, that definitely shouldn't have happened because our partners are really valued here at [CC]. And that is definitely not something that [CC] stands for. So I really apologize for that, because that really shouldn't have happened. But I'm definitely going to forward that feedback to see how that can be improved.

Interviewee 9

Okay,

Kerstin Nagl

So that already helped me quite a lot. But overall, is there any other pain points that you can see with the collaboration with [CC] where we can improve?

Interviewee 9

No, I think I think those are the top pain points that we have. Probably, you know, the top of my head that we have, otherwise, we're very happy with the relationship.

----------------- Section 2 -------------------------

Kerstin Nagl

Okay, great. So now I would like to dive deeper into the product, into the [case product]. Before you purchased the product, have you been offered to test it.

Interviewee 9

Well, here's the thing, this, this product was made for Venezuela. And there's no pre sales or there's, there's no local presence. So we had no possibility of testing it. Basically, you know, they went with the video specifications that was on the website.

Kerstin Nagl

Okay, and what will ultimately the reasons to invest into the [case product]? Can you remember?

Interviewee 9

Yes, compatibility with [CC] product lines.

Kerstin Nagl

Okay. And overall, how would you evaluate the investment into the [case product]?

Interviewee 9

Yeah, I can't give you feedback on that, just yet. I mean, not on the installation part, because, unfortunately, the we did purchase the product close to a year ago, but the client has yet to install because it's a building that is not finished yet. The reasons were basically, financial or economic. The product seemed reasonably priced. There are definitely more economic solutions out there from Asia. But in a way, the warranty and the active brand name gave us a better feel to selling our clients Asian products, or cheaper product.

Kerstin Nagl

And how did you sell the product to your customers. Did you use the internal software? Or do you use external software?

Interviewee 9

In that case, we use the [CC] software.

Kerstin Nagl

And have you already made any experiences?

Interviewee 9

No, no, we only did the review with the available online resources.

Kerstin Nagl

Okay. And have you had a chance to test the hardware at all? Or is it also still...

Interviewee 9

We have seen it in Chile. In the demo room in Chile. Yeah, we've seen how it works. We've seen the software working here. But as of today, we still haven't been able to, you know, put our hands on it in Venezuela. Our operations team hasn't touched the hardware or software. Because everything is in the clients hand right now. It's in their warehouse.

Kerstin Nagl

But overall, how would you say are the technical specifications of the product? Are they comprehensible enough? Or do you miss any information and support?

Interviewee 9

Well, with this product in particular, I'm going to say it's fairly comprehensive. Now we have a new client that we're working with. Our account manager is quoting the whole building. It's a new building. And he wanted to, to see if [CC] would ...would work for the access control and integrating everything. But that's one of the places where I I think I let you know in the email that we are looking into a third party, because there was a limitation apparently, on the I think it was a number of doors and the number of controllers that you could put they ran into. So they had to speak with an Italian company, [company name G] or something like that.

Kerstin Nagl

Yeah, that's... [case product] can control up to the 32 doors, I believe. And anything above 32 doors is the product for ... requires the product [successor of case product], so you would need the higher solution for that.

Interviewee 9
Yeah, at the time of the evaluation, apparently, there were these limitations. And there was something else about the technical requirements of the client or, or something we were suggesting. But software part of it was also going to require a little work around running around to make it work. So that's when we quoted with [company name G] the software part they were asking us for. And I can definitely look a little deeper into it. But I think that as of right now, I think the [company name G] people proposed the readers, the actual card readers and the pin pad at a lower price point. And the whole solution was technically meeting the requirements. So I'm not sure if the final proposal is going to go with the actual solution. And.. or the [company name G] people.

Kerstin Nagl
And overall, for the value proposition, is it clear enough for your company, what kinds of features and functions the product has?

Interviewee 9
I think it is, I think it's fairly clear.

Kerstin Nagl
Also for your customer to translate the value to the customer?

Interviewee 9
It's, it's a little difficult, because we cannot sell the [CC] solutions to all clients. There's a huge Asian product penetration in the market. And the price point ... I mean the difference is just huge. So one of the things... I mean, we always go with the warranty, we go with the Swedish made...am I correct, yes, yeah. And the engineering and experience, etc. But it's, it's a little difficult, because some of these products have, you know, are being commoditized. Video cameras have nearly been commoditized. So access control is also a little bit of a difficult thing to sell, unless we can, you know, show something new or, or different.

Kerstin Nagl
And in comparison to competitor products, how would you say, does the product perform?

Interviewee 9

I mean, it depends. It's a small installation, it's a great product, if it's a medium installation, it could be you know, not the best solution. And if it's a large installation, then it's difficult because he has these incumbents with great solutions as well. And they're all fully integrated, and they have a ton of specs. So, you know, it's a little bit more difficult in that space.

Kerstin Nagl
Okay, but are there any features or functions that are missing with the product that you would like to see?

Interviewee 9
Well, the thing is probably the, the readers ... I think it's more related not to the product, but to the management software. On the software side, where, where we, for instance, we need a software that gives us a complete vision of a control room, for instance, where we can control any number of sensors or access control and video, etc, and make that work as a whole. As opposed to, you know, just doing separate functions or or light integration.

Kerstin Nagl
Is there anything else that comes to your mind?

Interviewee 9
No, we are I mean, we are, I don't know if this is a big or small part of the market for you guys, but we are working with, with clients that are private clients, you know, for their pent houses and their, their homes, and their high-end clients, usually with the money to purchase these [CC] products. And they're asking us to integrate them with their [company name H] or their [company name I] infrastructure for automation and control. So...ehm...this is not something that's been, you know, done traditionally by us, but some of these clients, they already have their audio, their heating, ventilation, air conditioning, integrated their, their shades. And so they also expect their video to be integrated, somehow into these.... control solutions.

Kerstin Nagl
And overall, how have your experience been with [CC] products in regards to quality and performance? Have you ever had any issues? Or how would you rate them?

Interviewee 9
We always have issues.

Kerstin Nagl

Okay, that doesn't sound very positive.

Interviewee 9
Well, I don't know why. We don't have very large projects. But we do have a percentage of products that are either dead on arrival, or that we have to RMA the product within, you know, a few months of having delivered it to the client. And it's usually very cumbersome for us, especially when, when they're related to Venezuela. There's no distributor, their, their value added distributor is not local. So shipping has to be done back to the US. And so there, the problems are twofold, we have the problem with the client, where they have already invested in the installation, etc. So that has to be undone. And we have to diagnose the product better than we say, do not worry, we're going to do this on the warranty, the manufacturer has approved this, then we have to send the product back to the US. And this product has already been paid for freight, customs and taxes. So we have to reship it to the US and then ship it back to the client. And sometimes [CC] does not pay for this. So either we have to pay for it, or the client has to pay for it. The distributor never pays for it. So .... it's an issue that cost money. Basically, it's costing [CC] money, it's costing us money. And while we try to deal with it, you know, as delicately as possible, so the client does not feel that they've purchased the product that, you know, is not up to their expectations. They're expensive products. You know, it's not a cheap product.

Kerstin Nagl
Yeah, I can imagine, but do you know at heart how high the percentages is?

Interviewee 9
Well, for instance, out of seven, whole POE extenders? No, actually, we had two. So one of them failed. So that would be a 50% rate. Then we purchased them with the cameras. Give me one second.

Talks with someone in the background At least 10%.

Kerstin Nagl
Okay.

Interviewee 9
Okay, I'm sure I mean, I'm sure somebody at [CC] has the statistics for our orders.

Kerstin Nagl
I'm gonna reach out to check. And that shouldn't be happening. Oh, you really have a lot of bad experiences. I'm really sorry about that.

Interviewee 9

Well, I hope it's useful to you guys. If you could turn that around, that would be great.

Kerstin Nagl

It is actually really helpful. And I will definitely forward the feedback to upper management to have that resolved, because that really is not what [CC] wants to stand for. So I'm really happy that you got me that feedback. And I'm really happy that you have the time for this interview. To close the interview, do you have anything else that comes to your mind that I haven't asked, but that you deem very important that I should know?

Interviewee 9

No...oh, yeah. There's something that one of our clients has been nagging me about for for over a year. So ...

Kerstin Nagl

Go ahead.

Interviewee 9

It's not about this product in particular, though, but give me one second, to look it up.

Okay, so we saw...a number of cameras, and they were... the [CC product]

Kerstin Nagl

Okay.

Interviewee 9

And the [CC product]065L was expected to have full duplex audio. But it turns out that using the camera station software, the expectations, the clients expectation was to be able to not only listen in to whatever was being picked up by the microphone, that camera, but also to be able to speak to send a voice message through the the camera station software to the camera, the camera speakers. But after a lot of .. we opened up a tech support request. And the conclusion was that this feature was not going to be supported on the camera. So that we had to tell the client that they should only use the built in audio files that you could push through but you can't really speak like a you know, like a telephone basically.

Kerstin Nagl

Yeah.

Interviewee 9

And that was a big letdown for the client. I don't know if this is a big thing for you guys. But. But this client reminds me of it. Every time we talk. It would have been great if there was either more detail explaining how this full duplex capacity was, you know, built. So that, you know functionally speaking, the client knew what to expect on the full duplex solution as opposed to having to buy the product and find out that it wasn't actually working the way you expected it to work. Yeah. And we did as well. So...

Kerstin Nagl

Yeah, that's really not that nice to hear though, I do have to say that I am not familiar with that product in specific so I can't really give feedback on that one. But as I said, I will definitely forward that to the camera station department to see how we can improve that.

Interviewee 9

Yeah, I mean, if someone asks me if they're gonna have you know, the, if there's a firmware upgrade or software upgrade that he can use. Basically, he visualizes himself where he sees himself talking through the either the mobile camera station or the desktop camera station software through the camera. That's what he sees. That's what he would like, I know, there's solutions that already do this with different products. But... he was expecting this product to be able to do that.

Kerstin Nagl

Yeah, that's true. We do have it for different products, but I do not know is that particular product is being supportive of this or not, I will have to check. But I will definitely forward that feedback and I will see if I can get back to you about this.

Interviewee 9

Okay, okay. Okay, great. Great.

Kerstin Nagl

So that was actually my last question. Unless there's not anything else. I would love to thank you for your time.

Interviewee 9

Great. Thank you Kerstin. So it's been a pleasure. And I hope this is useful for you guys. This was...

Kerstin Nagl

It was super, super useful. So thank you very much for your feedback and your insights. It was really good feedback that I can use for both the consulting project but also for my master's thesis. So thank you very much for your time, and I hope you have a great lunch break.

Interviewee 9
Thank you. Have a great day.

Kerstin Nagl
You as well, bye bye.

--------------------------- END OF INTERVIEW ---------------------------