Adoption of Digital Innovations in a Global Organization

– An explorative study

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Abstract

The development of digital innovation influences the work of various markets, and the manufacturing industry faces challenges when transforming parts of their business towards a more digital approach. Transforming an industry towards digital innovations require a focus from the organization to understand the willingness of its internal stakeholders to accept and adopt to digital innovations, and how they will perceive quality from the digital innovations. This thesis work focused on the internal perspective of a case company and their work of a transformation journey towards digital innovations.

The purpose of this thesis study is to identify and explore factors in a global organization which internal stakeholders find necessary for the adoption of digital innovations. From the collected data a conceptual model which is based on 17 interviews was developed to present the result of the study and the factors that were identified to be necessary for the adoption of digital innovations. The conceptual model included eight factors of organizational structure, organizational strategic position, organizational adopter environment, organizational commitment towards digitalization, promotional activities, quality attributes, digital innovation as a value creating mechanism, and personal characteristics. The factors of the conceptual model could be concluded to be the essential and supportive factors that an organization must consider for the adoption of digital innovations. Further, this study also presents a typification illustrating four different individual adoption behaviors of the internal stakeholders in the case company. The result of the typification of adoption behaviors presents four behavioral groups of "The supportive", "The doers", "The disrupters" and "The disconnected".

This study expands previous research by exploring adoption of innovations in a new global digital context. Further, the result of this study suggests that the quality attributes ease of use, compatibility and flexibility, and quick to use, and value creating mechanisms of perceived benefits of customers, perceived benefits for internal stakeholder, and understanding for data utilization as the main factors of perceived quality of digital innovations. The conceptual model of this study could be used as a support for future organizations when adopting digital innovations. The knowledge of which factors influence the adoption of digital innovations could help organizations prepare for an organizational transformation and build necessary prerequisites to make the adoption of digital innovations successful. Further, organizations could benefit from understanding the types of behaviors of their internal stakeholders when approaching internal stakeholders with digital innovations.

Keywords: Adoption, digital innovation, perceived quality, innovation journey, internal stakeholders, intra-organizational

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1 Introduction

This chapter introduce the background of the problem, description of the problem, the purpose, and the limitations for the master thesis, and lastly, an overview of the structure of the report is presented.

1.1   Background and problem description

The term of digitalization, which originally is defined by the technological process from analog to digital, has later been broaden and connected with the adaption, process, and use of the digital technologies from e.g., organizational context (Legner, et al., 2017). Manufacturing companies must be innovative and to maintain their competitiveness they need to develop customer product-service market innovations (Kindström, et al., 2013), and to add value for the stakeholders (Lee, et al., 2013). The on-going digitalization and development of new smart and connected digital innovations creates new possibilities for expanding the industry, including the ability to connect systems to create value for the customer by interacting with them (Porter & Heppelmann, 2014), and Cameron and Green (2020) point that manufacturing companies are behind.

Due to the acceleration in development of global businesses, the number of stakeholders, teams and organizations that operate in multicultural and multinational contexts are increasing (Tsui, et al., 2007). For large global manufacturing companies, sharing knowledge and information can be a success factor of motivation for internal stakeholders (Björkdahl, 2020). Freeman (2010) defines a stakeholder by an individual or group who can affect or can be affected by the purpose of the organization through their achievements, and an internal stakeholder in this study refers to any employee within the case company organization. For a company with a global spread, cultural differences can be influencing their success or failure (Johnson, et al., 2006). When entering new markets and developing digital innovations, it is important to understand what the stakeholders think, how they are influenced by the process and how they will adapt to the digital innovations (Trenerry, et al., 2021). Organizations need a deeper knowledge of their internal culture to preserve customer loyalty, improve customer service and increase revenue streams (Balthazard, et al., 2006), and also to understand how internal stakeholders perceive quality and how technology can support the organization (Trenerry, et al., 2021). In this study perceived quality is acknowledged as the influence on the internal stakeholders' intensions to use the digital innovations, and perceived quality focuses on quality attributes of the digital innovation and perceived value. If management successfully combine cultural uniqueness and digital innovation the technology adoption can become effective (Lee, et al., 2013). The support for digital transformation could increase if stakeholders perceived value from the organization and become motivated, when receive training (Trenerry, et al., 2021). Digital leadership, digital empowerment, customer and partner engagement, and process digitalization and automation are a few of socio-technical areas businesses should understand and transform when approaching a digitalized business (Legner, et al., 2017). If a company manage their digital transformation effectively, they can benefit in at least one of these areas: better customer experience and engagement, streamlined operations, and new lines of business or business models (Fitzgerald, et al., 2014).

Frow and Payne (2011) present that very few companies, below ten percent, are successful when developing and communicating their value propositions to their internal stakeholders. In this study value proposition is defined as a statement that summarizes why a customer or internal stakeholder should choose to use the digital innovations. Stakeholders' values and perceptions will affect the

behaviors of innovation usage (Cetindamar, et al., 2021) and the attitude towards using an innovation of the internal stakeholders is significant for the perceptions of the innovation (Talukder, 2011). It is important to understand how different stakeholders will form different views about what is valuable to them, but also to recognize and manage these differences because something that is value-creating for one stakeholder could be value-destructing for another stakeholder (Frow & Payne, 2011). The stakeholders play an important role in the digital transformation and must be both ready for the upcoming changes and be a part of it (Cetindamar, et al., 2021). When innovations are adopted within organizations it takes place on an individual level and can be called intra-organizational acceptance (Frambach & Schillewaert, 2002). Before an adopter accept a new innovative product, service, or idea it undergoes several steps through the adoption process (Frambach & Schillewaert, 2002). The adoption process includes steps when individuals or units get knowledge about digital innovations, shape their attitude, decide whether to adopt or reject the digital innovation, to implement the digital innovation and finally confirmation (Rogers, 2003). It can be challenging for organizations to get an acceptance from the potential users of the digital innovations, and if the adoption behaviors of the individuals are not in focus it can become a barrier for the organization (Hameed, et al., 2012). The variation of adoption behaviors makes it difficult to develop a strategy for implementation that fits all the individuals in an organization (Roberts, et al., 2021) and it must be analyzed (Hameed, et al., 2012). Therefore, a comprehensive understanding of adoption behaviors is required to successfully adopt digital innovation across an organization (Hameed, et al., 2012). The organization must prepare their stakeholders for the digital transformation to perceive the expected quality and to engage them in the process (Cetindamar, et al., 2021).

According to Kane, et al. (2015) companies which are not digitally mature have to find ways to engage their internal stakeholders with what the organization aims for with their digital innovation. Culture and leadership are two critical components when implementing a digital strategy (Kane, et al., 2015). Even if or when innovation could be strategically important for manufacturing firms, the innovations can generate demanding problems for the companies (Kindström & Kowalkowski, 2014). The management have an important part of changing the mindset towards innovation orientation, involving creating a culture by changes of organizations and finding an appropriate balance between services and products (Kindström, et al., 2013). Creating an organizational culture that share knowledge by, for example, values, encouragement, and motivations, can contribute to collective learning, process improvements, and unique ideas and opportunities (Cetindamar, et al., 2021). The cultural aspects of knowledge sharing can improve the perceived value and develop a better engagement of similar behaviors (Cabrera, et al., 2006).

Previous adoption research has been limited to acknowledging innovations as wider term and the digital perspective have not yet been explored. Therefore, this study's ambition is to contribute to the research on adoption of digital innovations within the manufacturing industry by an organization and individual perspective.

1.2   Purpose and research questions

The purpose is to identify and explore factors in a global organization which internal stakeholders find necessary for the adoption of digital innovations. With the stated purpose, two research questions are formulated to answer the purpose:

RQ 1.   What are the essential and supportive factors a global organization must consider when adopting digital innovations?

RQ 2. How do internal stakeholders across a global organization perceive quality of digital innovations?

The thesis offers first (1), a conceptual model illustrating how organizational, quality, and behavioral factors relate to the adoption of digital innovation and, second (2), a typification of behavioral factors essential for the adoption of digital innovation. These research questions are approached by a case study of a chosen case company. The case company and participants in this study are anonymous throughout the report.

1.3   Selection and description of case company

A case should be selected by the uniqueness and interest of the researchers, but also to information and enable to provide an answer for the research questions (Crowe, et al., 2011). The case company is a global industrial company that sell their products and services around the world and has for a long time been a successful industrial company, and it has been at the forefront of development attractive products for the industry. The case company have over the last few years continued to grow their business around the world and have internal stakeholders that have worked for a varied period in the organization but also within the industry. During the last years the case company has attempted to develop several digital innovations for their customers, and the focus on digitalization and creation of a digital transformation journey is becoming a central part. When the case company was chosen, it was expressed that a large part of the organization does not understand for why digitalization should become a central part or why it should change their ways of working. Some parts of the company have also developed a more agile working process which have increased their understanding for what their customer need and how to create the best possible value for them. The development of the company has now a greater focus on the customer. However, with previous digital innovations, the case company has struggled to roll out the innovations and reach out to their internal stakeholders and customers. The case company has experienced internal resistance and multiple projects have failed to spread as much as the company had hoped for and the customer value creation has been lost during the development. The experienced issues with acceptance and adoption of previous digital innovations have created a knowledge gap for the organization and wonder what kind of factors affect their success within this area. Internal faith and support from stakeholders are curial for the development and growth of new services and products. The case company as a cross-cultural and international company consists of many stakeholders and it is important the stakeholders understand the potential benefits of a digital innovations to adopt the innovation and create value for the customers. According to Payne & Frow (2011) it is important to understand that different stakeholders will form different views about what is valuable to them, and it is important to recognize and manage these differences. The fact that the case company is a cross-cultural and global company with a wide offering of products and services within different areas of the manufacturing industry, the company could provide an interesting perspective of how internal stakeholders possibly effect of an on-going digital transformation. Therefore, the case company was a good candidate to answer the research questions and purpose.

1.4   Delimitations

The thesis was limited to focus of a qualitative data collection with internal stakeholders from a limited number of countries and positions of the case company. Interviews were chosen to get a deeper knowledge of the participants and to understand their perspective better. Which countries to include in the thesis study and which stakeholders from the case company were also influenced

by the desire to participate in the study. The limited number of stakeholders from each country to interview were also forced to be limited due to the time plan of the thesis project. This study does not consider environmental factors outside the organization, neither the technical aspects nor functional aspects of the digital innovations presented from the case company. The ethical aspect of exploring a large industrial firm from its challenges internally resulted in that the report was written completely anonymous so that the case company cannot be connected to the report.

1.5   Structure of report

The report is structured into six chapters excluding references and appendices. An overview of the structure and short description of the content is presented below.

- *Chapter 1: Introduction*
  The introduction chapter propose the background and problem description of the case, the purpose and research questions, delimitations, and an overview of the structure of the report.

- *Chapter 2: Theoretical framework*
  The theoretical framework chapter include relevant literature that will be used to answer the research questions. The chapter introduce literature regarding adoption, organizational transformation, and perceived quality.

- *Chapter 3: Method*
  The methodology approach and research approach will be presented in the third chapter, along with discussion of method and literature.

- *Chapter 4: Empirical findings*
  In the fourth part of the report, the findings of the data collection will be presented. The findings will provide support for the discussion which will be performed in chapter 5.

- *Chapter 5: Discussion*
  The fifth part of the report will present a discussion of the empirical findings compared to the theoretical framework and the aim is to form support which will contribute to answer the purpose and research questions.

- *Chapter 6: Conclusions*
  The final part of the report will conclude and present the conclusions of the report and explain what factors organizations must consider when adoption digital innovations. The chapter of conclusions will be followed by a brief description of the contributions and discussion about future research in the area.

2 Theoretical framework

This chapter introduce the theoretical framework for the master thesis and arguments for the relevance of the chosen literature in terms of the research questions. The theoretical framework will present literature regarding adoption of innovations, organizational transformation, and perceived quality and these in turn aim to increase the knowledge of how adoption of digital innovations could be successful internally in a global organization.

2.1 Adoption of innovations

In the recent years, the acknowledgement of organizational innovation adoption has increased in the management literature (Frambach & Schillewaert, 2002). For a company to stay competitive in a constantly changing business environment one critical factor is effective adoption of new technology (Makkonen, et al., 2016). New technology together with new ideas, services, programs, policy's, structure, or administrative systems are defined as an innovation (Pichlak, 2015). Adoption could explain the decision an individual or organization do to make use of innovation (Frambach & Schillewaert, 2002). According to Cooper (1998, p. 495) an innovation can be defined as "*any idea, practice, or object that the adopting individual or organization regards as new*". Applying a digital perspective, digital innovation could be explained as the creation of market offerings, business processes, or models, which are based on the use of digital technology (Nambisan, et al., 2017). Within the manufacturing industry, adoption is mentioned synonymously to acceptance and diffusion and refers to innovations being introduced, accepted, implemented, and diffused within an organization and resulting in internal stakeholders using innovations in their work.

2.1.1 Organizational adoption of innovation

Frambach and Schillewaert (2002) identified several variables that influence organizational adoption, however, previous literature on influencing factors within the manufacturing industry is limited. Research further describes different influential factors for organizational adoption. Zaltman, et al. (1973) distinguish two main stages of the organizational adoption process: initiation and implementation, and Frambach and Schillewaert (2002) point out that the adoption decision happens between these two stages. The initiation stage consists of the organization making awareness of the innovation and builds an attitude towards it, and the implementation stage includes that the organization chooses to purchase and make use of the innovation (Frambach & Schillewaert, 2002). During the initiation and implementation, the innovation is dependent on cooperation and commitment from non-managers (Damanpour & Schneider, 2006). Frambach and Schillewaert (2002) further explain that the adoption decision is mainly at the beginning of implementation of an innovation, and it is after this stage that acceptance within the organization becomes important. Damanpour and Schneider (2006) argue that managers have the power to decide if the organization should move forward with the innovation or not.

Frambach and Schillewaert (2002) present a conceptual framework for organizational innovation adoption and the model argues that perceived innovation characteristics and the organizational adopter characteristics are the main factors that drives the adoption decision. These characteristics are influenced by supplier marketing efforts, social networks, and environmental influences (Frambach & Schillewaert, 2002). The social network in an organization could potentially influence the adoption of innovation as informal networks (e.g., internal stakeholders) will contribute to diffuse information about the innovation (Frambach & Schillewaert, 2002). Frambach and Schillewaert (2002) mentions strategic posture as one of the adopter characteristics, and an aggressive and innovation-oriented strategy will have a positive effect on innovation adoption. The

technology-organization-environment (TOE) framework identifies areas which affect organization innovation adoption: technological context, organizational context, and environmental context (Molinillo & Japutra, 2017). Damanpour and Schneider (2006) similarly defines the innovation adoption as multidimensional and view environmental factors, contextual factors, characteristics of the innovation and attributes of the innovation itself as factors that drive the innovation adoption. Environmental factors as competitive pressures may increase the speed of adoption of innovations (Frambach & Schillewaert, 2002).

Frambach and Schillewaert (2002) point out that perceived benefits, compatibility, complexity, observability, trialability and uncertainty could be perceived as examples of different attributes of innovations. Khin and Ho (2020) conclude in their research that organizations which possess a digital mindset are more likely to be committed toward and accepting new digital technologies. Digital innovations will not succeed without genuine commitment and the more organizations recognize potential benefits of digital innovation, the possibility increases for the organization to go for it (Khin & Ho, 2020). Further, Frambach and Schillewaert (2002) conclude in their research that marketing variables, specifically, the targets of the innovation, its communication and perceived risk of the potential customer could either stimulate or facilitate adoption.

Previous literature exploring the influence of organizational structure and size on innovation adoption is quite contradictory. Frambach and Schillewaert (2002) point out that organizational structure has been found to either support or obstruct innovation adoption, yet other literature promote that organizational structures have a great impetus for organizational change and innovation (Pichlak, 2015; Cooper, 1998). Zaltman, et al. (1973) argue that formalized and centralized organizations create better perquisites to implement an innovation but are less likely to initiate an adoption decision. On the other hand, organizational complexity influences the innovation initiation process positively (Damanpour & Schneider, 2006), but not the adoption decision and implementation (Damanpour & Schneider, 2006; Frambach & Schillewaert, 2002). Organizations with a complex structure have an easier and better access to information and knowledge and are more likely to identify opportunities (Damanpour & Schneider, 2006). Although, in organizations with more complex structures there are also risks of potential conflicts emerging (Damanpour & Schneider, 2006). The diversity of values could potentially lead to resistance in accepting the innovation (Damanpour & Schneider, 2006). Further, Damanpour and Schneider (2006) point out that organizational size could influence innovation adoption. Smaller organizations could be seen as more innovative as their size make the organization more flexible and therefore easier to implement new innovations, however, the size of larger organizations could also be more beneficial for innovation adoption as they have more resources, knowledge, and competent internal stakeholders (Damanpour & Schneider, 2006; Frambach & Schillewaert, 2002). Although size is not the only variable influencing the adoption, variables like culture, strategy and organizational structure can have an impact (Frambach & Schillewaert, 2002).

2.1.2 Individual acceptance of innovation

The terms "individual acceptance", "individual adoption", "individual adoption decision" have been used synonymously in previous literature (Talukder, 2011). For an innovation to be accepted and adopted within an organization it is important that the acceptance among the internal stakeholders is analyzed, and if the internal stakeholders does not see the benefits of the innovation, acceptance will be hard to accomplish, and the organization may be forced to discontinue with the innovation (Frambach & Schillewaert, 2002). Frambach and Schillewaert (2002) explain that an individual's attitude and belief towards an innovation will influence the individual's willingness to adopt the innovations and offering. Further, Talukder (2011) points out that motivating the internal

stakeholders to use the innovation is necessary for successful implementation. Internal stakeholders will most likely resist change if they do not understand the potential benefits (Talukder, 2011). Previous research show that the individual acceptance and adoption of innovation is not only influenced by attitude, also management strategies, polices, and actions could be important factors (Frambach & Schillewaert, 2002). Frambach and Schillewaert (2002) further explain that internal marketing parameters, such as education, encouragement and training could influence an individual's awareness of the function, application, and usefulness of innovations. According to literature, one way could be to incorporate standardized activities and systems for the innovation into the existing routines because it could influence the internal stakeholders to accept and use the innovation (Pichlak, 2015).

2.1.3 Behavioral influence on adoption of innovations

The adoption of innovations is dependent on increasing the number of users and if there is a critical mass of users in one individuals' reference group or workgroup it will likely influence the acceptance of the innovation from the individual (Frambach & Schillewaert, 2002). Social factors that have been considered to drive and influence the potential adoption of new innovations are network externalities and peers (Talukder, 2011). Talukder (2011) concludes that social networks have a significant impact on forming internal stakeholders' attitude and behaviors towards innovations. Further, an individual's personal innovativeness could also be a drive for innovation adoption and personal innovativeness could be determined by personal characteristics as for example demographics and previous experience (Frambach & Schillewaert, 2002). Frambach and Schillewaert (2002) mentions that depending on how receptive to change the internal stakeholders are, this will mostly either influence positively or negatively the success of the innovation adoption.

There could be cultural factors that influence how successful innovations are adopted (Van Everdingen & Waarts, 2003). A person's culture can be used to predict how a person will behave (Hofstede, 1994). Culture is constantly formed and shaped after the interactions and behaviors of the past and present, and culture can be connected to the social rules, orders, and behaviors to follow to create a sense of belonging and meaning (Schein, 2010). A group of people who share values, norms and behaviors create a common culture (Alvesson, 2013; Nahavandi, 2015). Van Everdingen and Waarts (2003) explaine that information regarding cultural influence on adoption of innovation could be helpful for managers deciding how to launch an international innovation. Tsui, et al. (2007) imply that attitudes and behaviors at work are influenced by several cross-national and cross-organizational factors, and an individual's personal characteristics could influence whether one individual is attractive to an organization or not (Gelfand, et al., 2008). However, this subject of culture is relatively unexplored in an intra-organizational perspective and previous literature is limited.

2.2 Organizational transformation

Digitalization and digital transformations process require companies to continuously develop their work (Matt, et al., 2015), and adaption to be able to meet the changing environment both for the business and on the market (Parvianien, et al., 2017). Karabulut (2020) explain that digital transformation is organizational change and reaching better business result by using new technologies. Warner and Wäger (2019) imply that when larger organizations start their digital transformation, they should have in mind that a digital transformation will lead to fast, complex and uncertain changes. This chapter aims to create a broader view of the digital transformation and innovation journey that organizations go through, how it influences the foundations of the organization, and the way they approach their work and internal stakeholders. This sections also

present previous research which includes important aspects of what digital transformation and innovation and how the changes influence the internal stakeholders and the organization. This literature is important to improve the understanding of how an organization is influenced during this type of change and multiple factors that can influence the outcome of the journey and development processes. Previous research regarding digital transformation journeys with digital innovations are presented and connected to the understanding of the individual, organizational, and cultural effects. Organizational change is connected to digital transformation and becomes relevant for the thesis in terms of understanding how an increased use of digital innovations force organizations to rethink how they work, communicate, and set their goals.

Digital transformation includes barriers to overcome, although companies and organizations might understand that digitalization is important, a large number find it difficult to understand the benefits and potential positive impact digitalization will have (Parvianien, et al., 2017). When organizations initiate digital transformational projects, the management must be aligned and go all in of changes (Matt, et al., 2015). Half-heartedly process changes may lead to resistance in the entire organization and focus should be on ensuring the appropriate leadership skills and involving all the stakeholders who will be affected of the transformation (Matt, et al., 2015). An organization should understand its own internal dynamics and the dynamics of the industry it operated in for a change management perspective (Kitchen & Daly, 2002). This includes understanding how change can be managed and what the drivers are for it within the organization (Kitchen & Daly, 2002). Organizations are likely to discover influence on models, processes, and culture by digitalization but without a change in mindset or prioritization of change in rebuilding culture and strategy many companies have failed with their digital transformations (Parvianien, et al., 2017). Martins and Terblanche (2003) describe organizational culture as the way an organization works, how they perform their processes and in general how everything is done within the organization. Hofstede (1994) and Alvesson (2013) argue that an understanding of the organizational culture enhances the understanding the differences of the life in an organization, and Further, Warner and Wäger (2019) imply that when working towards a digital transformation and a new digital mindset, the organizational culture will have to change.

2.2.1   Structure, strategy, and goals

To accomplish a digital transformation, it is required to use digital innovations (Karabulut, 2020). Nambisan, et al. (2017) emphasize that the outcome of a digital innovation must not itself be digital if the outcome is developed by using digital technology. The result of a digital innovation could be new products, services, platforms, customer experiences or other value paths (Nambisan, et al., 2017). Digital innovations can also be difficult to understand and confusing if framed from an organizations current market and product framing (Nambisan, et al., 2017). The boundaries for products and industries becomes vaguer by digitalization, likewise to gain competitive advantage from the capabilities that arise from the products of digital innovations (Yoo, et al., 2010). Management must understand that a digital transformation effects the entire business model, structures of the organization, and their processes (Warner & Wäger, 2019). Furthermore, management must understand that their current market position of capabilities will not be the same and that the strategic challenges will stay in the organization if the strategic capabilities are not added in advance (Warner & Wäger, 2019). It forces companies to develop their business models to fit both products and product-centric services and understand the impact it will have on their existing business models without destroying what they have achieved and develop internal resistance or commitment to create value (Parida, et al., 2019). According to Weill and Woerner (2015) organizational politics, work in silos, global operations, legacy systems tend to make smaller and younger companies adopt better to new digital business models compared to larger and older companies.

Parvianien, et al. (2017) have identified a model for how organizations should tackle digital transformation. The major focus at the beginning should be for an organization to analyze and understand what impact the digitalization could have on their company and what they are aiming to fulfill (Parvianien, et al., 2017). Further, after understanding what the organization is working towards, the company must map their current state and compare it to their desires to be able to identify which possible gaps that can create obstacles for the organization to reach their digitalization goals (Parvianien, et al., 2017). This step is followed by understanding which steps the organization must take and in which order the actions should be proceeded in (Parvianien, et al., 2017). The final step should be to implement and review previous steps (Parvianien, et al., 2017).

Matt, et al. (2015, p. 340) describe four essential elements that every company has in common when transforming digitally: "*use of technology, changes in value creation, structural changes, and financial aspects*". Innovation usage approach the attitude and ability to exploit new innovations within a company, and changes in value creation is a consequence of the usage of new innovations which can impact the organizations processes or even business scope (Matt, et al., 2015). Further, this can lead to the need of structural changes in setup or structure to adapt to the new expanded portfolio (Matt, et al., 2015). All the dimensions will be affected by financial aspects and can force the organization to explore new ways of investments (Matt, et al., 2015). When proceeding with digital transformation, companies tend to struggle with computing return of investment (ROI) and defining appropriate key performance indicators (KPIs) (Fitzgerald, et al., 2014). Organizations should evaluate how they set-up business targets and KPIs during a digital transformation, and take actions, for example, if there is a need of rearranging internal resources or changed goals, to enable to take on external opportunities (Parvianien, et al., 2017). It is important that the common digital goal must be arranged through collaborative and transparent knowledge sharing through the organization (Trenerry, et al., 2021).

How stakeholders interpret and respond to strategic issues and changes can be impacted by their culture and the cultural differences between stakeholders (Schneider & White, 2004). Cross-cultural organizations that interact on a global context that affect the organizational and individual levels (Gelfand, et al., 2008). Contextual factors are important for understanding cross-cultural and multilevel differences, since it is influencing the stakeholder motivation, attitudes, situational factors, economic, level of technology advancement, and recourses (Gelfand, et al., 2008). The stability, strength, emotional, and history of the organization will influence the cultural opportunities, and success (Schein, 2010). Culture has an important role for the function of an organization and has influence on strategic choices, leadership, customer interactions, and the creation, sharing, maintaining and utilization of knowledge (Alvesson, 2013). According to Martins and Terblanche (2003) organizational culture can influence the creativity and innovativeness in an organization. Therefore, when organizational changes are realized, the internal stakeholders' skills and roles must be updated to fit the future with a more digital adapted workforce (Vial, 2019).

2.2.2   Culture and leadership
Further, the culture influences the risk taking, experimenting, innovation, and mindset (Vial, 2019). By starting with small incremental changes, the organization will have the ability to adapt and align their actions and plan long-term (Vial, 2019). The culture of the organization is one factor that can create a barrier towards the transformation if the digital innovations is too radical (Vial, 2019). Therefore, leadership become central when approaching a change of mindset towards digital technologies and new digital offerings (Vial, 2019) and the relationship between employee and supervisor is proven to be important in the organizational change process (Magni & Pennarola,

2008). The organizational leader should ensure a path for the internal stakeholders to follow and a well-functioning collaboration within the business (Vial, 2019). Further, cultural consistency between leaders and stakeholders influences perceived leadership style, satisfaction, and trust (Testa, 2009). Warner and Wäger (2019) discuss that politics, history, habits, emotions, and core competences in an organization that can create a holdback for senior leaders. Although, depending on the national culture of the manager and which country his manage in, that managers perceptions of uncertainty and his control of the environment affect the organization (Schneider & White, 2004). The communication and creation of meaning during strategic change can be critical to succeed with activities connected to resources, efforts, and engagement of the organization due to the national cultural influence on flexibility and adaptive behavior (Schneider & White, 2004).

Schein (2010) discusses the connection between culture and leadership of how its formed, managed, and evolved in organizational cultures. Visible leadership can be a key factor for support of people in an organization and appropriate tasks should be matched with the right internal stakeholders to manage the adaption of the organizational structure (Hofstede, 1994). Hofstede (1994) implies that common practices can help keep multinational organizations together and explains that these companies likely have multiple organizational cultures if they work in different divisions or business lines. The climate for communication is affected by organizational culture which in turn influence the internal communication, although the internal communication is also built on the organizational culture (Welch & Jackson, 2007). Schein (2010) implies that large organizations can share and build a common culture of the historical experiences they have shared, and for leaders who are not conscious about their organizational culture, the culture will instead manage them.

2.2.3 Communication, collaboration, and value

Lack of communication and internal collaboration during digital transformation can lead to resistance and decreased adoption (Trenerry, et al., 2021). Internal communication is the strategic management of interactions including all level organizational relationships between stakeholders and the importance of identifying all stakeholders (Welch & Jackson, 2007). Welch and Jackson (2007) suggest that internal organizational communication that is not connected to any specific task could enhance the development of trust and commitment by the internal stakeholders, and that communication create understanding for strategic directions. If market-oriented knowledge is limited, the lack of communication through the organization and the understanding for common goals resulting in a 'silo effect', the creation of competitive advantages through new sources and delimitation of internal marketing becomes central (Ballantyne, 2003). The organizational executives must coordinate and manage the organization to improve their chances of succeeding their digital transformation (Fitzgerald, et al., 2014). The leaders and managers have an important role of communicating a clear goal of the digital journey, and they must also ensure that the work is managed across silos, and address work of current organizational processes and business models (Cameron & Green, 2020). Communication is viewed as a key factor for successful implementation of change as it could be used as tool for explaining or preparing people for change (Kitchen & Daly, 2002). Vial (2019) instead proposes that for an organization to change its value creation process, structural changes (e.g., organizational structure, organizational culture, leadership, employee roles and skills) are needed to reduce the barriers that can occur from the change in value creation and process. The organizational structure should enhance collaboration across units and the breakup of functional silos to result in better flexibility or creating cross-functional teams (Vial, 2019).

There are multiple obstacles that can cause companies to struggle with transforming their business into more digital, for example, lack of focus on rethinking the way people work and their willingness

to accept the change, understanding on the provided value for the business and addressing the operational issues in practice (Cameron & Green, 2020). The obstacles are more likely to arise from the internal stakeholders affected in their everyday work by the intangible and tangible components of the organization, rather than top management not understanding the potential (Vial, 2019). Organizational changes, including creation and sharing of knowledge will have insignificant impact if there is lack of space for challenges and renewal of the knowledge base (Ballantyne, 2003). Internal stakeholders of an organization could resist new digital technologies due to how its implemented, the pace of implementation or the flexibility of behaviors (Vial, 2019). During digital transformation organizational work processes evolve and the organization must enhance the teamwork and cross-functional teamwork to improve the communication and integrations (Trenerry, et al., 2021). For example, workshops could be one thing that can improve the involvement of the internal stakeholders (Vial, 2019). Ballantyne (2003) emphasizes three patterns to exchange knowledge within an organization that are oriented by in experts, markets, and internal stakeholders. The expert oriented should create an exchange of knowledge through a hierarchical exchange through a top-down channels (Ballantyne, 2003). The market oriented present an inter-functional exchange which should connect internal stakeholders and customers (Ballantyne, 2003). It should be linked to the entire value chain and represent consciousness regarding the end customer (Ballantyne, 2003). The employee-oriented pattern should generate a network exchange of knowledge through internal communities (Ballantyne, 2003). These voluntary employee communities should be driven by similar interest like social or economic (Ballantyne, 2003).

2.3   Perceived quality

According to Steenkamp (1990) several researchers have provided multiple definitions for perceived quality but many of them fail to include various perspectives. Snoj, et al. (2004) define perceived quality as the customers' judgement on the product or service overall excellence or superiority. Steenkamp (1990) provides his own general description that perceived quality as perceptions, needs, and goals of the customer that may be translated into attributes. Steenkamp (1990) further elaborates his definition by involving preferences, subject-orientation interaction, and consumption experience with perceived quality. The process of quality perception includes several cues of acquisition and categorization, quality attribute belief formation, and integration of quality attribute beliefs with a constant influence from personal and situational factors before resulting as perceived quality (Steenkamp, 1990). Perceived quality attributes could be defined as product or service attributes that communicate benefits to the customer (Stylidis, et al., 2020). Rogers (2003) argues that the way the addressed adopters perceive the attributes of an innovation is critical when the decision is taken whether to adopt or not. Further, the author defines perceived attributes of an innovation as: relative advantage, compatibility, complexity, observability and trialability. Snoj, et al. (2004) point out perceived quality as one of the main concepts of benefits and the perceived benefits could be defined as a combination of different attributes during usage. Quality attributes represent a level of perceived quality which is measured by comparing attributes to consumer expectations (Snoj, et al., 2004). Further, perceived quality has been closely connected to perceived value in previous research and Snoj, et al. (2004) describe perceived quality as an impacting factor of perceived value. Rivière (2015) describes the attributes of an innovation as sources of value creation during usage. To use perceived value as an aspect of perceived quality is preferable as it help gain understanding of the accepting behavior of the individual regard to innovations (Rivière, 2015). Quality of an innovation could also be understood as its value to the customer (Snoj, et al., 2004).

One can argue that previous research on perceived quality is limited to acknowledging the customer perspective on perceived quality and the perceptions of internal stakeholders have not been explored enough, considered digital innovations serve internal stakeholders as much as customers. Because quality perceptions are fundamental for the adoption of innovation (Moore & Benbasat, 1991), literature on perceived quality is used to shine new light on the theoretical entity of adoption of innovations. For this study, perceived quality is acknowledged as the internal stakeholder's perceptions regarding digital innovation and the perceived quality in turn influences the internal stakeholder's intension to use the digital innovation. Perceived quality for this study focuses on perceived quality attributes and perceived value of the digital innovation.

2.3.1 Perceived value

Grönroos and Voima (2013) argue that without a clear definition of value it can be concluded that everything is value, and the authors emphasize that different context like social, physical, and temporal affect the usage and will change what type of value is created. In previous research value is generally conceptualized on an individual level and determent of the trade-off between benefits and sacrifices (Grönroos & Voima, 2013). Snoj, et al. (2004) argue that there is a clear connection between quality and value since their study implied that the perceived value of product was drawn to the perceptions of quality of the product. This study focuses on exploring the adoption of new digital innovations on an individual level and organization level, and value could be explained as the perceived benefits the internal stakeholder receives based on the overall evaluation of the digital innovation. Internal stakeholders are engaging in the value creation process in various dimensions that can depend on their, for example, personal experience, functional, organizational structure, and social exchange with external stakeholder (Grace & Iacono, 2015). Tantalo and Priem (2016) propose that different stakeholder groups are driven by various values and finding a propriate synergy between the stakeholders can be challenging, for example, the ability to create value for one stakeholder group from certain value drivers without having a negative effect on other stakeholders. Culture could affect stakeholders learning motivational orientations, as well as performance (Gelfand, et al., 2008). If a manager can convince the group to share the belief and perception of success, the collective perceived value can be transformed into shared value or shared beliefs, and later to by shared assumptions (Schein, 2010).

For large organizations in industrial markets, it is common to have multiple stakeholders internally and externally included in the value creation process, although the projects linking them might be controlled from others (Ballantyne, et al., 2011). It is equally important for the internal stakeholders to deliver a high quality to the external stakeholders as for the internal stakeholders to stay satisfied to enable the appropriate conditions to get a satisfied external customer (Gummesson, 1987; Grace & Iacono, 2015). Internal stakeholders must be able to understand the strategic direction of their organization otherwise they might lack commitment or trust for the strategy or senior management (Welch & Jackson, 2007). Top management have an important role to ensure that internal stakeholders an equal mindset when it comes to value-creation (Tantalo & Priem, 2016). It can affectively lead to more value-creating innovations and that important stakeholder groups increase the value creation, which further can lead to better engagement from stakeholders and a more effective organization (Tantalo & Priem, 2016). According to Parida, et al. (2015) a well-functioning relationship between a company's headquarters, R&D units, regional units, customer, and delivery partners are crucial for information sharing across units, and to customize the value creation for individual regions and new solutions. Traditional processes of work in silos and organizational culture complicated the process of intercept the customer demand and therefore decrease the perceived value (Trenerry, et al., 2021).

According to Tam (2004) customer loyalty can be enhanced by quality and perceived value, and that the internal stakeholder perceived value is connected to customer satisfaction, loyalty, and productivity. The value-creation process must connect the stakeholders and every stakeholder must understand their own particular value they perceive (Tantalo & Priem, 2016). Further, Grace and Iacono (2015) explain that developing the perceived value for internal customer is more difficult and will be affected by the individual level of the internal stakeholders and can be affected by factors like for how long the stakeholders have been connected to the company. Social structures influence that service exchange and value-creation, and the interactions between stakeholders are accepted or unaccepted through norms, values, and ethics (Edvardsson, et al., 2011). Edvardsson, et al. (2011) propose that the social aspects on stakeholders influence the perception of value.

Making promises is another central part when creating value and can be influenced by everything from leadership skills, developing of goods and services and functioning systems but also enabling value creation for the customers by interaction in their processes (Grönroos, 2009). Without a well-functioning support internally, the marketing process can fail due to companies will have issues with generating the appropriate support the processes for creating value for their customers' (Grönroos, 2009). To develop an effective internal exchange at participants and organizational level the value and fulfillment of an offering rely on the commitment, trust, and mutual promises (Ballantyne, 2003).

2.3.2 Perceived quality through internal marketing and value propositions

When a company moves forward on digitalization investments across the company, it is important to enable the new possibilities for value creation (Parida, et al., 2015). The stakeholder needs to understand its customer, and their resources and processes (Tam, 2004). The organization must provide the required resources and training for the internal stakeholders to meet the customer demands and to be able to deliver quality services (Schneider & White, 2004). Tam (2004) implies that perceived value relates to customer satisfaction and perceived service quality, which in turn affect the internal stakeholders and their perceived quality. A critical aspect for perceived quality is that the internal stakeholders shared the same understanding as their organization (Yoo & Park, 2007). According to Medberg and Grönroos (2020) the managers are responsible of preparing their internal stakeholders, so they are willing to promote innovations for their customers.

Perceived value is closely connected to the marketing literature (Snoj, et al., 2004) and internal marketing is viewed by Boukis (2019) as a resource to create and enhance value for the internal stakeholders. The internal marketing concept originates from the perspective of focusing on improving the quality of internal frontline stakeholders by satisfying their needs and creating value (Boukis, 2019). As the concept have developed, the focus has shifted towards focusing on satisfying the needs of a group of internal stakeholders, before they are able to meet the needs of the external customers (George, 1990). Ahmed and Rafiq (2000, p. 453) describe internal marketing as "a *planned effort using a marketing-like approach to overcome organizational resistance to change and to align, motivate and inter-functionally co-ordinate and integrate employees towards the effective implementation of corporate and functional strategies in order to deliver customer satisfaction through a process of creating motivated and customer orientated employees*". Foreman and Money (1995, p. 756) explain that internal marketing can be broken into two components, one that "*everyone in an organization has a customer*" and two, that "*internal customer must be sold on the service and be happy in their jobs before the can effectively serve their final customer*". To ensure success of internal marketing it is a precondition to create value for internal stakeholders and if organizations fail to retain and encourage their employees, they will most likely fail to deliver the superior value to their customers (Boukis, 2019). If management expects their employees to handle

their customers in a good way, management must be prepared to manage their employees in a good way as well (George, 1990). Organizations must continuously update their stakeholder's knowledge and competencies to stay in a competitive position on the customer market (Ballantyne, et al., 2011). To promote a firm and its products to its internal stakeholders is another view of internal marketing (Greene, et al., 1994). Internal marketing manages internal stakeholders at all levels of an organization to improve the way that they serve external customer, and it is to be remembered that internal marketing is both customer-focused and employee-focused (Joseph, 1996). Internal marketing could help organizations implement processes which creates inter-linkages between individuals, organizational functions and activities that result in the delivery of quality expected by the final customer (Ahmed & Rafiq, 2003).

The development of value propositions can increase the value creation for the customer through both products and services (Skålén, et al., 2015). Boukis (2019) emphasizes the exchange of value proposition between the organization and internal stakeholders as very important aspect in the value creating process. Payne, et al. (2017, p. 471) provide a definition of a customer value proposition as "*a statement of how the firm proposes to deliver superior value to customers and to differentiate itself from competitors*". The definition of value proposition for this study follows the definition that Payne, et al. (2017) describe, and this study explain value proposition as a statement that summarizes why a customer or internal stakeholder should choose to use the digital innovation. Value propositions is today referred as part of internal marketing (Sheth, 2020) and could be viewed as a value generating activity (Boukis, 2019). Vial (2019) proposes a change of value propositions by new digital technologies. Skålén, et al. (2015) propose that the actions taken to develop existing practices, or the creation of new practices and resources are established through digital innovation which can be derived to the development of new value propositions. Several practices are used to integrate resources with value propositions (Vargo & Lusch, 2008), and the integration can involve multiple stakeholders (Ballantyne, et al., 2011). Vargo and Lusch (2008) argue that the individual stakeholders (social and economic) are the integrators of resources. The practices regard provision for the certainty if fulfilling the value proposition, the representational for communicating (internally and externally) with parties, and management and organizational practices are focused of how to integrate, allocate, share knowledge, and involve others in the value proposition (Skålén, et al., 2015). Skålén, et al. (2015) discuss four types of ways to accomplish digital innovation, one of them is adaption and described how integration of existing resources in existing practices. The normal planning processes, implementation steps and strategy formulation obstruct the innovative practice, meaning that the communication and mutual value propositions must improve (Ballantyne, et al., 2011). The use of value propositions could understand how the value is distributed within a stakeholder network, but to improve the social and economic values it requires the stakeholders to develop more efficient processes for sharing their knowledge (Frow & Payne, 2011). Ballantyne, et al. (2011) argue that value propositions should be developed through the mutual exchange of value for the stakeholders, and that the perceived value should be fair. The organizational culture impacts the organizations' ability to build the required capabilities for their value propositions of new digital innovations (Vial, 2019).

3 Method

The following chapter presents the research methodology and research approach used for the master thesis. The approach, literature study, data collection, and analysis steps are described and discussed from various perspectives. Further, there is a deeper discussion about the method of the thesis.

3.1   Research methodology and approach

The research method of the thesis project was divided into two parts including the case-study approach and the course of action. Both parts are described and discussed from a perspective of importance for the purpose and research questions.

3.1.1   Case-study approach

This section will present the chosen approach of this study. For this study the chosen case-study method was a multiple case study with a qualitative approach. Yin (2009) describes how to do case study research as a linear process but at the same time as an interactive process, and that case studies can be used to deeper understand phenomena in real-life. As this study explore how perceived quality, and essential and supportive of an organization influences the adoption of digital innovations it is more of questions of "how" and "why" rather than "what" and "where" which according to Yin (2009) corresponds to a case-study approach. The author includes six steps of the case study process: plan, design, prepare, collect, share, and analyze (Yin, 2009). Yin (2009) explains that a multiple case study contains more than a single case and could be either holistic or embedded. Further, Yin (2009) also points out that a multiple case study is preferred over a single case study because it is considered more robust as the propositions are rooted in varied empirical evidence. Multiple cases enable a broader exploration of the research questions (Eisenhardt & Graebner, 2007). For this master thesis, the explored case was "adoption of digital innovations", and the study focused on collecting and analyzing data within that case. Due to the case company being a global organization, the case could be that the entire organization would adopt the same digital innovation, or the case could be that various parts of the organization adopts different digital innovations. The case of "adoption of digital innovations" could be applied for various contexts depending on the organizational location of the case that was explored or the internal stakeholder who provided the empirical data. Therefore, this study was an explorative multiple case study focusing on exploring the case of "adoption of digital innovations" in multiple contexts within the case company. The analysis unit of the study focused individuals and their perceptions on the case.

Qualitative research methodologies can be based on theory, a conceptual framework and rely on an information gathering process (Dobrovolny & Fuentes, 2008). Further, Dubrovolny and Fuentes (2008) describe when deciding on a qualitative research methodology it is important to think of the "what" or "which" questions the study aim to answer. This study is qualitative to create a deeper understanding for what factors to consider when adoption digital innovations internally in a global organization. Qualitative studies are often also associated research questions concerning a "how" or a "why" (Dobrovolny & Fuentes, 2008) which is in line with this study. The qualitative approach provided more useful information of how the case company worked, personal values, background, and beliefs, and what potential differences could be and why. A quantitative study may had given a larger data sample, although the questions would not have provided the research with the same depth regarding the information from the participants. It would not have been possible to get a sense of the attitudes and reactions of the questions or ask further questions regarding interesting subjects brought up by the interviewees. The case-study method presented a nuanced view of the

case company, and the perspectives of the stakeholders provided relevant information to approach and answer the purpose and research questions of the thesis. The method enabled to provide the case company with statements of the internal stakeholders of what could be developed and improved to perceive more quality in their work and create more value for their external stakeholders and customers.

3.1.2 Course of action

This section aims to give the reader an overall understanding for how the process of the master thesis was conducted. Figure 1 present the course of action for this study and how the research method was divided into four phases: planning phase, design phase, data collection phase, and analyze phase. These phases were inspired by the six-step process by Yin (2009) and adjusted to fit this thesis project.

Phase 1: Planning Phase	Phase 2: Design Phase	Phase 3: Data Collection Phase	Phase 4: Analyze Phase
Problem introduction	Literature study	Interviews	Analyzing of data
Definition of purpose	Designing of interview questions		Discussion
Delimitations	Working method		Conclusions
Informal interviews			
Company presentations			
Formulation of research questions			

Figure 1: Course of action for the master thesis which include the four overall phases of planning, designing, collecting data, and analyzing.

Planning phase

The planning phase included several activities that all together generated information which served as the basis for the pre-study. The aim of the planning phase was to define the "what" of the study (Yin, 2009). To initiate the planning phase, the case company introduced the company through multiple presentations which aimed to increase the overall knowledge of the case company and to clarify the problem description. Further, during this phase there were multiple conversations with internal stakeholders in the case company to understand the structure of the organization, and to understand their products and services, and get a basic understanding of how the case company worked. Together with the case company, the overall purpose of the master thesis was discussed and developed. Questions regarding "how" and "why" was used to identify and develop the research questions for the thesis and define the scope (Yin, 2009). Multiple introduction interviews were conducted with the case company to gather more insight information which was necessary to formulate the research questions. Based on problem definition, delimitations, and consultation with the case company, two research questions was formulated. The overall purpose and the research questions represents the "what" of the study. The developed research questions served as the basis for the "how" of the study and a detailed working method was created.

Design phase
The aim of the design phase was to define the "how" of the study (Yin, 2009). Defining the "how" of the study was separated into designing the theoretical framework and the method for the study. A literature study was completed and included collecting relevant literature for the theoretical framework. The theoretical framework is an essential part of the study (Yin, 2009), and was formed to provide the reader with the appropriate literature. The method of approach for the study was designed during the design phase. Designing the method included developing an overall approach for the study but also to design and formulate interview questions to use in the interviews during the data collection phase. This phase was necessary to provide the reader with the background and literature required to understand the thesis, to enable that appropriate literature was collected to help answer the purpose and research questions. Further, the design of interview questions was very important to allow the participants to provide honest and necessary responses that could support the answer of the purpose and research questions.

Data collection phase
The data collection phase consisted of gathering data, which was necessary to perform the forthcoming analysis, and to answer the purpose of the master thesis and research questions. The data was mainly collected through individual interviews on multiple levels of the organization. The intention of the interviews was to gather relevant information regarding how quality of digital innovations perceived by internal stakeholders and, also to collect information about how and which factors influence the adoption of digital innovations. RQ1 and RQ2 were expected to be completely answered through the data collection phase. Before the interviews started, a pilot study was performed to ensure the understanding of the questions. Interviews were all performed digitally. All interviews were based on the same questions set up to provide important information and understanding to answer the research questions.

Analyze phase
The aim of the analyze phase was to investigate what factors influence the internal adoption of digital innovations. First the collected data was sorted, analyzed, and summarized to enable an analysis of the data. This was conducted by coding the data. Certain patterns and interested findings were highlighted from the data. The discussion was performed through a comparison between gathered data and the theoretical framework. A conceptual model was presented and used to understand what areas that should be considered when adopting digital innovations as stated in the purpose of the thesis project. Also, the conclusion phase included the conclusions and further potential research was presented.

3.2   Literature study

The collection of literature can be used to create the theoretical framework for the study and the final theoretical framework will include all aspect that emerges in the analysis (Baxter & Jack, 2008). The theoretical framework was created through extensive research on relevant literature. The process of collecting relevant literature was completed through two stages. The first stage was performed through an unstructured approach where general searches in the field of interest was accomplished. The unstructured approach aimed to create a broader view on what previous research have been conducted in the area. The aim of the theoretical framework is to build a foundation which will demonstrate how a study progresses knowledge, conceptualize the study, create understanding of current research design and to basis for comparison and interpretation of findings (Rocco & Plakhotnik, 2009). Creating a broader knowledge base about the field of interest was important to have as a foundation when developing the research questions for the study.

Arguments of why the chosen theoretical framework is used provide a link to the aim of the study and case evidence can be used to strengthen these arguments (Eisenhardt & Graebner, 2007).

Stage two included a more structured approach for searching relevant literature and more specific searches were conducted on previous research. These specific searches for literature revealed several keywords that were commonly mentioned and used by other authors with the topic of interest. During the introduction interviews with the case company, the interviewees expressed themselves through similar keywords. There were keywords that was mentioned by almost every interviewee and some of these keywords was familiar to the authors from reading previous research and some keywords were new. The keywords from previous research combined with used keywords from the introduction interviews were discussed between the authors and resulted in the deciding on several main keywords which were used as the base for stage two searching. These keywords were assumed to cover the relevant topics to provide answers for the research questions for this master thesis as they combined previous literature and words used within the industry. The keywords were found to be relevant for the master thesis study, even when more literature was added after the interviews and coding of the data. A complete list of keywords which has been used when searching literature for this study is presented in Table 1.

Table 1: The keywords that were used when searching for previous literature to review for this study.

Keywords
Internal Marketing
Digitalization
Digital Innovation
Culture
Adoption of Innovations
Digital Transformation
Perceived Quality
Internal Stakeholders
Value Creation
Quality Attributes

The approach for searching articles was also expanded, and the method of "backward snowballing" was applied. Jalali and Wohlin (2012) describe backward snowballing as a method when the reference list of one article is used to find new relevant literature. Before examining the new paper, the title, authors, and publication venue should be reviewed (Jalali & Wohlin, 2012). Since snowballing focuses on using relevant articles to find new literature to review, all papers have been assumed to be relevant (Jalali & Wohlin, 2012). There can be a risk for snowballing to focusing on the same type of articles and makes it more difficult to identify other well written and reviewed articles (Jalali & Wohlin, 2012). During the process of snowballing, it was important to follow the same guidelines as for the rest of the articles with and aim to use well cited and peer-reviewed articles. The method was used find more information and literature from both relevant and well-known authors, when interesting information was cited to other authors in the literature, and to be able to read the original source of information. The approach was found to be useful to identify more relevant literature, even if there could be a risk of looping the same authors.

The literature was accessed through articles, books, e-books, and research reports. Articles for this study was mainly gathered from Google Scholar and through the electronic database of library of Linköping University which gives access to multiple databases. The chosen articles were either well

cited or written in well-known journals. Books were collected from the library of Linköping University. To conclude, all articles used for the thesis were from peer-reviewed articles.

3.3   Data collection

Common qualitative data collection techniques for case study approaches include multiple sources like interviews and documents (Crowe, et al., 2011). A qualitative research method by conducting interviews can, for example, generate information regarding opinions, behaviors, values, attitudes from the interviewee's perspective (Rowley, 2012). The collected data for this study was qualitative data by conduction of interviews with internal stakeholders. The method of collecting data from individual interviews were chosen both to make the interviewees feel more comfortable, honest and have the ability to really express their opinions. Since all the interviewees were located and working in various countries and cities, all interviews were decided to be performed digital. Furthermore, it was decided to conduct all interviews individually to make the interviewees more comfortably expressing their opinions and thoughts in order to improve the results from the collected data. Other methods, e.g., focus groups, workshop or in-person interviews were not chosen to be included in the master thesis study due to time and expenses with travels or an ethnography method due to difficulties to compare the results. Methods like regression or kano were not chosen since these methods were assumed to be irrelevant for the study. The identification or relevant variables have been chosen by the authors of the thesis study and not the participants expressing their own factors of importance.

3.3.1   Interviews

Semi-structured interviews are a combination of a structured interview and an unstructured interview which gives the interviewer the opportunity to base the interview on several prepared questions and potential follow up questions if needed to ensure a thorough answers (Rowley, 2012). All the interviews were conducted as semi-structured interviews to ask several questions to all interviewees to create a personal map and compare the answers of the interviewees. Further, to have the ability to ask follow-up questions depending on the interviews development and to make sure that the answers were thorough enough. Semi-structured interviews were the best choice to enable all the interviews to follow the structure and order of the interview questions, and that follow-up questions could be asked when more information was needed. According to Rowley (2012) the initiation of interviewees should include sharing some information regarding the interviewers, the projects, the time of the interview, confidentiality, permission to record. When the potential interviewees were approached and agreed on participating on the interview, the interviewees were asked to agree or not agree to be recorded. The interviewees were ensured that the interviews were confidential and the information they shared would be anonymous, and that the interviews would be deleted when the project was finished. This is further discussed though an ethical perspective in section 3.7.

One way of conducting interviews is by digital meetings (Rowley, 2012) and all interviews for this master thesis were performed digitally. This were because the authors of the thesis were not able to travel to all the internal stakeholders due to cost and time, and due to restrictions of physical meetings at the case company at the beginning of the master thesis study. The individual interviews in this project were approximately 50-70 minutes. The duration of the interviews was assumed to be reasonable as it was enough time to gather all information needed but at the same time short enough to get employees to participate during workhours. Both authors were present and participated equally during every interview with the stakeholders. The interview process started after approximately a month into the thesis and continued for around 8 weeks. The interviews

aimed to provide relevant information and data to answer both research questions. Most of the interviews were held in English apart from the interviewees speaking Swedish. The exception of performing some of the interviews in Swedish were considered to make the interviewees more comfortable speaking their native language.

According to Eisenhardt and Graebner (2007) to get a diverse perspective from the interview data, the interviewees should include internal stakeholders from a variation of hierarchical level, divisions, functions, groups, and geographical areas. For this thesis study multiple interviews were performed with internal stakeholders from different company divisions, functions, groups, hierarchical levels, and geographical areas of the case company. There were two informal interviews or conversations conducted with internal stakeholders from top management of the organization to get a deeper view of the company and how they work. These interviews were not included in the study. The informal interviews were followed by individual semi-structured interviews to collect relevant data for comparison and analysis of the data. Only the semi-structured interviewees were further analyzed since the informal interviews did not follow the same types of questions. There were 17 individual interviews conducted excluding the informal interviews to develop the understanding for the case company. The number and orders of the interviews, and the duration of the interviews with each interviewee are presented in Table 2. The quality of the interviews was improved by structuring the interviews in the same way, and the number of interviews strengthened the study with more perspectives and a good organizational spread.

Table 2: List of the interviews in the performed order, the duration of the interviews, and how the interviews were conducted.

Interview number and order	Duration (Hours:Minutes:Seconds)	How the interview was conducted
Interviewee 1	1:11:11	Digital
Interviewee 2	0:54:41	Digital
Interviewee 3	0:58:05	Digital
Interviewee 4	0:59:29	Digital
Interviewee 5	0:59:52	Digital
Interviewee 6	0:57:47	Digital
Interviewee 7	0:55:38	Digital
Interviewee 8	1:01:34	Digital
Interviewee 9	0:53:29	Digital
Interviewee 10	1:09:51	Digital
Interviewee 11	0:58:02	Digital
Interviewee 12	0:58:48	Digital
Interviewee 13	0:58:17	Digital
Interviewee 14	0:53:29	Digital
Interviewee 15	1:01:05	Digital
Interviewee 16	1:05:40	Digital
Interviewee 17	0:59:06	Digital

The individual interviews were conducted with internal stakeholder origins from nine countries around the world (number of interviewees from country): Sweden (4), United States (5), Finland (1), Russia (2), United Kingdom (1), Croatia (1), Germany (1), Portugal (1), and Poland (1). Some of the interviewees were not based in the country origin and several interviewees had worked in several countries, both within the case company and/or other companies. There were a few more interviews conducted with people working in Sweden and United States due to the number of people working in these countries, and the current investments from the case company within these market regions. This study focused on global context and the limited spread among the different

countries could be viewed as a limitation, on the other hand, as this study was a qualitative study, the quality of the interviews more important than the spread between different countries. The positions of the interviewees for the same country were also a mixture in hierarchical level and teams.

Interview questions are important, and the interviewer should make sure that the interviewee understand the questions (Rowley, 2012). Therefore, a few days before the interviews the interviewees received the main interview questions to read through and a short presentation of the project. That enabled the interviewee to prepare for the interview and think ahead of potential answers for questions, but also to make the study more transparent for the internal stakeholder to understand the questions and the reason for the thesis study. Two stakeholders of the case company who were related to the project, were included in a pilot of the interview questions. A pilot study can ensure an understanding of the questions and feedback (Rowley, 2012). The two case company stakeholders provided feedback of the questions, before discussing the questions and the feedback together. Another pilot was conducted by the university supervisor of the thesis study provided feedback of the questions. The university supervisor had a greater focus on the research questions and the case company employees a perspective of what was interesting for them to find out.

All interviews were based on the same questions but depending on the title of the interviewee some questions were changed. For example, some of the questions for a manager could differ from the question of a front-line employee. The prepared interview questions that were the same for all the interviews are presented in Appendix. The follow-up questions from the interview were not presented since they depended on the information from the participants and becomes revealing of the case company. The questions for the study were open to enable the interviewees to express their thoughts and experiences freely. The questions were categorized into five categories: introductory questions, general questions, digital innovations, perceived quality and concluding questions. These categories were chosen to enable the interviewees to answer what was important for them when digital innovations were promoted and launched, what they were missing, and to compare the different statements of the interviewees. The categories and interview questions were formed after conducting the informal interviews for the researchers to have a better understanding of the organization. The categories of the questions were not shared with the interviewees in the pre-sent material, but for the researchers to label different themes. During the interviews, the interviewees were asked if there was any question, they thought were especially interesting to explore further with other stakeholders of the company. By asking the interviewees of their perspective of the questions and what was important, more perspective was included in the study and after a few interviews the interview questions were then reviewed and evaluated. The changes to follow-up questions enabled to get further focus on questions and answers in certain areas, and to get more clear and concrete answers.

The order of the interview questions was important, and the questions should neither be leading, have assumptions, invite for a "yes/no" answer or be too vague (Rowley, 2012). To get more effective and relevant answers the questions should mainly be of probe questions that start with "how" (Baškarada, 2015), which also can be perceived as less defensive then using "why" questions (Yin, 2009). Based on the literature the interviews focused on asking the interviewees how they would explain certain things or subjects and if the interviewees could describe their thoughts and view of specific subjects or share what their vision or interpretations. To create an image and profile of the interviewee, a range of contextual questions were asked. These questions about demographic, social status, interest, motivations, frustrations, tech-savviness created an

understanding of cultural differences of the organization, the interviewees personality, interest, and view of digitalization. These questions were asked to understand the differences of the personal thoughts, behaviors and interests could either resemble or distinguish, and if these factors had any sort of impact of the culture. Questions regarding cultural backgrounds and how long the stakeholder had worked in the case company aimed to understand if there could be any connections or deviations from stakeholders who had worked in the organization for a longer time period compared to a shorter time period.

To process the collected data, all the data was transcribed. Transcribing the interviews is a great way to work through the recordings and collection of data, and preferably soon after an interview the interviewer should listen to the interview again and note key points (Rowley, 2012). The interviews were transcribed automatically through Microsoft Words dictation function during the interviews, and afterward the recordings enabled a quality review of the transcribed data manually. This enabled to use citations from the interviews in the analysis and compare the answers from several stakeholders. The interviews that were held in Swedish was translated to English after the interviews and the citations from the Swedish speaking interviewees are presented in the exact translation of the comments or describes from the perspective of the question.

3.3.2 Sampling strategy

Since the interviewees would influence the outcome of the study the selection of interviewees became important. A basic profile of the interviewees can help to understand the importance of the information and who would be necessary to speak with (Rowley, 2012). To answer the research questions several interviewees with stakeholders in various positions from the top management of the organization to front-line in close contact to the customers were approached. The hierarchical levels of the organization were divided into four levels: top management, middle management, lower management, and front-line. The distribution of the interviewees and their hierarchical level is presented in Figure 2, although the interview number and order were not connected to their level in the organization to prevent the interviewees from being revealed. The supervisor from the case company helped to choose internal stakeholders for the interviews, and the supervisor was also the first one to approach the stakeholder to ask if they wanted to participate in the project. All stakeholders were approached by e-mail, both from the supervisor and from the researchers. The interviewees were from various company divisions and departments within the company divisions and had worked in the organization for a various amount of time to get at broad scope of the collected data. The supervisor at the case company provided appropriate information of the organization and which perspectives that would be especially interesting for them to know more about. To get a broader scope and perspective away from the stakeholders known from the supervisor, a few interviewees were asked if they had recommendations of other stakeholders to include in the study. The idea of asking the interviewees regarding other potential interviews to this study, were not thought of at the beginning of the interview stage. This was one way to fill possible gaps of that was not covered from the first rounds of interviews and to get a better distribution of the interviewees at various levels of the organization. All recommendations and interviewees were discussed with the supervisor, to get multiple perspectives of the collected data. The chosen interviewees originated from nine countries, which were chosen to limit the research, enable good connections and a range of different individuals. These countries represented markets were the case company expected to provide relevant and interesting results, also markets were the working processes looked very different. One limitation is that there was only one participating female in the study, the rest of the 16 interviewees were male. In both the case company and the industry there is a large majority of men compared to woman, and the gender representation of the participants in the thesis study reflect comparatively well to the gender representation of the

industry. Although, the gender distribution did not enable to find any comparisons or patterns between the genders.
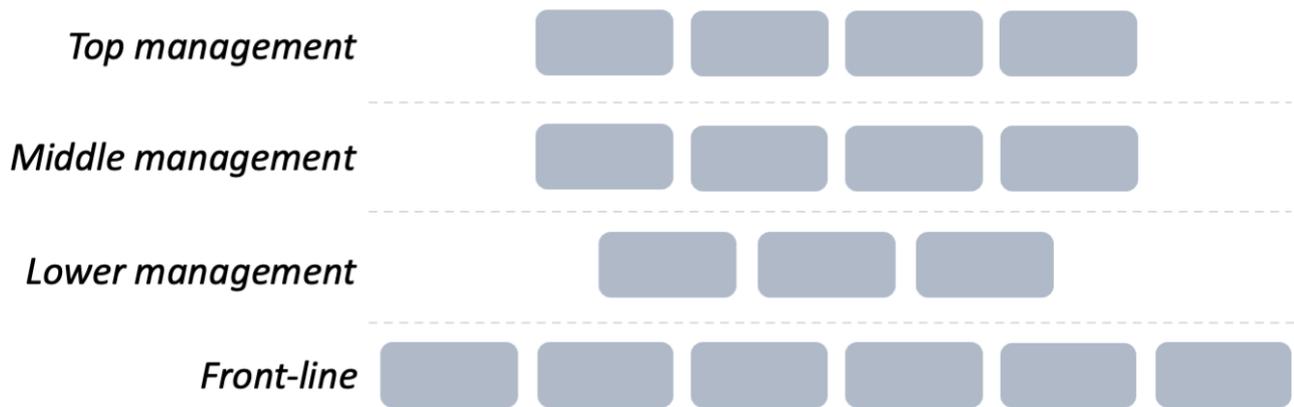
Figure 2: Present the distribution of the interviewees depending on hierarchical level in the organization.

3.4   Coding of data

The coding of qualitative data from interview transcripts was performed by several steps. Saldaña (2021) describes that the first step is about analyzing the data by understanding the range of the data and the magnitude of that data by choosing one single word, a sentence, paragraph, or up to an entire page. The next step was about synthesis and to connect different findings and develop new meanings (Saldaña, 2021). Since coding is a cyclical process it demands certain qualifications of the qualitative researchers, and the researchers must be prepared to redo the process of coding at least once or twice, but likely even more times than that (Saldaña, 2021). When coding, the researchers should search for patterns in the collected and coded data, and the patterns can, for example, be characterized by similarity, difference, frequency, sequence, correspondence, and causation (Saldaña, 2021). The process of coding was inspired by Saldaña's (2021) method for coding and was performed through three cycles. The first cycle was performed through open coding, and this included both authors categorizing their opinions of assumed relevant information in the collected empirical data. In practice, this means that the researchers went through all transcripts of the interviews and highlighted sentences or words that they assumed to be relevant. During the first cycle of coding, both authors reviewed and coded every interview. Even if this approach demanded more time, it enabled both the authors to review the material a couple of times after the interviews and refresh their memory of what was stated and remember the interviewees personality traits. The coding of the data was performed manually by using Microsoft Excel. The second cycle was completed by axial coding which refers to interconnecting the categories. This was performed through combining similar information and placing them together in different cells in excel. Similar information in these cells was combined into one sentence that represents the first order categories. The second cycle was performed by both authors together by discussing which categories that were found. Lastly, a third cycle was performed through selective coding which included connecting the first order categories and creating themes. The third cycle was also completed by both authors together. The coding resulted in eight themes which were also combined to create three overall areas of the conceptual model which are presented in Table 3.

Table 3: Definition of the first order categories, the first order categories, themes, and the overall area from the coding.

Definition	First order categories	Themes	Overall areas
The influence of the organizational structure	*Structure and size*	**Organizational structure**	**Organizational factors**
Proactive or reactive ways of working, how processes are worked with, renewal of processes, time-period of processes, focus work on team or organization	*Processes and ways of working*		
The rule and regulations that internal stakeholders should follow	*Rules and regulation*		
What resources and competence are currently available in the organization, what resources are missing, and resources needed to maintain digital innovations	*Resources available for digitalization*		
Strategy and roadmap for digitalization both internally and externally, description of digitalization, long-term perspective, and connection between strategy, customer needs and road map	*Digital orientation, strategy, and roadmap*	**Organizational strategic position**	
Business model suitable for digital innovations, guidelines, and knowledge for creation of value propositions	*Digital business model and value propositions*		
Measurements of success suitable for developing and selling digital innovations	*Digital success measurements*		
Ability to participate in development processes	*Involvement*	**Organizational adopter environment**	
Encouragement to try, and try digital innovation	*Encouragement*		
Promises from previous digital innovations to internal stakeholders and customers	*Promises*		
Collaboration on a local and global level within the organization, efficient collaboration if goals are aligned, how knowledge is shared, focus on personal or organizational interests	*Collaboration and knowledge sharing*		
Commitment from management in digitalization	*Management commitment*	**Organizational commitment towards digitalization**	
Support and trust from local and global organization	*Trust and support*		
Create awareness of the digitalization, normalize conversations, and make internal stakeholders comfortable talking about the digital innovations	*Create awareness*		
Educational activities to understand the value of digital innovations, how to present value to the customers, and how to use them	*Education and training*	**Promotional activities**	
Trusted colleagues to present digital innovations, use digital ambassadors to lead, coordinate and unify digital initiatives	*Internal marketing from communication and digital ambassadors*		
Digital innovations should be easy to use	*Ease of use*	**Quality attributes**	**Perceived quality of digital innovation**
Digital innovations should be able to interact with other platforms, and flexible and adaptable	*Compatibility and flexibility*		
Digital innovations should be quick to use	*Quick to use*		
Digital innovations and solutions should focus on the customer, address the customer need, enable customers to get more information to make better decisions, and understand the value	*Perceived benefits for customer*	**Digital innovations as value creating mechanism**	
Digital innovations should make the work for internal stakeholders easier, more efficient, and to run smoother	*Perceived benefits for internal stakeholder*		
Understanding for data, how data can be used, and how data can generate value to the customer	*Understanding for data utilization*		
Individual characteristics, attitude towards digitalization, and motivations	*Attitude, behavior, and values*	**Personal characteristics**	**Individual adoption**
Perceptions and interests of digital innovations	*Digital knowledge and interest*		

3.5   Analysis

The results of the data collection could be presented as a conceptual model including these themes found in the coding. The conceptual model was based on how these themes influence the adoption of digital innovations and is presented in Figure 3 in the chapter *Empirical findings.* According to McInnis (2011) there are different types of contextual contributions, where one has a general goal of explicating and specific goal of delineating. This type of contextual contribution could mean to describe, chart, detail relationships to entities, and evaluate by describing entity, how it works or roadmap, are often named a conceptual framework (McInnis, 2011). This study has followed a delineating approach when contributing with a conceptual model. After analyzing the collected data and forming the conceptual model, a typification of four different behavioral types identified for the interviews and the collected data could be put together. The typification was based on nine variables from questions asked during the interviews and behaviors. The nine variables were: goals and road map, self-centricity, approach towards new things, expressed confidence, acting, attitude towards change, risk-concerned and customer centricity. Although, since the result of the behavioral groups were not planned for the study, there were no thoughts regarding the questions. It was to understand the differences of the interviewees rather than understanding their behaviors. The authors worked together and discussed the different answers to the questions and detected behaviors during the interviews. From the discussions, the interviewees who expressed similar answers and behaviors were mapped into the same groups. After the authors had completed the typification of the four behavioral types, the supervisor from the case company reviewed the typification and agreed with the authors. For the discussion, the theoretical framework was used compare the findings of the data collection. For example, the attitudes towards digital innovations and digital transformation journey of the case company were compared to the theoretical framework of potential holdbacks and difficulties during these processes.

3.6   Research quality

The research quality is a reflection that include the chosen method, the reliability and validity of the method, criticism of the sources and ethical aspects (Yin, 2009). There are four conditions that can be related to case study design and the quality of it: constructing validity, internal validity, external validity, and reliability (Yin, 2009). All these conditions were approached and fulfilled in different ways during this study and are discussed through the design of the case study.

3.6.1   Reliability

The data collection of the study must provide the same result if the procedure is repeated to obtain reliability (Baškarada, 2015). To fulfill the purpose of reliability of the study, errors should be minimized, the study should be bias, and there should be documentation of all steps of the study (Yin, 2009). Campbell, et al. (2013) propose three types of reliability: stability, accuracy, and reproducibility. The coding should remain unchanged over time to create stability, the coding should develop and compared to create an appropriate accuracy, and the coding of data should be developed in the same way to create reproducibility (Campbell, et al., 2013). By approaching these types of reliability, a trustworthiness of the thesis can be developed and therefore provide a higher reliability. The layout of the study provide reliability in terms of both stability, accuracy, and reproducibility. All steps of the study were documented, for example, every interview was recorded and transcribed in the same way, every interview was based on the same question even if some changed depending on hierarchal position within the case company, every follow up question was documented, all interviewees received the same information before their interview, and information about the case company was given from multiple stakeholders. The documentation and

formulation of interview questions increase the reproducibility of the study. The interview questions were not applied towards a certain product, service, or solution to enhance the reproducibility. During qualitative studies, the risk of being bias was greater and the authors had to behave and approach all interviewees and internal stakeholders in the same way. Furthermore, this could change the behavior of the interviewees, and lead to responses that do not correspond to with their actual thoughts. To reduce the risk of this behavior, the interviewees were informed that the everything they shared in the interviewees would be confidential and anonymous, when presented for the case company and in the report.

3.6.2   Validity

Validity is important for creating a credibility to the results that are accurate and reasonable (LeCompte, 2000). According to Baškarada (2015) constructing validity for case study research can be challenging due to the operationalization of attributes which can be measured by the empirical observations.

The number of interviews conducted, with the distribution of stakeholders from the top management of the organization to the front-line employees, provided the data of the study with a higher internal validity. The selection decreased the change of being bias when selecting the interviewees, due to mix of stakeholders needed to address the purpose and research questions. There were several other steps enhanced the internal validity. First, the procedure of conducting a pilot study of the interview questions ensured that the interviewees would understand of the questions from the interviewees. Second, all interviewees were sent both an informative presentation describing the project and the authors of the thesis projects, and the interview questions in advance to enable them to prepare answers or ask potential questions in regards of the questions or study. Third, when the interviewees were approached and asked to participate in the study, all interviewees were asked if they agreed on being recorded, that the recording would only be listened to by the researchers, that the recordings would be deleted after the and thesis projects ending, and that everything they shared would be anonymized. Forth, the agreements of the recordings enabled for transcribing the data, and an automatic transcribing that could be controlled and corrected from reviewing the recordings.

External validity focuses on how a study can be generalized by, for example, various organization or various settings (Yin, 2009). The external validity was increased by the number of interviews, the hierarchical spread of the interviewees, the nationalities of the interviewees, and the literature reviewed. The delimitations of the thesis project had a negative effect on the external validity since it forces the authors to adopt the study, and nationalities depending on the response and interest of participating in the study. Another, both negative and positive effect, was that the supervisor from the case company approached the participants first. This enabled to get a greater number of participants, although the participants had some sort of connection to the supervisor. To increase the validity several interviewees were asked if they knew or could recommend additional stakeholders that they believed would be interested to participate. The recommendations enabled an broader spread of stakeholders from the company with stakeholders that were not connected to the supervisor. Further, the timeframe of the thesis study limited the number of interviewees, and the number of interviews with internal stakeholders sharing the same hierarchical position in the case company and country.

The quality of the data is another criterion for validity (Baškarada, 2015), and one to construct validity and quality of the data is through triangulation. Flick (2004, p. 178) defines triangulation of data as a method which refers to drawing *"data from different sources and at different times, in*

different places or from different people". Meaning that the researchers have provided information from multiple and various sources as a procedure to increase the validity (Creswell & Miller, 2000). The triangulation method was applied to this study as interviews was completed with different people at different times and the interviews was performed digitally and individual, and literature reviewing. By using triangulation, both external validity and reliability could be increased for the thesis study.

3.6.3   Credibility of study

Creswell and Miller (2000) imply that the trustworthiness of the qualitative approach, and the authenticity can enhance the validity, and they also describe that it creates, for example, credibility and a greater understanding from the construction and actions of the research. Credibility of the study involve external individuals to review the study and can help the authors to establish a better validity and that addressing towards the appropriate reader for the study (Creswell & Miller, 2000). For this study, four peer reviews and/or debriefings were planned to get a critical perspective of the thesis study from two student opponents and supervisor. The examiner of the thesis would be attending three of the four peer debriefings. To add more credibility for the study Creswell and Miller (2000) propose a peer review or debriefing provides the authors with written and oral feedback, and support by, asking questions, challenges assumptions, and pushes the researchers by reviewing the data and research process. During the peer debriefings and reviews, the authors were provided with oral and written feedback, both positive and critical to enable to improve the thesis and the credibility of the thesis study.

3.6.4   Source criticism

When applying literature in a study it is important to select reliable literature and source criticism is applied for judging whether literature is reliable or not. There is a diverse variety of sources and different sources are more or less appropriate depending on the purpose of the study (Karolinska Institutet, 2021). Karolinska Institutet (2021) describes multiple questions that could be helpful to consider when selecting sources:

- *Is the information consisted with the purpose of the study?*
- *What is the purpose of the information? Is the purpose to inform, persuade or market something?*
- *Who is behind the information?*
- *When was the information published?*
- *Have information been peer review before publishing?*

The information applied in this study has mainly been collected from scientific articles, books, and conference publications. The sources were initially considered based on their relevance to the purpose of the study. If the sources were considered relevant, a further investigation of the source's reliability was performed. Sources with the purpose of persuading or market something was avoided for this study and sources with the purpose of informing was mainly used.

To examine the reliability of who was behind the information, searches was conducted on whether the information was peer reviewed. Peer review is a process where scientific publications are reviewed by experts within the area of interest before articles are accepted for publishing (Karolinska Institutet, 2021). Ulrichsweb which was accessed through the database of Linköping university library and was used for this study to investigate whether relevant journals were peer-reviewed or not. If the journals were peer reviewed, the information was considered reliable. A

majority of the journals used for this study were peer-reviewed and to increase reliability mostly well-cited articles was selected.

As the method of backwards snowballing was applied when searching for literature, there were some older articles used which were selected due very high number of citations. The aim was to use both older and newer to increase the variation of sources and create a reliable basis for the study. Karolinska Institutet (2021) points out that using information that is around 5-10 years old are common boundaries, but it could vary depending on how much available previous research there was. For this study the previous research varied regarding publication year which resulted in the selection of sources to vary in age.

3.7   Ethics

Ethical issues are important to consider when conducting research (Bell & Bryman, 2007). The interviewee must stay sharp and understand the possible pitfalls when conducting research interviews (Bell & Bryman, 2007; Kvale, 2012). Bell and Bryman (2007, p. 71) identify eleven ethical principles for social research ethics and those five principles assumed relevant for this master thesis are presented below:

- *Informed consent*
- *Privacy*
- *Confidentiality*
- *Anonymity*
- *Honesty and transparency*

Some of the ethical principles included work both before, during, and after the study for the researcher since personal information might have been shared. To prepare and create an interest from the potential interviewee, the interviewer can share information regarding voluntarily, confidentiality, etc. (Kvale, 2012). Further, Kvale (2012) describe that a briefing of the interview is important to consent the voluntary participation of the interviewee and how the information from the interviewee would be published. For the interviews of this thesis, the interviewees received information before the interview of the confidentiality regarding publishing the information, and who would have access to the information. The interviewees were informed that only the interviewees would have access to the data collected from the interviews, and that all recordings and extra material would be deleted after the project had ended. This information to the participants aimed to help them understand and be informed about the confidentiality, privacy, anonymity, and to enable them to be honest and transparent in their participation without being harmed.

According to Kvale (2012) private data that could identify the interviewee should not be published, including the wider social perspective. The macro-ethical perspective based on the interviews of the case company force the report to be written in a general perspective without outing details that could connect the interviews to a person or the interviews to a specific company. The collected data was only stored on safe and agreed platforms to minimize the risk of information falling into wrong hands.

4 Empirical findings

This chapter present the findings of the collected data of the master thesis. The data was collected through interviews and the participants will not be specified, instead all participants will be referred to as "interviewee". The chapter will begin by introducing the conceptual model, followed by presenting the three categories of the conceptual model in the following order: organizational factors, perceived quality of digital innovations and individual adoption. These categories in turn consist of eight themes: organizational structure, organizational strategic position, organizational adopter environment, organizational commitment towards digitalization, promotional activities, quality attributes, digital innovation as a value creating mechanism, and personal characteristics, and lastly, a typification.

4.1   Conceptual model

The conceptual model presents the empirical findings from the collected data of the interviews and themes from the coding. The conceptual model aims to answer the two research questions *"RQ1: What are the essential and supportive factors a global organization must consider when adopting digital innovations?" and "RQ2: How do internal stakeholders across a global organization perceive quality of digital innovations?"* through an intra-organizational perspective. The coding of the collected data resulted in eight themes, which are represented as the boxes in Figure 3. The "adoption of digital innovation" is not included in the eight themes. The eight themes are presented in three overall areas of organizational factors, perceived quality of digital innovations, and individual adoption which are further explained during this chapter. Further, the conceptual model aims to describe how these factors influence the adoption of digital innovations by presenting what the participants expressed related to each theme in the interviews. To ensure the confidentiality and anonymity of the case company and the interviewees, several names, organizational terms, etc. that could be connect to the case company has been replaced with the letter "X". The conceptual model consists of five themes to the left: organizational structure, organizational strategic position, organizational adopter characteristics, organizational commitment towards digitalization, and promotional activities. Organizational factors consist of five themes which represent the basis of the conceptual model. These five themes relate to the organization and how they perform their work. The five themes of organizational factors influence each other and in turn how the internal stakeholders perceive quality.

Further, the next two themes relate to the perceived quality of digital innovations and are centered around the characteristics of the innovation itself. Perceived quality of digital innovations is divided into two themes of quality attributes and digital innovations as a value creating mechanism. These two themes are also connected to each other since the quality attributes of a digital innovation influence how digital innovations are perceived as a value creating mechanism.

Individual adoption represents the influence on adoption of digital innovations on an individual level. The individual adoption is influenced by the theme of personal characteristics of the internal stakeholder and this theme is assumed to be affected by the two themes of perceived quality of digital innovations. Lastly, individual adoption is assumed directly affect the "adoption of digital innovation". How these themes influence each other will be discussed further in Chapter 5.
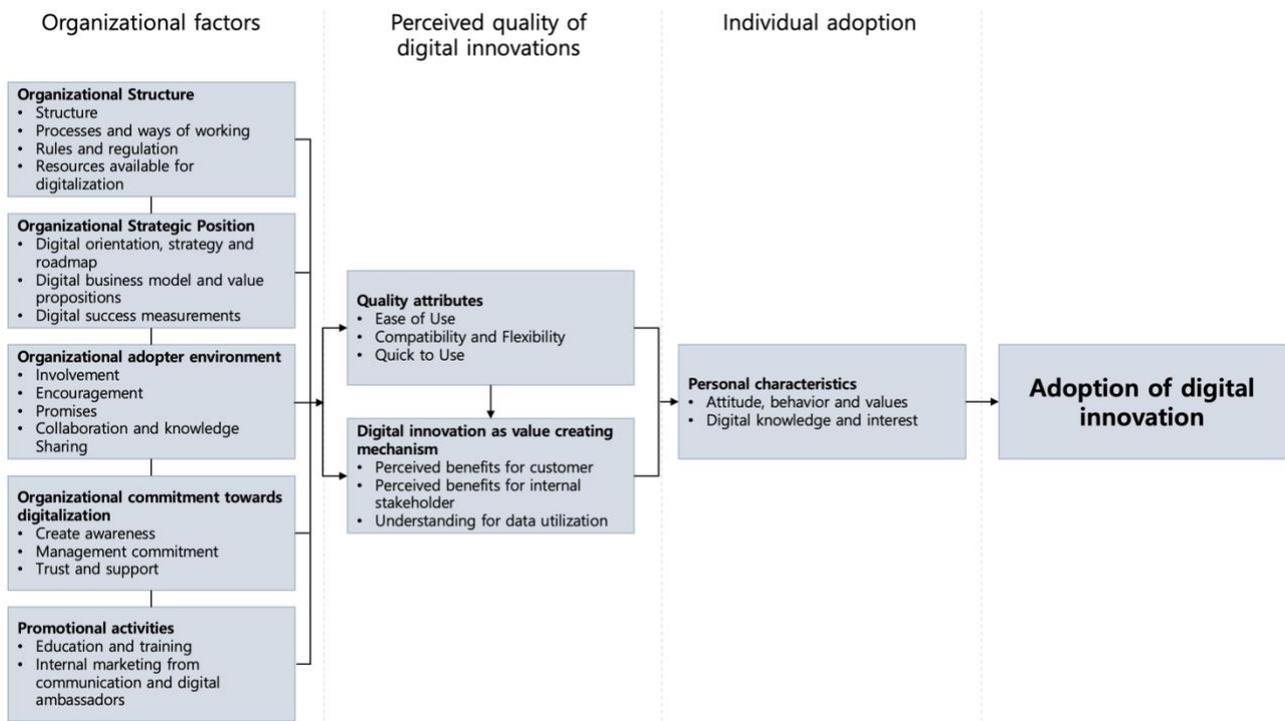
Figure 3: Conceptual model formed by the themes and first order categories from the coding of the collected data.

4.2 Organizational factors

The organizational factors of the conceptual model include the five themes of organizational structure, organizational strategic position, organizational adopter environment, organizational commitment towards digitalization, and promotional activities.

4.2.1 Organizational structure

This section aims to present empirical data which the participants said to explain the influence from the organizational structure on the adoption of innovation. This theme includes, as presented in Figure 3, four subcategories: the structure, process and ways of working, rules and regulations and resources available for digitalization. These subcategories were created based on the identified codes when analyzing the collected data.

Structure

The structure of the organization was found to be one factor influencing the transformation towards digitalization. The interviewees described the case company to have a decentralized structure with company divisions responsible for different product areas. The purpose of the decentralized structure was explained to be to make the internal stakeholders of the organization focus on their specific expertise, to reduce the hierarchical steps, and to encourage decisions to be taken further down in the organization. The overall structure of the organization was expressed as positive regarding the areas of focus but also problematic with that a few units do not fit into the division of placement. Multiple interviewees described a frustration regarding the decision making of the company and how the structure formed silos.

> *"I think sometimes where we can struggle, …*
> *…is in communicating a little more broadly. There's a little bit more of the siloed approach still."*
> *– Interviewee 3*

Interviewee 3 thought the more siloed approached should be reduced and enable better communication between the units and divisions. Other interviewees also expressed that the silos deteriorate the collaboration, information sharing, and united approach towards the same overall company goals. For example, interviewee 13 described how the lack of information and collaboration across the divisions resulted in overlaps of work. The internal stakeholders within one silo were described to be focusing on their success, reaching their own goals and lack an overall view of how their work affect the rest of the organization.

> *"…but yes, we do overlap, and we also do overlap when it comes to cross company divisional."*
> – *Interviewee 13*

> *"Because from top to bottom, clear definition of success tends to be just in that silo."*
> – *Interviewee 1*

Even if the case company implied that the structure of the company enhances a decision making closer to the customer, the perception of how it works differs depending on hierarchical position, country working in, and division. Multiple interviewees expressed that they were not able to make the decisions they preferred, that they were not able to implement digital initiatives they thought were appropriate for their customers since some decisions and potential implementations were rejected from central parts of the organization.

> *"More empowerment and decision making closer to the customer. It's too far away right now both internal and external, it is just too far away which makes it slow, it makes it bureaucratic, makes it cumbersome, or more empowerment and decision making closer to the customer. Which works pretty good for other companies."*
> – *Interviewee 1*

Processes and ways of working
Most of the interviewees expressed both positive and negative statements of how the organizational processes and ways of working influenced the organization and the pace of a changing environment of the case company. The interviewees described that the internal processes and methods of working are not transforming to fit the need of a more digital approach of the case company.

> *"…like I mean it's a very old school organization…"*
> – *Interviewee 7*

> *"…we're try trying to use traditional methods and we don't focus enough on the people that need to go out and execute that…"*
> – *Interviewee 2*

> *"…from the historical side and having people with great amounts of experience doing things means that it's a lot of, hey, we've always done it this way it works this way."*
> – *Interviewee 3*

The statements from interviewee 7 and interviewee 2 describe how the ways of working were not changing even if organizational goals did. Other interviewees, for example interviewee 3, also discussed how the organization had a tradition of working in certain ways and some internal stakeholder could not understand how the change in ways of working could benefit them. Some interviewees expressed that it was difficult to stay ahead of the competition when the internal adaption and processes regarding digitalization and technology were slow.

"How slow we are with technology and digitalization, that's my biggest frustration, easily, it's my only frustration. This company is so slow in adoption digital solutions, we are slow in adopting digital solutions that are customer facing and we are slow in adoption digital solutions internally."
– *Interviewee 1*

"Digitalization is so incredibly wide, and it is important to have high speed sometimes, so we work as if prepared and then, so we pick up the leftovers afterwards when we get a little overlap and so on so to speak, instead we pretty much focused on having a high-speed progress."
– *Interviewee 17*

The thoughts of the scope of digitalization, technology and process of execution varied between the interviewees. Interviewee 1 expressed a slow progress and would like to have a higher speed of the adoption of digital innovations both externally and internally in the case company. In contrast, the statement of interviewee 17 presents the organizational difficulties of what to include in the expression of digitalization but that the organization focus on high speed which sometimes make the work of the company divisions overlap. Other interviewees described a more common overlap in activities occurred, for example, interviewee 13 described two separate projects were performed with the same focus but without collaborating with each other.

"…so, we are doing parallel activities to acquire the information about the equipment performance and breakdowns we don't do it together we do it as two separate projects, with the same focus, and oftentimes, 90% the same information that we tried to figure out."
– *Interviewee 13*

Further, multiple interviewees described a frustration of the internal processes, regarding the number of stakeholders involved, the pace and approach towards problem solving. The processes tend to be long and slow within the organization. Statements from the interviews explained how multiple people, units and divisions get involved in the internal processes. For example, interviewee 13 explained the process of looping back and forth without becoming completely satisfied with the decisions.

"I don't know, it's too many people that I need it needs to go through, these people need to give the OK, and then the other people who think it's OK, and then it's wine that is coming back and forth, back and forth, back and forth and while doing this now and then this loop says like that, that's my opinion."
– *Interviewee 11*

Many interviewees described problems with what they called firefighting, meaning that they were working reactive instead of proactive with problems and issues occurring. Interviewee 4 explained that the case company was very good on problem solving but that there was a lack of understanding for the actual problem causing the problems they solve.

"X is great at solving the problems but to do it with workarounds, it doesn't really deal with what is the basic problem but to come up with a solution that we can now work around it."
– *Interviewee 4*

Rules and regulation
The thoughts of the rules and regulations, of who were allowed to implement digital innovations, and how should be done were not shared between the stakeholders of the case company. Several interviewees expressed that they were not allowed to implement their own digital innovations, and if they considered themselves to have the need for a digital innovation it had to be developed and approved by other company divisions. For example, interviewee 1 explained that was tiering to

always get a no when they feel a need for a digital innovation that could either benefit their customer or the internal stakeholders.

> *"Right so I think we have employees that would know how to do that not all of them but I think there's enough that we can do some really cool stuff, alright but they're hesitant to do that because we have this culture of being too slow, too complicated, you know they're there is, so you know what I what I hear from other employees is I hear two things: the answer for IT is always no, the answer from X is always no, and if I have a good idea I'm not gonna send it to X because that's where good ideas go to die."*
> – *Interviewee 1*

In contrast, interviewee 6 proposed that the divisions could develop and provide themselves with the digital innovation that they need in their specific business but the importance of working together with others who have more expertise in the area.

> *"…if another division wants to make a digital product, then they can do it, they can do it, and then it's like this that everyone should of course make the products they need in their business, and no one will stop anyone from doing this. Maybe you should be a bit smart when you make digital products and talk to the others who make digital products so that you do something together so maybe it can be effective in their development, and every now and then it is so in my team that we work since we have very much expertise in this area."*
> – *Interviewee 6*

The understanding of the requirements of security for digital innovation was well understood from the interviewees. Although, some interviewees expressed a lack understanding for why the digital security disables them from having essential digital innovations that may improve their everyday work. Interviewee 17 instead described the issues with cyber security, and the risks and requirements of being able to fit a digital innovation within the internal systems.

> *"Yes, I can, you can do that in some cases, so it's like having a big one, the challenge is that it needs to be connected in a secure way so that we do not have to deal with this with cyber security, is such a thing that is very high on the agenda all the time… so that they can do things but it must be sure so that then there are a lot of framework that must, or it must or conditions that must be met in order to be able to put it in our system, during we get as well as the risk that you do something and then you do not know what is behind it so that, often it is quite a lot as a type of security that lies with that and limit. It may not always be fully appreciated out on the market if you want to be fast and agile and then suddenly someone gets bored so far, but you have meet X number of cyber security requirements… "*
> – *Interviewee 17*

Multiple interviewees described how they are forced to break the rules and requirements to develop their own digital innovations that they believe are necessary without the knowledge of the rest of the organization. The rules and requirements are discussed as obstacles for the organization to develop forward in the digital area.

Resources available for digitalization
Overall, the interviewees all thought the competence and the available resources connected to digital innovations could be improved. Some interviewees described that their units did not have enough resources in terms of employees to maintain the digital innovations, even if they could be very interested in using and selling the digital innovations. For example, this was described by interviewee 7 to be problematic and to limit digital transformation. Further, interviewee 10 described a similar problem of not getting the appropriate resources to follow up the business and develop their business towards the customers.

> *"…and it's very interesting to see, you know how the good idea just you know have limited resources to be rolled out."*
> – *Interviewee 7*

"I'm a bit frustrated now around, should you say digitalization, and support and tools we get from our division, our X, and I think it has to do with how processes may not play with business needs. It is often too tough I think and sometimes you can feel that you are not getting what you need to get to be able to more business as well and that is of course frustrating."
– *Interviewee 10*

From another point of view, interviewee 17 described how the organization would like the digital innovations to be developed centrally due to lack of resources in some company divisions and units, but also to have standardized products to reduce the number of products and siloed approach. This was implied to help the divisions and unit with their work.

"Yes, as we work, we often want to have developed centrally and then so that there are very few development resources in many areas out in the markets and there are some expectations…
…but in most cases, we develop centrally and then we try to push a standardized product on the market."
– *Interviewee 17*

4.2.2 Organizational strategic position

In this section of empirical findings, it is presented what the interviewees said to further explain how the strategic position in relation to digitalization is represented in the case company. This theme is divided into three subcategories of digital orientation, strategy and roadmap, digital business model and value propositions, and digital success measurements.

Digital orientation, strategy, and roadmap
Throughout the gathering of empirical data regarding the digital orientation of case company and their strategy, it became clear that the view on digital strategy among the employees was not shared. However, the consensus was that the digital orientation of the strategy of the case company influenced the adoption of digital innovations. From one perspective, there were a few employees who said that the digital strategy did exist and that it was clearly presented.

"I think the strategy is clear and the path forward as far as what we're trying to accomplish with technology and digitalization."
– *Interviewee 3*

Further, some employees pointed out that the strategy was there, but the case company was not living it properly, but some described the contradictory of the existence of a strategy.

"The easy answer is no, there is no digital strategy."
– *Interviewee 6*

Many of the participants also stated that they are missing a unified strategy for the company's digital transformation journey, and many said that the strategy at this moment was very scattered. Interviewee 1 and interviewee 15 strengthen by stating that the digital strategy was not unified and confusing.

"The strategy is really disconnected. Every company division has their own digital strategy and it get confusing in how you get this to the market."
– *Interviewee 1*

"All the company divisions are cooking their own soups they might have their own strategies and I know that they have different strategies, but we don't have the united company towards digitalization."
– *Interviewee 15*

This implied that the case company's current digital strategy was deficient. Interviewee 5 explained that a scattered strategy can become problematic and as an example interviewee 5 said that they case company recently acquired two companies who basically does the same thing. Interviewee 5 continued and explained that without a strategy it was hard to know which company to use to serve the customer better. Interviewee 6 further explained that the divisions are meant to develop their own digital strategies but also admitted that they have not been tied together, however, interviewee 6 also questioned if it's even possible or necessary to tie these strategies together. Interviewee 6 continued to explain that the company may instead need a vision which will explain where case company was going with digitalization which in turn could be communicated to the employees and motivate them to be committed to the transformation journey.

Throughout the interviews, several of the participants described the digital strategy as two separate strategies. The external strategy was described as the strategy focused on the customers and the internal digital strategy focused on the digital transformation internally. Several employees described the external digital strategy as rather clear, but the internal digital strategy was in fact described as absent in the case company.

> *"It is as important that we do this change internally as well, because otherwise, we will make workarounds to present benefits or value for the customer, but it won't help if we don't create the efficiency or productivity internally."*
> – *Interviewee 4*

Another aspect which was mentioned by several employees were the absence of a roadmap towards reaching the goals for digitalization in the case company. Interviewee 16 described that there was a strategy but that the tactics could be improved, which was further elaborated by interviewee 5 who explained that it could be confusing without a clear roadmap.

> *"I would say yes strategy we have, but we are not good in tactics yet."*
> – *Interviewee 16*

> *"We can get overwhelmed I think without a clear roadmap from us a company, it can be pretty ugly, and it can be confusing."*
> – *Interviewee 5*

Digital business model and value propositions
Several interviewees explained that one of the obstacles against adoption of digital innovations in their opinion was the difficulty in justifying the business case, both internally and externally. Selling their original products was not the same as selling these digital innovations.

> *"We struggled with turning that positive reception by the market into a business case, what I mean by this is when X as a digital product was launched, it was agreed upon to offer the product for first two years for free and then after that it will be a paid subscription, with that being said, we never were able to justify the business case to make it to a paid subscription."*
> – *Interviewee 3*

One interviewee explained the reasons for the difficulties in developing a business model could be the misunderstanding of how to use data and understand how the data could create benefits for both the customers and internal stakeholders.

> *"The data needs to be holistic inside the organization for us to become better."*
> – *Interviewee 2*

"The organization as a whole are going to think how they are going to market that product in regard to what's a cost implication."
– *Interviewee 8*

Several interviewees implied that the organization was lacking experience and knowledge for how to create value propositions for the digital innovations aimed for the end customer. Some of the interviewees explained that products were simply handled to them, and various salespeople in the organization could set their own offering for several products. Others explained that the different markets, depending on countries and industries, required the salespeople to have the ability to develop offerings from their customer requirements. These interviewees also described that they might know how to create an offering that would generate good revenue for the company with the products they have always been focusing on selling, but that they did not have the knowledge to create offerings for digital products.

"We've got to connect with yeah, that digital product to the digital offering."
– *Interviewee 2*

Interviewee 2 stated that the organization must work with the connection of digital innovations and offerings. Several of the interviewees described how customers were not being charged for the digital products, cause the internal stakeholder were not able to present a proposition good enough for the customer to value. For example, interviewee 6 explained a situation when the salespeople were not able to sell a digital product but gives it away for free to be able to say that their customer was using it.

" So, you ask how are you, there are some could yo-yo, we have a lot of customers who have this now, well, and then yes, but what did you get out of it, as well as how does the customer pay for this? We could not charge for it, no, it was like it was a good thing but we next time we will charge, then there was like no value for it did not solve a need and therefore they could not charge for, but they send with it anyway because they want to be a good seller who shows that the product came to the customer."
– *Interviewee 6*

Further, some interviewees described a wish for better guidelines of how to develop value propositions for digital innovations. For example, interviewee 17 described the lack of knowledge for the business model of digital innovations to be one factor influencing the work.

"I think it's quite, I think it's several pieces, I think it's the one internally, that we do not have and the knowledge of what about the business models fully themselves so that they think it is a piece, then it's about us working business to business"
– *Interviewee 17*

Digital success measurements
According to the interviewees, the amount of data collected from the customer are very valuable for the company. Several interviewees explained that their focus was the customers. Although, interviewee 5 explained that the organization focus too much on revenues, KPIs and ROI instead of use and understanding of how the available data will help them create better offerings.

"Maybe there's more value in the data and actually collecting this data and getting our customers to sign up and give that data to us because we can do other things so the data space that's something III probably beat my head against the wall a bit with is trying to help our internal folks understand that that data from our customer actually could add value to other areas of our business outside of just charging them for a for a small fee to sign up for it."
– *Interviewee 5*

The organizational structure was described to contribute to a focus of the goals in the own company division or unit of the internal stakeholder. A lot of focus lied within measuring revenue. Interviewee 1 and interviewee 7 both implied that the individual stakeholders focus was limited to its division and unit, due to set up KPIs.

> *"KPIs, let's say one of the divisions has one KPI, and second one has another one, and then they're not matching each other so that's why sometimes collaboration is gone."*
> – *Interviewee 7*

> *"Nope that's your problem these are my KPIs, and so that's, that's how it plays out in real life, and it is real decisions get made what's better for my division first, not what's better for X."*
> – *Interviewee 1*

Further, several interviewees described that they are measured in the same way as they were with solid products as digital products. Interviewee 2 stated that the sale methods were not being changed to align with the new digital products. Further, the interviewee described the need of changing the mindset of both the salespeople as the management.

> *"…it's a completely different sales methods to value based sales versus so I think we don't we try to use too many traditional methods…"*
> – *Interviewee 2*

4.2.3 Organizational adopter environment

This theme aims to present the empirical data related to the influence of the adopter environment towards digital innovation adoption. The organizational adopter environment refers four subcategories: involvement, encouragement, promises, and collaboration and knowledge sharing from the organization to its internal stakeholders.

Involvement

The feeling of involvement was a topic mentioned by interviewees and especially towards the change of adding digital innovations in the company. For example, interviewee 12 explained that internal stakeholders should be involved earlier in the processes and not just at the end for launching. Several interviewees implied that there was a greater need of involvement with digital innovations for both the developers to understand the needs and conditions, but also for the other internal stakeholders to understand the potential benefits of the digital innovations.

> *"Yes, no, but just the information gathering from the beginning that you involve people before the project starts and maybe not just launch the idea that is not, yes it can be proven but that you actually get the organization in what you want to do, and so refer back to that stuff when you launch it all. I think that is the most important thing that people feel involved in the process as a whole."*
> – *Interviewee 12*

A larger majority of the interviewees were positive to change, although several of them also expressed that change should not be made without a reason, others explained that change was inevitable, and others that change help develop forward. For most of the interviewees, the understanding of change was very important and described that there is a need to be able to express themselves. The overall group of interviewees were very happy with their closest team, how they were involved and could express themselves but that there were more complicated on a larger scale of the organization. Interviewee 12 described that the organization should work on listening to the internal stakeholders and involve them in the change to understand what the needs are.

"But I think it's always fun to be involved in this who gets to express their opinions, but what I said there is what is the most important thing in change, so that it is that you actually listen to people what the need is. If you have not done so, it feels like if you have gone wrong at one. Yes so, I think many have a lot to say I think."
– *Interviewee 12*

Encouragement

Several of the interviewees expressed a positive feeling towards the encouragement from their closest team and from their managers in trying new things and ideas. These interviewees did not speak about the encouragement from the rest of the organization or that any encouragement was actioned. Interviewee 9 described a feeling of always being listened to.

"Yes, yes, we are as a company, this company is actually in, so just encourage encouraging us to do that. If you have something new, something feels free feel open to talk to your manager or actually product manager or anybody who can actually listen to you and see if it is valuable to do that or to make the change or not."
– *Interviewee 9*

Compared to the statement of interviewee 9, other interviewees described a lack of support from the organization when trying to take on new assignments within the technology area. For example, interviewee 16 described how internal stakeholder who had an interest of carry on the development and to encourage others to do the same, did not get the appropriate support from the organization that they need. The internal stakeholders who should drive the development were not always there to help, sometimes because they are not with the company anymore and sometimes due to the push back of initiatives.

"But when you could see huge frustration of the person, who wants to do the things, and he is believing in this technology when he doesn't get support from the group, because three people who are dedicated to this development they disappeared, and then one person comes he has no clue what to do, so I'm talking now about reality, so vision, strategy, and why tactics about this how it's reality."
– *Interviewee 16*

The encouragement for renewal and questioning of ways of working had according to several interviewees not been changed. For example, interviewee 3, explained that people are set in their own ways of working and are not willing to ask for a change because there has been a no before. Other interviewees described how the internal stakeholders are very proud of their products, solutions, or other creations, and did not encourage others to help. Further, there were interviewees who described that the ones who are the experts, wants to develop their own solution and are not encouraging the workers closer to products out on the markets to help or discuss possible improvements.

"…two again these guys have great levels of experience, which aren't a bad thing in of itself but there's sometimes the it they were told no, we can't do something this way ten years ago, so they don't ask again but things have changed in 10 years, whether it's a change in management, a change in our actual product we offer, a change in what we're willing to do, things like that. I think just because you were told no once, or figured out a way to do it once, that that doesn't mean it's necessarily the best way now."
– *Interviewee 3*

Promises

Previous digital innovations and initiatives were described as both successful and failures. Depending on the interviewee the view of specific initiatives differed. Although, the issues with not receiving what had been promised to have turned otherwise interviewees positive attitude to the digital transformation to express concerns. Interviewee 5 described the difficulties for the salespeople to confront their customers when the systems are functioning the way they were promised from the developers and how they must look bad in front of the customers.

"…we really struggled with the whole X system folks will tell you that it didn't do what it was supposed to do from the beginning they feel like there was promises made that the product was going to be more or better than what it was and they got let down and they stuck their necks out on the line telling customers how this is gonna be great right you guys are gonna love this they want a little out premature and then they end up looking they look dumb in front of their customers they look bad and so that puts a really bad taste in any of our sales people's mouth when they look bad in front of the account that they're representing…
…so many improvements made to this, but folks will still remember that when it was launched right it didn't meet the expectations that they thought it was going to meet, so therefore it's band for life I guess…"
– *Interviewee 5*

Interviewee 5 also pointed out that even though many improvements are made to the digital innovation, internal stakeholders still remembered that when the digital innovation was launched it did not meet the expectations and therefore some digital innovations are banned for life within the case company. Although, the external exposure to the customers was not the only promises that the interviewees expressed to be broken from. The digital innovations that are publicly launched within the case company have later been drawn back. Interviewee 2 explained how the management can express something in public to drive the publicity of the digital innovations, but the internal stakeholder who were interested were not allowed to execute since the digital innovation are not ready for a launch yet.

"I think what drives me a bit crazy is leadership might say something publicly and when we go to execute that internally I get that you know we just had to say that we just had to say that in that drives me nuts from a moral and ethical."
– *Interviewee 2*

Collaboration and knowledge sharing
In general, many of the interviewees expressed that they thought the collaboration within their company division was good, however, the cross-collaboration globally between the company divisions could be improved.

"I feel like we have come quite far, but I miss, I do not see this collaboration between company divisions in the same way, we're saying, we are one company, but we're not really living after it, it feels like it's a lot of it's mine attitude, and we are not pushing for the bigger picture and working together."
– *Interviewee 10*

Culture was mentioned by a few interviewees as a factor for why global collaboration was presumed sometimes to be difficult.

"I would say it's pretty challenging since we have a lot of cultures here."
– *Interviewee 7*

It was also pointed out that the case company possess employees with great technical knowledge and experience and that the case company have employees who wants to collaborate. However, it was also implied that some employees are not collaborators.

"I think the collaboration comes in, there's a really good technical staff who supports me if I get into an area where we're unsure of something of we can deliver, there's always help, and people are always willing to help."
– *Interviewee 5*

"I am frustrated with colleagues inside of our organization who are not really trying to be collaborative, they have their own KPIs and that is what they want to invest time in majority of there is not about findings solutions, it is rather more about blaming somebody for not fulfilling their targets."
– *Interviewee 15*

The opinions regarding collaboration were not unified and shared among the employees. Interviewee 15 expressed that collaboration was important, and to make collaboration more effective and successful the case company should have more recurring collaborative activities, rather than limiting the collaborating to specific project. Further, several interviewees expressed that the knowledge sharing within the organization could and should be improved. The level of collaboration was expressed to be one of the reasons for not enough knowledge sharing across company divisions, units, and teams, both globally and locally. Interviewee 5 expressed issues with a global sharing and knowledge sharing between the company divisions and units. Further interviewee 5 emphasized the connection between appropriate collaboration across the organization to be one part of the solution.

> *"Global sharing is something I feel kind of lacks in the customer centers."*
> – *Interviewee 5*

> *"Good collaboration one area where we think that collaboration could probably improve is between the units globally so our application center so the problems that my customers come up with are not unique to a customer in South Africa or a customer in Australia there is a lot of similarities we sometimes come up with unique solutions within the local company."*
> – *Interviewee 5*

Some of the interviewees instead explained that the problems with knowledge sharing could be improved by recruiting internal stakeholders with the needed skills for developing the organization in the digital and technology area. For example, interviewee 17 expressed a need on new business units but also dedicated salespeople and support. Many of the other interviewees agreed with interviewee 17 on the need of dedicated support and development of skills, but not that the solution for that would be to focus on recruiting new salespeople and internal stakeholder with skills. Many of the interviewees expressed that the organization had many great and competent salespeople, but that they had not received the appropriate education to grow their competence within the digital area.

> *"Yes, in part you have to build new skills and succeed in recruiting new skills and that is probably what we do, so to speak, we build new business units in such large markets to have, as well as very dedicated salespeople, we need dedicated support."*
> – *Interviewee 17*

Interviewee 5 described a wish for better global forums for internal stakeholders to share information, ask questions, meet up on a regular basis to learn from each other. Other interviewees did stand on both side of the statements, a few thought that there were appropriate forums to share knowledge and others described that they missed these forums. Similar, some of the interviewees implied that there are good forums for some products, but that these forums were not good enough for this new development of digital innovation.

> *"Global, it would be nice to see like some global forums, for our folks that get involved with like the data analytics and our product specialists, specifically around digitalization, to get together you don't want an annual basis and actually share what they're doing"*
> – *Interviewee 5*

4.2.4 Organizational commitment towards digitalization

This chapter presents empirical data which aims to further explain the importance of organizational commitment towards digitalization. The theme of organizational commitment towards

digitalization is divided into three subcategories, management commitment, trust and support, and create awareness.

Management commitment
The interviewees impressions of the management commitment towards digitalization and the digital transformation were divided. A few of the interviewees questioned, in a similar way, as interviewee 16, how well the signals from the organization reach all internal stakeholders to understand that there will be a focus on digitalization.

> *"… but the question is how it is really communicated, how really the case company gives them clear signal to the organization, as that's the way what we want to go, this is that we focus we focus on digitalization."*
> – *Interviewee 16*

> *"We are putting a lot of you know fancy words I'm saying but so far, I don't feel that there is a huge step to this direction…*
> *… and I think that that's the point that the management has put the target that guys like we need to go digital as soon as possible otherwise we're outdated we're out of the business."*
> – *Interviewee 7*

The statements from interviewee 7 condemned the use of fancy words, and the showing off by saying all things that has been done with trendy buzzwords. Other interviewees expressed the same feelings of the organization are talking more about digital innovations rather than executing. Several interviewees stressed that the transformation and use of digital innovations was too slow. At the same time, there are opposite views of the commitment from managers. A few interviewees described that everyone at the top of the organization is on-board this journey. Some interviewees described that some things were finally starting to change, more money was being invested and there are more internal stakeholders speaking about of the digital transformation of the case company. For example, interviewee 5 pointed out the importance of the signals that came from the CEO of the case company when speaking about the importance of digitalization for the organization, and how the organization was willing to invest money into it.

> *"… so you'll see us getting serious about it but there's a lot of things that we know, we feel short on it's not just the product like that we're not that X it just says another it's always the products fault and if you guys would just make a good product we we'd be fine, there's a lot of things internally right that that play into that so I don't feel like it's been taken serious up until like a past year when they said hey wow like the CEO is talking about this this is important X investing the most money in digitalization."*
> – *Interviewee 5*

Trust and support
Overall, the interviewees described a good local support from their teams and manager, but at the same time several interviewees also described the lack of trust and support to try digital innovations. Most of the interviewees described that would be appreciated if the organization let internal stakeholders, teams, units, and even company divisions try new things, fail, and develop a new improved product or solution. For example, interviewee 2 described the importance of trusting the internal stakeholders to do their jobs. To let the internal stakeholders, try things and fail. Further, interviewee 7 described how the case company must change their view of digital products and stop comparing the business they have always done with these digital innovations.

> *"I think I think when something is brand new it's good to let it kind of just freeform that's where good ideas come from let people try things and fail, trying fail, trying fail, so I think it's good but from your perspective then if you."*
> – *Interviewee 2*

"We learn from that try to adapt it and make it happen this is I mean the beauty of digital products you're not creating the, a piece of equipment that is, let's say you could, it's very complicated to adjust you know."
– *Interviewee 7*

Interviewee 1 stated the same things as interviewee 2 and interviewee 7 but explained that the actual problem was the lack of trust from the organization. This was followed by multiple statements of investments for digital innovations that these were being reduced during a time where the revenue requirements increased. There was a frustration expressed from several interviewees, regarding the support from the organization. An example of that was described by interviewee 15 of how there are managers in the organization who only focus on their own personal success and not the success of the organizations. The focus was described to limit the trust and support for the internal stakeholders, since some managers then were not very eager to let their employees try new things.

"If you boil down in a lot of this technology stuff, I think there is a fundamental lack of trust that happens. I don't know if people realize it, but I think that there is a fundamental lack of trust."
– *Interviewee 1*

"Managers who do not really support you, who are just working for their own success, for their own KPIs, and they also do not really fight for the goals of our company, they basically fight for their own, I don't know variable compensation or whatever, so no matter what it costs even if it's worse for the bigger picture from they just do whatever they think is important for them as an individual."
– *Interviewee 15*

Several interviewees described how the lack of trust and support from the organization, make internal stakeholder feel forced to break the rules and start projects even if the organization did not support them. These interviewees described the lack of trust and support for both internal and external projects and describe that they did not think the management understood what competence and conditions their teams or units had. For example, interviewee 16 explained that they ignored the organization if the thought the idea was good but did not get the trust or support from the organization to continue.

"… we just doing, so we ended, and we are informing how we want to go so of course it has some risk, but if we believe that this is something what is good for the organization and also if we cooperate with the right customer…"
– *Interviewee 16*

Create awareness
One aspect which was mentioned by several interviewees was the importance of creating awareness of digital innovations and increase the conversation about digitalization among the internal stakeholders in the case company.

"There's a lot of hesitancy internally to talk about this because it's no new, like our sales staff, they sell equipment, a lot of them have been selling equipment for decades…and you're like hey go sell this software".
– *Interviewee 5*

The same interviewee explained that it was very important to normalize conversations and get folks comfortable talking about digital innovations and get them confident in themselves talking about the products. As an example, interviewee 5 also pointed out digital innovations could be developed but, in the end, employees did not even know about them anyway, which was also rooted in lack of awareness for digital innovations in the case company.

"We have to put a lot of time into getting people within the case company to speak the same language, to put the same things within this topic, so we can have an intelligent conversation because otherwise you'll get lost, and we talk past each other quite a lot."
– *Interviewee 6*

4.2.5   Promotional activities

This chapter aims to explain the theme of promotional activities and present what the participant said during the interviews related to the topic. This theme is divided into two subcategories education and training and internal marketing from communication and digital ambassadors.

Education and training

Basically, all the interviewees implied that the education and training within the digital space was an area for improvements. Several of the interviewees expressed that they, their teams, or their division were in the need for better education and training. Especially for the salespeople, education and training both regarding the understanding of the digital innovations, the value of it, to be able to ask questions and in many cases try the innovations before they are launched. What interviewee 3 expressed of appropriate training for the products and technical aspects but lacking training of how to understand the value of a digital innovation and feeling confident to sell it to various customers was expressed from several interviewees. Further, interviewee 11 wish to have the professional expert with deep knowledge to help the salespeople.

"So, I think that the technical aspect of product trainings that are quite high, how we can utilize it to provide value and sell to the customer there's a level of improvement that I think we could, we could focus on internally."
– *Interviewee 3*

"Do it correctly step by step I would say. Sometimes it's here you need to sell them and with the first sell maybe someone more professional in-depth knowledge on it should accompany the salesman and should be helping out with the with it yes."
– *Interviewee 11*

Both interviewee 11 and interviewee 13, discussed of how the training of the salespeople must be improved since the competition were better at selling the products and the internal stakeholders did not understand how to present the value of a digital innovation for a customer. Both interviewees also described how they wished for help from others, and others being the internal stakeholders in the company, with competence for digital products.

"Maybe internally, and to the customers, and to outside world, because it sometimes they don't have the better product, but they sell it better."
– *Interviewee 11*

"It's always needed to be a little bit a help little bit of let's say presenting present to pick up the new pitch, it's not the same if you're selling something which you can actually feel, as something which actually yes you're selling digital, which nobody can touch it, it's for them it's always hard to do it's like some prescription that somebody selling you and say."
– *Interviewee 9*

Interviewees from various positions of the organization acknowledged the same issue, but how the education and training should be performed varied. Very few of the interviewees working relatively close to the customer appreciated seminars or webinars including many internal stakeholders at the same sessions. Several interviewees described the need of an internal stakeholder who they trusted and who understood them should perform the training. The interviewees described that they would like the ability to ask questions, although according to interviewee 2 and interviewee 14, this was

something they were missing or did not feel comfortable with. The internal stakeholder did not feel comfortable in the training in larger groups, and that the level of learning is not as good.

"If you get people in a room and get their hands on it and when you're growing their confidence in the system you're going incompetence talking to them about how it works why it works that way and just spending time with them you know one on a lot of class of 10 people at the most it's not a lot but you do that three or four times a year you've got it pretty healthy global based versus I think people try to go after these big cookie cutter let's get everybody on a web program for 30 minutes and then we just train 200 people you know whole world why are people selling this I trained them you know like well it's obvious you got to spend time with them one on one teach"
– *Interviewee 2*

"For me personally I like more of the let's get to let's get a trainer in and get into a branch and have a couple different training groups on a new product or something like that where you can physically go through it and ask questions or stop or whatever else instead of it and it's just me we have the big webinars on there and we go through something like that if you've got it's hard in front of a whole group of people to stop everything and back up and say you know where's the letter P on a typewriter you know what I mean so I think it's easier in small groups where you have more interaction and can feed off some of the other people that are asking questions in a room versus having a big webinar I learned better like that I'm can't speak for everybody."
– *Interviewee 14*

Interviewee 2 also stated that the internal stakeholders of the organization was not the issue of the digital transformation journey, instead the interviewee described that it was the processes and how you learn people to sell that is the issue. The statement was similar to other interviewees who described that there are many competent employees in the organization, but they are not provided with the appropriate conditions to grow their skills.

"It's a process issue, not a people issue, I think we've got really intelligent people with the right attitude, and the right attitude to learn new, you just got to teach them how to sell this stuff 'cause it's different"
– *Interviewee 2*

Internal marketing from communication and digital ambassadors
All interviewees spoke about importance of communication, but not everyone had an opinion of how the communication should be within the organization. Interviewee 9 implied that it was important to communicate to get a wider spread around the internal stakeholders. That the communication must be good enough for the internal stakeholders to understand the benefits of the digital innovation and importance of doing something.

"It's we need to also to spread it around our people and how to say like and convince them, but to provide them more information to see why we are doing this and why it is important."
– *Interviewee 9*

Several interviewees express a lack of marketing when on digital innovations, there was no one pushing from inside the organization. According to interviewee 8, it could be difficult to understand if something was good or not when the digital innovations were not pushed out to the organization to use and try it.

"I don't think it's, I don't I've not seen you know advertisements or Flyers or anything like that on it which sometimes you know you want to see, or you like to you know 'cause that makes you think well if X could push in it must be good or they want you to use it use it."
– *Interviewee 8*

Another aspect emphasized from several interviewees were which internal stakeholders who presented the digital innovations and tried to market them. Interviewee 5 expressed the need for

older internal stakeholders to have a younger colleague, who might understand the data and digital innovations, to market and educate the stakeholders. Further, interviewee 6 implied the importance of having dedicated people, ambassadors, or champions, that can communicate with the rest of their company divisions, units, and teams. During the interviews, other interviewees expressed the same wish for more ambassadors or champions.

> *"So we try to do a bit of like instead of our data analyst presenting these tools to our sales staff like let's let that guy present and kind of talk to his people, right it's 'cause they know him he's been with X for like 30 something years, and not to stereotype but if he can sit there and tell other people that using a digital tool is made his life easier, that's different for our sales team than that a 20 or 30 year old data analysts saying look at this cool thing I made you guys should use it."*
> – *Interviewee 5*

There were mixed feelings regarding what interviewee 6 implied of that there must be a message to communicate before you communicate. Some other interviewees agreed, but other express that they want to be involved in the process, they would like to learn and be informed of what might be coming and could show their interest in the digital innovations. The statement of interviewee 10 described an opinion shared with other interviewees of preparing the internal stakeholders with communication in advance. According to the interviewees this could help to increase the acceptance and understanding, if the teams had time to prepare, educate, and find ambassadors to focus on the digital innovation or application.

> *"You can run trainings, you can run seminars, you can be like ambassadors, you build like champions around who in turn can repeat this with this, so it's about communication but before you communicate, you must have a message to communicate like that we will continue to work on that."*
> – *Interviewee 6*

> *"So to speak, if I now got this golden application, I would not throw it out tomorrow, but if I got this for myself today, I would think a lot about how I need pre-communication, how I need to embed for that, how I need to get involved and somewhere it is there, I will probably fins an ambassador or two who is not me, who comes on the assignment, I think so that it will not be top down but that it will be with you and acceptance and from there as well."*
> – *Interviewee 10*

The digital ambassadors were described by several interviewees to be there as a support, to start digital projects and initiatives for the teams, and to become the link between the developer and organization for the digital initiatives. Interviewee 7 described how his team were motivating its members to pick up projects and drive them if they were interested. Several of the interviewees implied that similar ways of working would benefit the organization and the spread of new digital initiatives.

> *"We should make some kind of you know project based activities that they if someone is really driven by the digital way of thinking you know, he can pick it up as a project and run it through throughout the year, on top of his daily routines you know, and then let's say let's say he can become an ambassador of this new product or like the way of thinking to others you know so that's what we are we're discussing."*
> – *Interviewee 7*

Some interviewees implied that there is a broader desire now for the support from digital ambassadors compared to what the organization has faced with actual manufactured products. That the lack of knowledge within the organization of how to create enough value for the customers, and at the same time reach the financial targets could be filled with motivating the internal stakeholders to get involved. Although, even if interviewee 10 described itself as one of the

ambassadors, the interviewee also explained how it has rejected initiatives due to the lack of support.

> *"You need ambassadors like me, as I have seen how this can create value for us financially but also for the customer as well as for faster support, but I have also been the one who said no, because we have not had the conditions."*
> – *Interviewee 10*

The statements of interviewee 7 and interviewee 3 continued a similar path. These statements focused on the need for a better central support, to have people and teams that focused on the digital transformation, and that the support could enable for better collaboration and actual change every part of the organization to focus on the digital future.

> *"Digitalization is not a defensive word it something you should really act on you know so you should really like builder organization around this digital thinking very shortly like this you know for me it should be like a digital ambassador in each team who is really driving the change, actually go from bottom to the top."*
> – *Interviewee 7*

> *"That kind of goes back to having a local team focused on technology and digitalization, if there's, if they're the ones offering that support and then we can collaborate locally."*
> – *Interviewee 3*

4.3 Perceived quality of digital innovation

This theme of perceived quality of digital innovation divided into digital innovation attributes and digital innovation as a value creating mechanism. This subchapter will present what the participants said to further explain which digital innovation attributes was found important and how digital innovations create value for internal stakeholders and customers.

4.3.1 Quality attributes
Digital innovation attribute is divided into three parts, ease of use, compatibility, and flexibility, and quick to use.

Ease of use
In general, one of the important attributes for digital innovation was the ease of use. Most of the interviewees pointed out ease of use as a basic attribute which a digital innovation must possess for them to consider using the innovation. In some cases, the interviewees referred to ease of use for the customer, however, in most cases the interviewees focused on the ease of use for themselves.

> *"I think it definitely must be user-friendly."*
> – *Interviewee 14*

> *"Ease of use is of course number one."*
> – *Interviewee 9*

If the digital innovation was too complex or difficult to use, several interviewees described that as a reason for why they would choose not to use a digital innovation.

> *"The reason they failed is oftentimes…*
> *… either due to its complexity or to some incredible logic of steps that you need to take to complete the process."*
> – *Interviewee 13*

Compatibility and flexibility
Compatibility and flexibility were mentioned as important attributes by several of the interviewees. Throughout the interviews, the interviewees expressed different aspects they considered important regarding compatibility and flexibility. One aspect which was pointed out was that the digital innovation should be flexible and able to adjust to each individual customer and their specific needs.

> *"Solution X is a great example of that you can tailor a product to each individual customer and as long as you can do something like that then I think it encourages more people to use it, that's for sure."*
> – *Interviewee 8*

Another aspect which relatively many interviewees mentioned was the need for digital innovations to be compatible and able to interact with existing solutions that the case company uses. Also, the digital innovations need to be flexible and able to use within different systems, as interviewee 11 expresses.

> *"It should be user friendly and the way it could interact with other platforms or software's."*
> – *Interviewee 11*

> *"I would like that platform to be available within iOS and within Android"*
> – *Interviewee 11*

Interviewee 13 expressed when talking about previously failed digital innovations that one reason for why digital innovations was because the previous system was better than the new introduced system, and the same interviewee also expressed that the flexibility of the digital innovations was very important. Another opinion which was mentioned by a few interviewees was the language barriers, which refers to the digital innovation being inflexible when only developed in one language.

> *"I would say that is a little more prolonged for us here because of the language."*
> – *Interviewee 9*

Finally, the aspect of connecting multiple innovation to one was pointed out by several interviewees which refers to compatibility between the different innovations.

> *"I would like to have everything central and interconnected. I would like to have one platform…*
> *…I would like everything in the same platform."*
> – *Interviewee 11*

Quick to use
Throughout the interviewees, some interviewees expressed the need for the digital innovations to be quick to use.

> *"I think the big thing is making sure it's easy to use. So that's what you wanted in the day and you know and you want something that you can you look at you know for example you download an app shall we say right logging in is easy you know you don't have to have a password that's you know 8000 characters and must have ! and four digits in the upper and lower case and all this sort of stuff you know it is silly things like that sometimes discourage people from using technology or apps and so that that sort of thing."*
> – *Interviewee 8*

Another perspective which was mentioned by interviewee 7 was the slow process of starting to use a digital innovation.

"I mean the people with the same attitude like early adopters they really pick it up very quickly oh wow so cool so they just request access and then you know in our company we need to get to the product owner or product manager of the product to get the access, so it's becoming more really complicated you know to start it up, yeah so it's some kind of it's like a separate agenda you need to spend like with the with your customer yourself like maybe one month to create value, so maybe in this case maybe solutions X is not easy to use you know.
    –   *Interviewee 7*

4.3.2   Digital innovation as a value creating mechanism

Digital innovation as a value creating mechanism is divided into three parts, perceived benefits for customers, perceived benefits for internal stakeholders, and understanding for data utilization.

Perceived benefits for customer
Most of the interviewees have stressed the importance of customer focus. Some of the interviewees expressed that all focus should be on the customers benefits of the solution. Customer benefits were described in various ways depending on the relationship to customers and position in organization. Interviewee 2 statement of quicker information for the customer would enable the customer to make better decisions, was similar to the thoughts of interviewee 5 who raises the benefits of the customer through bringing them value and at the same time get their own internal value.

"I think quicker information you know better information to allow them to make better decisions. "
    –   *Interviewee 2*

"Customers can get some insight into how to make their operation again more productive, more cost effective, or potentially safer, but that's value for them, our sales team can get value out of this right."
    –   *Interviewee 5*

Interviewee 3 discussed similarly to interviewee 5 regarding how the customer can get value from any sort of product, but that the development come from the internal stakeholders understanding of what value was for their customer.

"I think what we need to focus, and we talk about value is what value does it bring the customer? So can this a product, whether it's, whether it's a machine-based product or a digital product, using X as an example, can X improve their efficiency uh reduce their cost, um improve safety things like that are what I would consider and what we have heard customers consider valuable."
    –   *Interviewee 3*

Interviewee 3 also stressed the fact that their customer could have difficulties in understanding the benefits of digital innovation.

"I think the next step is to not discredit what the customer in the market is saying, but saying, but I mean we have historical data that shows well maybe they don't they don't realize what they're missing out on."
    –   *Interviewee 3*

Perceived benefits for internal stakeholder
According to several interviewees one very important part of wanting to accept a digital innovation were that the internal stakeholders perceived their own benefits from the digital innovation. That the benefits not only were limited to focus on the customer. Many interviewees expressed that they would not accept selling digital innovations to the customer if they did not receive better or necessary internal digital tools to perform their jobs. Interviewee 10 questioned why they should continue to internally bill manually when their customers are requesting more digital products. Other interviewees, for example interviewee 11, believed that by involving the internal

stakeholders, the number of stakeholders understanding the benefits, pros, and cons would increase. Which was also described as necessary to bring pending internal stakeholders on board.

> *"For my point of view my opinion yes, because I do like it, I do like to be involved with that I'm not good I do like showing people what would be the benefits of it and what would be the pros and cons I would say and to be able to show to people and act internally how we could this benefit."*
> – *Interviewee 11*

Others described that they did not understand why they should sell a digital innovation to the customer, since the incentive models were not customized for that. Some interviewees acknowledged that their success could put them back from selling. In contrast, interviewee 17 instead acknowledge the need of new incentive models but described that the extra bonus to potentially get now was focused on top management.

> *"… but that for goals, it is quite simple, but then to get attention on the next piece as well as what we also work with, as well as new incentive models, as well as that so that we have like here extra bonus for example if you sell our new digital products during the year and in a number of markets that only actually as an extra incentive for our thus management[1] or companies to actually focus on it."*
> – *Interviewee 17*

Interviewee 15 also pointed out that when developing digital innovations that were aimed for the customers to use, the focus was almost only on solving the customer need and creating benefits for them. Interviewee 15 described lack of focus on the internal stakeholders benefits as an obstacle for digital innovation adoption.

> *"We don't really care about solving our customer centers problem and as long as we just focus on the customer needs and not on the department needs, I think that is an obstacle where they are not 100% happy vid X"*
> – *Interviewee 15*

Understanding for data utilization
The consensus between the participants was that the fundamental lack of understanding for data utilization within the case company was one of the obstacles towards adopting digital innovations.

> *"I think one of the frustrating things for me is our lack of understanding on the value of the data that we can collect internally…*
> *… Maybe there is more value in the data and actually collecting this data and getting our customers to sign up and give that data to us...*
> *…I probably beat my head against the wall a bit with this trying to help our internal folks understand that data from customer actually could add value to other areas of our business outside just charging them for a small fee."*
> – *Interviewee 5*

Many internal stakeholders know that data was good but only a few people could take that data and do something of it and create value. Interviewee 7 described the frustration of making the data available for the customers to create value for them and convincing them to buy.

> *"Some more experienced people in our organization come with some more years in the company, they don't really see the advantage because, sorry, maybe they see the advantage, but they don't feel comfortable enough to talk about the advantage with the customer."*
> – *Interviewee 15*

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[1] The word "management" has been changed from the real names to minimize the risk of being too revealing

4.4 Individual adoption

This subchapter will present what the interviewees said to further explain the individual's impact on the adoption of innovations and how different behaviors were categorized into groups. This theme includes personal characteristics which is divided into personal attitude, behavior, values and digital knowledge and interest.

4.4.1 Personal characteristics
Personal characteristics is divided into personal attitude, behavior and values, and digital knowledge and interest.

Personal attitude, behaviors, and values
Throughout gathering the empirical data, interviewees presented different perspectives and opinions on relevant topics which reflect on their different personal characteristics. Interviewee 16 described the difficulty in managing different people.

> *"Just simple, all of us, we like to laugh, we like to cry, we have many different things, that's I think is the biggest challenge. How to really be sensitive to things which are happening with the people, the individuals, in aspect of running a big organization."*
> – *Interviewee 16*

In general, the interviewees presented different motivations/attitudes/values. Interviewee 9 described motivation as customer related and stated motivation as customer happiness and interviewee 5 agreed. Interviewee 8 instead described motivation from a personal perspective. Motivation was for interviewee 7 related to personal development. According to interviewee 3, motivation relates to the bigger picture, the level of opportunity that the case company are leaving on the table and the possible to develop the business. Interviewee 14 presented more self-centered motivation.

> *"When we see the customers being successful with our products, that's extremely motivating."*
> – *Interviewee 5*

> *"My children because I want to you know, I need, well I need to support them in their daily lives."*
> – *Interviewee 8*

> *"I like changing the status quo, so you know it's not like every day since there's some new challenge and you can learn from that, so I think that's very motivating you know."*
> – *Interviewee 7*

> *"So, one thing that motivates me is money."*
> – *Interviewee 14*

The interviewees attitude towards change was discussed in all interviews. Most of the interviewees would describe that they were positive, although a few were more cautious. Both interviewee 3 and interviewee 5 were more cautious regarding change and explained that change just for change could be detrimental, and they also pointed out the importance of discussing why the change is happening.

> *"I don't want to change for the sake of change, but I think well thought out, well intended and well research changes are good and let's keep challenging ourselves to get better."*
> – *Interviewee 5*

"I like change as long as it's positive and for a good reason, if it's just change to change, I don't got no time for it."
– *Interviewee 3*

A few interviewees described change as inevitable. It was also pointed out by interviewee 7 that change should be in line with global developments in the working region. Also, the way change is implemented is important.

"Changes are inevitable, is change always good, don't know."
– *Interviewee 8*

"I'm personally quite open to change, I have actually reflected a bit on this during the last couple of weeks and it's actually also depending on how the process is run troughed."
– *Interviewee 12*

Value in general was described differently between the interviewees. Interviewee 1 defined value from a general perspective while several interviewees described value from a financial perspective, which interviewee 7 and interviewee 8 pointed out. Interviewee 3 related value to customer benefits. Interviewee 12 agreed partly and expressed that value was about using data to find ways to save time, work more efficient and to make the right decisions.

"To solve the problem as easily as possible. That's value."
– *Interviewee 1*

"Value mean, I think's it's just you know stable for months with the maximum profit and less cost and make it sustainable in some of the countries where it's really needed."
– *Interviewee 7*

"The value for most comes to how much it's gonna cost them."
– *Interviewee 8*

"I really think value especially when we're talking technology and digitalization needs to be no the value for the customer."
– *Interviewee 3*

The interviewees presented different opinions regarding preference in ways of working. Interviewee 9 expressed a positive attitude towards discussing a problem while interviewee 4 argues that some problems are discussed too much within the case company.

"Always better to discuss and to see what some other people can say. That's why discussion is always good to solve something, it gives some different perspective that maybe you cannot think of."
– *Interviewee 9*

"There are many discussions that maybe are taken a little unnecessarily, in my opinion."
– *Interviewee 9*

When a problem occurs, interviewee 8 preferred to take ownership and not put the blame to someone else.

"If there's a problem that I've created I'll take ownership of it and sort it out because I feel that's the best way to be rather than shall we say sweeping that under the carpet or trying to show say blame to someone else it wasn't my fault it was his or hers or the system etc."
– *Interviewee 8*

Interviewee 11 pointed out that it was preferable to have clear objectives early in the process.

> *"I want to have my objectives to run and to have the goals and objectives as early as possible and try to sort them out quickly and correctly of course."*
> – *Interviewee 11*

Digital knowledge and interest

During the interviews there were a great variety of presented knowledge in digital innovations. There were several interviewees who described themselves as tech savvy, having good technical and digital skills, and early adopters of new technology. For example, interviewee 7 and interviewee 8 both described themselves to be at the front line of adopting new technologies and digital innovations.

> *"I'm quite an early adopter so that's why I'm seeing how the other industries are adapting to that."*
> – *Interviewee 7*

> *"Would like to say I'm quite tech savvy, 'cause I if I at end of the day I'm a gamer geek still"*
> – *Interviewee 8*

In contrast, there were interviewees who instead described themselves not to be very tech-savvy or to be very good with technologies and digital innovations at all. Interviewee 14 and interviewee 12 described themselves not to be very good with digital innovations and technology, but of different levels and perspectives.

> *"Uhm I'm not tech savvy, I would say no, you know what I mean I have a hard time on my phone and on my computer "*
> – *Interviewee 14*

> *"No, I would probably say that I'm technically disabled as well. No, no but I am definitely not technical. Yes, I know computers then if I generalize it very much, but I am, I do not come from technology at all"*
> – *Interviewee 12*

Several of the interviewees expressed that it was important to start focusing on the internal stakeholder who had an interest in digital innovations. Interviewee 16 explained that it was important for the organization to begin the journey by focusing on the internal stakeholder with a genuine interest since they would start a more natural journey.

> *"About how we could pull the people and understand that this is a bit different direction now, that we cannot rely on the standard products, and also you need to find the right people. Not everyone, that that will not work. So, to really look at individuals who have they only interest in the new technology, in new solutions, because it becomes more natural and faster."*
> – *Interviewee 16*

During the interviews, several interviewees also described to have a genuine interest of digital innovations and that they had hopes of the organization moving faster forward in the digital area and to present a greater focus on the individuals who would like to engage the challenges. Interviewee 1 described an interest of the innovations and digital solutions. Even interviewee 8 described a knowledge and interest in digital innovations but wished there would be better support and help from the organization to proceed with the journey.

> *"I'm a huge fan of digital solutions, let's just say that. I wish we were doing more faster and more innovatively…*
> *…I don't go for that, it's more where are the opportunities and so I like innovation, I like looking at new ideas, I like challenging the status quo."*
> – *Interviewee 1*

"… but I would say I have the technical knowledge by self-study and self-interest to be able to reach when we go into too much depth then I said, 'Hey now I need help'. I can understand but to go in more in depth I need help because it's not my brand of knowledge."
– *Interviewee 8*

The knowledge and interest in new digital technologies and digital innovations were from some interviewees explained to vary in the organization due to benefits and understanding. For example, interviewee 15 described those internal stakeholders who had a long history in the case company and in the industry would not understand or feel comfortable enough to present innovations to their customers. This was an issue described from several other interviewees as well, but other interviewees, for example interviewee 16 explained that success stories from the organization would help to get more internal stakeholders involved and engaged in the journey when understanding the value, it could contribute with for the customers.

"The majority of my generation sees that there is a benefit for the customer because I show it to them, they understand it, they feel comfortable enough to show it to the customer, so when we talk about some more experienced people in our organization come with some more years in the company, they don't really see the advantage because, sorry, maybe they see the advantage but they don't feel comfortable enough to talk about the advantage with the customer."
– *Interviewee 15*

"It's very important because you pull the people to the initiatives, you pull people to be eager, to know about that, and if you test successfully in Sweden, or in Europe, or any other countries, and they say, look we proved this is really good feedback from customer, it's really good value for us, and we understand why we want to go now, we are ready to roll out that, you, we will get quite fast engagement to this."
– *Interviewee 16*

There were also statements from the interviewees of the importance of developing a greater interest internally to stay competitive on the market, to grow the business and to become an essential player for the customers to turn to. Interviewee 3 pointed out the changes of the market and the importance of staying ahead or following the on-going trends.

"… as far as digitalization in general I think it is something it's really essential to be a player in that to grow."
– *Interviewee 3*

Interviewee 9 follow the same impression and explained that more and more customers begun to understand the importance of the digital innovations, the offerings they provide and how they could benefit from them. At the same time, interviewee 5 implied challenges with some customers who were still not understanding the value of the digital products but describe to be confident in presenting a case were the customer will be able to understand the benefits from it.

"… think that with this digitalization, we are giving offering, some extra, and customers are more and more seeing the benefit of it."
– *Interviewee 9*

"I think I can create $100 in value for X from actually having your machine connected so I'm not really gonna worry about that."
– *Interviewee 5*

Further, interviewee 8 described the importance from both an internal and external perspective of the need to try digital innovations. The interviewee described the issues with internal stakeholders and customers not understanding the digital innovations but by giving people the chance to try, play and learn the interest and knowledge would grow.

"It's easy, I suppose it probably without sounding too cooky it helps that you know, you know a little bit and you, you're willing to learn and play, so again you know like any app, whether it be an X one or just generally, sometimes any way to learn is to have a play."
– *Interviewee 8*

4.4.2 Behavioral types

This section describes the essential and supportive behavioral factors a global organization must consider when adopting digital innovations. The emerging pattern in the data resulted in four adoption behaviors. Table 4 further elaborate on how the interviewees presented personal differences regarding different topics in the interviews. This study raises the importance that firms must approach these types of behaviors differently to successfully adopt digital innovations.

Table 4: Four different behavioral types developed based on the empirical findings.

Types / Factors	The supportive	The doers	The disrupters	The disconnected
Goals and roadmap	Strategy and goals are important	Overall strategy should exist, the details are not important	Detailed and well-planned strategy and roadmap both on higher and lower levels	Enough with strategy on lower levels, do not think it is possible to develop an overall strategy
Self-centered	No, focus more on others	Yes, put their own needs first	No, focus on solving customer needs before their own	Equal focus on themselves as on others
Approach towards new things	Want to understand innovations in-and-out before using and promoting	Positive but more focus on benefits for oneself, like to understand "What's in it for me?"	Very positive towards trying new things and doesn't need all answers before trying	Very bureaucratic and rely on processes when trying new things
Express confidence	No	Yes	Yes	No
Structure	Very structured	Less structured	Structured but promote learn by doing, not planning	Structured
Acting	Passive	Active	Rulebreakers	Bureaucratic
Attitude towards change	Positive, should be well motivated change	Positive, change is mandatory and inevitable	Positive, want things to change in the company	Positive, however, tend to see obstacles which may result in not implementing change
Risk-concerned	Medium	Medium, want to see digital innovation working first	Low, rather you try and learn from your mistakes	High, focus on how the digital innovation will generate profit
Customer-centric	High	High	Very high	Medium

5 Discussion

The purpose of this chapter is to discuss the findings of the developed conceptual model including the typification of behavioral factors for this master thesis. The conceptual model will be discussed from a theoretical and empirical viewpoint to identify how this conceptual model differs from previous research. The discussion chapter is divided in six subchapters. First a summary of the key findings will be presented. Then the themes of the conceptual model will be discussed in the following order: organizational factors, perceived quality of digital innovation, and individual adoption. Then the implications for theory and practice will be discussed and lastly, a discussion of the methodology will be presented.

5.1   Summary of discussion

The conceptual model developed for this study presents adoption of innovations in a digital context which have been rather unexplored. This study put forward a new holistic model relevant for digital innovations which include factors that are connected to adoption of digital innovations. This study also describes factors that been found to influence the adoption of digital innovations which have not been enlightened in previous research. This study proposes that the formal structure of an organization does not directly support or inhibit the adoption of digital innovations, it is rather a question how the organization structures their processes, collaboration, resources, and competence to fit their organizational structure and to facilitate digital adoption and transformation. However, the complexity of the case company was found to inhibit the development of improving those areas. This study proposes rules and regulations as factors inhibiting the adoption process due to that the development processes are slow, and this creates difficulties when implementing digital innovations. One final aspect of organizational structure which was proven to be important in this study was assigning proper resources to the digital innovations, not only to develop and implement but also to maintain the digital innovations. The result of this study implies that the digital strategic position of an organization is very important to make the internal stakeholders be committed to adopting digital innovations. A digital strategy was presented as important, and it was clearly presented in this study that the strategy cannot be limited to the customers as the internal stakeholders want their needs fulfilled as well. The result of this study also presents the pre-understanding as important which refers to that the organization need to understand that digital innovations are not the same as solid products and developing and selling digital innovations will affect the business model, value propositions and success measurements. Further, the adopter environment is pointed out in this study as an influencing organizational factor towards adoption of digital innovations. The result of this study proved a few soft aspects of organizational culture as very important for enabling commitment to digital innovations. This study proposes that the internal stakeholders need to feel involved in the change process and in the development of digital innovations to stay committed. It was found that the previous break of promises has influenced the mindset of internal stakeholders negatively which have resulted in negative attitude towards digital innovations and therefore, keeping promises and delivering to meet the expectations of the internal stakeholders is an important part of the adopter environment when adoption digital innovations. Commitment and support from not only top management, but from all managers in different levels of the organization was found in this study to influence the adoption of digital innovation since the managers have an important role when creating necessary awareness, trust, and support to motivate and influence the internal stakeholders. This study enlightens a deeper understanding of how to perform training when promoting digital innovations and it is also proposed to use digital ambassadors to influence internal stakeholders to adopt digital innovations. This study proposes that perceived digital innovations attributes are important for the

adoption of digital innovations, especially to keep the digital innovations simple, and make it flexible, and quick and easy to use. However, the result clearly presented that the quality attributes need to be beneficial for the internal stakeholders even though the digital innovations are aimed for the end-customer, otherwise there is a risk that the internal stakeholders choose not to adopt the digital innovation. The result of this study implies the importance of understanding value as benefits for the internal stakeholders and to understand how to interpret and utilize the data that the digital innovations create. Lastly, this study proposes personal characteristics as a major influence on the adoption of digital innovation since it was presented clearly in this study that their interviewees attitude and interest in digital innovations affected their willingness to adopt digital innovations.

5.2   Organizational factors

The discussion of the organizational factors is presented following the themes of the conceptual model. First the organizational structure will be discussed, followed by organizational strategic position, organizational adopter environment, organizational commitment towards digitalization, and lastly, promotional activities.

Previous research point out external environmental influences as one factor influencing the adoption of innovation (Molinillo & Japutra, 2017; Frambach & Schillewaert, 2002; Damanpour & Schneider, 2006), however, the result of this study did not imply external environmental influences as a factor affecting the adoption of digital innovations which could be the result due to several reasons. For one, the study focus on the adoption of digital innovations from an intra-organizational perspective and the external perspectives was not in the scope for this study. This affected the questions and focus of the interviews. A few interviewees mentioned that it is important that the case company evolve as the society is becoming more digital, however, it was not pointed out that the case company need to become more digital due to competitive pressure. It was also expressed by a few interviewees that the case company have a strong position on the market which could be another reason for why the case company did not feel the competitive pressure. If the study would have had another case company, the result may have been different.

5.2.1   Organizational structure

In this study the results of the area of organizational structure presented another focus of various factors. The actual structure of the organization was found to be influencing the organization towards adoption and perceiving quality, but a focus of the processes and the ways of working in the organization. It was clear that the structure does influence the processes and ways of working, although many of the internal stakeholders in the case company have worked several years in the organization and some several years within the business area. Many of the internal stakeholder are experts in their area and have never been forced to change and adopt to a new organizational environment, or the overall processes of the organization which was influenced by the organizational rules and regulations. The result presented that it was important that change had to be prepared and planned before implementing to ensure that the appropriate resources are in place, and that the internal stakeholders are prepared and informed of why the change is happening, how it will influence their daily work and involvement. The decentralization of the case company was argued to be supposed to reduce the distance from the top to bottom of the organization, which did not reflect the reality. Although, it led to a siloed focus, lack of collaboration contributing to duplication of work in different silos, bureaucratic and complicated processes, and probably an increased distance from top to bottom of the organization. It was very surprising to understand how much the opinions of how things worked were so split for different parts of the

organization, that even top management did not agree on the current issues and improvements that had to be made in the organization.

Frambach and Schillewaert (2002) conclude that the structure of an organization can either support or obstruct adoption of innovation within an organization. The research of this master thesis presented a similar result to Frambach and Schillewaert (2002) in regards of the organizational structure influencing the innovation of adoption within an organization. Pichlak (2015) and Cooper (1998) describe that the organizational structure also impacts change and innovation within an organization. This research identified adoption of innovation to be connected to the change and innovation within an organization, and that the change and innovation could be supported or obstructed and then influence the adoption of innovation. The argument of Zaltman, et al. (1973) that centralized organizations are better at creating perquisites for implementation of innovation but reduces the likeliness of adoption decision initiatives, are not able to be compared to this research since the case company organization has a decentralized structure. Although, the research presented difficulties due to the decentralized structure with aligning decisions, initiating similar innovations in various parts of the organizations, and that the perquisites were not aligned with the digital innovations.

Further, Damanpour and Schneider (2006) propose that the complexity of an organization have a positive influence on the initiation process of innovation but not the decision to adopt and implement innovations. The authors also propose that complex organizational structures can access information and knowledge easier to identify opportunities but have a greater risk of conflicts from values that could lead to resistance in accepting innovations. This thesis study did not prove a positive influence from the complexity of the structure, even if the decentralized structure of the case company suggested to enable internal stakeholder to develop initiatives of their own there were often obstacles and declines of approval. The opinions regarding the organizational structure did also vary between the internal stakeholders on different organizational levels. Internal stakeholders further up in the case company though the decentralized structure worked very good and internal stakeholders further down though the decision was taken to far away from the customers. The results from this thesis study also indicated that the variety of values in a complex structure could lead to resistance of accepting innovations since different internal stakeholders have different needs regarding digital innovations.

The influence of the organizational size on adoption of innovation discussed by Damanpour and Schneider (2006) and Frambach and Schillewaert (2002) of more flexibility in smaller organizations compared to larger ones, and that larger organizational have more resources, knowledge, and competent employees. The arguments of the researchers of larger organizations being more beneficial for the adoption of innovations were not found in this study. Even if there were shown to be great resources, knowledge, and competence within the organization there were also identified to be a large knowledge gap regarding digital innovations. The previous literature has enlightened the possibilities that a larger organization might have but it was not proven to help the case company of this study with their digital innovations. This thesis study instead presented difficulties of being a complex organization and how it could inhibit their development of improved processes to be successful and to use their resources, knowledge, and competence in an area of expertise which was presented to be new and innovative. Although, this thesis study did not indicate that the size of the organization influence, but rather the complexity of the organizational structure. The result of this research could therefore not be aligned with the research Frambach and Schillewaert (2002) present of that the size of the organization was influence, however, this study implied the influence from other variables like culture, strategy, and organizational structure.

Trenerry, et al. (2021) imply that organizational processes need to evolve, teamwork need to be enhanced and cross-functional teamwork need to be enhanced to improve communication and integration of digital innovations. This study also identified that during change due to digital innovations, improved processes, ways or working, and better collaboration and cross-functional teamwork are important to develop the appropriate conditions for adopting digital innovations. Further, Vial (2019) proposes that there is a great need for structural changes to break up work in silos for improved collaboration, creation of cross-functional teams, and that obstacles for digital innovation are rather influenced by the changes of the internal stakeholders work assignments than top management not understanding the potential. The discussions of Vial (2019) are similar to the results of this thesis study. This study demonstrated a great influence on the adoption of digital innovations from that the case company's focus of working in silos, focus on their own team rather than the entire organization inhibited the collaboration across the divisions of the organizations, the collaboration when developing similar innovations, and the internal stakeholders being forced to change the way they worked without understanding why.

The potential obstacles from rules and regulations within organizations is a subject which is not widely discussed in previous literature. There are some authors, like Weill and Woerner (2015), who discuss the influence of organizational politics, silos, global operations, and company legacy to influence the adoption of new digital business models better which they describe to be better for smaller and younger companies rather than larger and older companies. This could potentially be an effect of larger and older organization having more complex structures and stuck in old ways of working. Although, that rules and regulations slow down the development process and that the rules and regulations somewhat become an obstacle for the ability for personal innovation and digital innovations are not presented from the previous literature and is proven to be a result in this study. This study also presented that there are internal stakeholders who would break the rules for their personal interest and their teams' interests. The lack of support of were found to be the largest impact for the internal stakeholders to break the rules. This would divide the organization further and make it more difficult for other internal stakeholders around to understand who to listen to, the trust for rules and regulations to work, and why the rules and regulations exist.

One aspect which has not been enlighten by previous research is the influence of resources and how it can enable a successful adoption. The findings of this study proposes that it is important to assign proper resources to not only develop and implement the digital innovation, but also to maintain the digital innovation which was pointed out by the interviewees as important for them to be interested in using and selling the digital innovation.

5.2.2 Organizational strategic position

This subchapter will discuss the findings of this study regarding strategic position. The strategic aspect has been mentioned in previous research as an influence on adoption of innovations, however, this study enlightens the strategic influence on adoption within the digital context. This study also proposes new aspects of the strategic theme which have not been discussed in previous research. To begin with, this study imply that a digital strategy is important for internal stakeholders to gain understanding for what a company wants to achieve with digital innovations and this in turn influence their willingness to adopt digital innovations. In addition, this study proposes that an organization could benefit from including both the external and internal perspective in their digital strategy to achieve their digital transformation. Furthermore, previous research did not enlighten the importance of unifying the digital strategy throughout the whole organization and this study implied that a unified digital strategy is in fact very important for the internal stakeholders. This

study also imply that the digital strategy should consist of a roadmap which explains what steps an organization will take to reach their goals. The strategic theme of the developed conceptual model for this study also consists of success measurements, value propositions and business model and these themes have not been enlightened in previous research. This study imply that an appropriate digital business model and value propositions are very important to enable the internal stakeholder's adoption of digital innovations.

Frambach and Schillewaert (2002) mention strategic posture as a one factor for organizational innovation adoption, however, how strategy influences the adoption of innovations, or the importance of strategy is not discussed in their research. As for this study, the digital strategy was discussed by several interviewees and pointed out as an important factor for making the adoption of digital innovations more successful. The strategic position is therefore highlighted more distinctly in the conceptual model for this study. Several interviewees pointed out that the current digital strategy of the case company is deficient, and this creates confusion and difficulties when acting towards the customer. Welch and Jackson (2007) argue that the internal stakeholders understanding of the strategic direction of their organization is in fact very important, because otherwise they may lack commitment which can inhibit the adoption of digital innovations and the digital transformation journey. As one interviewee pointed out that the case company are lacking a vision for what the case company aims to achieve with digitalization, and it was expressed a digital strategy is important to motivate the internal stakeholders to be committed to the transformation journey. Cameron and Green (2020) express the importance of leaders and managers communicating the goals of the digital journey to make sure that work is managed across silos, which was confirmed as a struggle in the case company as one interviewee expressed that the communication needed to be improved to manage the siloed structure. Several interviewees implied that the digital strategy is not unified between the company divisions which results in confusion for the internal stakeholders, and this imply the importance of managing work across silos as Cameron and Green point out (2020). Having a unified digital strategy will make the internal stakeholders more committed to adopting digital innovations since it will be easier to visualize the wider picture of the what the case company aims to reach. And it was also expressed by a few interviewees that they thought that a strategy exists, but that the case company are not living according to the strategy which imply that it is important to both communicate the goals better but also to create more common goals.

Parvianien, et al. (2017) present a model for how organizations should tackle the digital transformation process. And as the case company struggle with adoption of digital innovations, one can assume that the case company has not worked properly with the pre-understanding of how the transformation will affect the company. Warner and Wäger (2019) express that the management must understand that the digital transformation will affect the entire business model, structure and processes, and the strategic challenges will stay in the organization if the strategic capabilities are not added in advance. The empirical findings imply that the case company are missing a digital strategy, which is one kind of strategic capability that enables the digital transformation journey. Another aspect of the developed conceptual model and the strategic position theme, which is not mentioned in previous literature, are the obstacle of only having the digital strategy focused on the customer and not on the internal stakeholders. One interviewee describes the importance of making the digital change internally as well as externally, and having appropriate digital innovations internally are one important prerequisite to serve the customer in the best possible way. This also indicated through Parvianien, et al. (2017), who point out that it is importance to analyze what impact the digital transformation will have on the company and identifying potential gaps before

implementing digital innovations and making sure the that the organization have the correct prerequisites.

Another aspect of Parvianien, et al.'s (2017) model is that the organizations should identify which steps the organization must take and in which order the actions should be proceeded in. This thesis proved that a roadmap towards reaching the goals was a prerequisite to understand the digital transformation and be committed to the journey. One interviewee expressed that the case company are not good in describing the "how" and this results in confusion and risk for the internal stakeholders to feel overwhelmed.

The conceptual model for this study points out digital business model, value propositions and digital success measurements as two topics within the strategic position theme. These topics have not been mentioned earlier in the adoption research, however, these factors have been proven through this study to affect the adoption of digital innovations. Parvianien, et al. (2017) explain that organizations are likely to discover influence on models by digitalization and without change in mindset and rebuilding in strategy many companies' risks to fail with their digital transformations. This was supported by the empirical data, as one interviewee pointed out selling digital innovations are not the same as selling manufactured products and to resolve this problem, one can argue it requires a change of mindset of the salespeople and management to understand that the business model needs to be adjusted to fit the digital innovations. Parida, et al. (2019) express that digital transformation force companies to develop their business models to fit both products and digital innovations and understand the impact it will have companies existing business model. This was also stressed in this study as it was described as difficult to justify the digital innovations through business cases which resulted in offering the digital innovations for free to the customers. As one interviewee expressed, the case company does not have the knowledge of how to create a new business model for digital innovations. Knowledge was mentioned as one reason for why the case company have difficulties with creating value propositions for the digital innovations, but it was also pointed out by another interviewee that the understanding for the data that digital innovation provides must be improved. This can be referred to what Warner and Wäger (2019) mention about management must understand that the digital transformation will affect the entire business model and this study imply that analyzing the wider picture beforehand will help enable a successful digital transformation and adoption of digital innovations. To have an appropriate business model for digital innovations will make the adoption easier for internal stakeholders.

According to Weill and Woerner (2015) organizational politics, work in silos, global operations, legacy systems tend to make smaller and younger companies adopt better to new digital business models compared to larger and older companies. One interviewee describes how the case company uses to many traditional models which is explained as one reason for why it is difficult to sell digital innovations. Since the salespeople of the case company are used to selling solid products, they need support to feel comfortable to sell digital innovations. Further, as previously mentioned, the case company is a global company with a siloed approach, which could influence the difficulties of adopting digital innovation and this is in line with the research of Weill and Woerner (2015).

The empirical findings of this study stressed importance of creating knowledge of how to use data to measure success and help the case company to create better offerings. One interviewee pointed out limitations among the internal stakeholders in understanding how data could add value to other areas of business, and instead the case company focus very much on revenue, KPIs and ROI. This is in line with what Fitzgerald, et al. (2014) explain, that companies tend to struggle with computing ROI and defining appropriate KPIs when proceeding with a digital transformation. The interviewees

pointed out that they are being measured the same way with digital products as with solid products, which creates difficulties when adoption digital innovations. In previous adoption literature, this topic of digital success measurements has not been pointed out, however, this study suggests that it is in fact important to set-up relevant business targets for digital products as well as developing new ways to measure success of digital innovations. Appropriate targets for digital innovations are important both based on the perspective that the case company is a revenue focused company, and the internal stakeholders are used to being measured on revenue and adjusting their KPIs and target to the fit digital innovations and the digital transformation will most likely make the adoption of innovations easier. And secondly, creating relevant targets for the digital transformation will simplify the collaboration between the different company divisions as they will be working towards the same goals. One interviewee described that the collaboration is sometimes gone due to the KPIs of the different company divisions does not match each other.

5.2.3   Organizational adopter environment

For the result of the adopter environment, this study found soft aspects of the organizational culture to have a greater impact. Even if previous literature has been presenting aspects of involvement, encouragement, promises, and collaboration and knowledges sharing, it was interesting to that the result presented the softer aspects as very important. Even if the previous literature describes that during a digital transformation and innovation journey, a change of mindset and culture is inevitable, and the literature of organizational culture argues the importance of culture when there are on-going changes, there is not much in the literature describing how it influences. The result of this study presented a positive view on the organizational culture from the internal stakeholder, and that it was great in many aspects and especially in their closest team. Although, when these aspects of the organizational culture and environment were discussed, the opinions were sometimes contradictory. It was interesting that the internal stakeholders would not connect all these aspects together when it came to collaboration, promises, etc. Another very interesting aspect was the influence of previous promises of innovations, and especially digital innovation, would leave a bad word of mouth among the internal stakeholders and influence their attitude negatively. That internal stakeholders completely had lost trust for certain colleagues from being promised technical functions, promised their customers the same and then that they later are not fulfilled, and sometimes due to the withdraw financing from top management. That was also influenced by the lack of involvement and understanding of the digital innovations, and the siloed approach of making internal stakeholders focus on their own personal success which further split the teams and company divisions even more.

Parvianien, et al. (2017) imply that digitalization influences the culture and to succeed with digital transformation work towards changing mindsets and rebuilding their culture must be prioritized. Warner and Wäger (2019) imply that the culture of an organization will inevitable be changed when working towards a digital mindset and digital transformations. The authors acknowledge how a cultural change will happen when focusing on digital transformation. The result of the thesis study found the culture to influence the adoption of digital innovations, although the influence of involvement, encouragement and knowledge sharing was found to be greater. In a large global organization like the case company, multiple organizational cultures were found. Even if the basis of the culture would be the same, the environment around the internal stakeholders were identified to influence the participants of the study more. Further, Vial (2019) enlighten the cultural influence on risk taking, experimenting, innovation, mindset, and that it can become a barrier if the digital innovations are too radical. There were indications from the thesis study that if digital innovation were not properly understood by the internal stakeholders there could be a barrier. The organizational culture did also indicate that some internal stakeholders were prone taking large risks

by breaking rules and develop digital innovations of their own without the support from the organization if they believed in them. Frambach and Schillewaert (2002) describe that one important factor of influence for digital innovations can be encouragement. This was identified to be important for many of the internal stakeholders in this study, were several described a good encouragement from their local teams but that the encouragement from higher up in the organization could be missing at times.

Fulfilling promises on an internal and external level were identified to be important for internal stakeholders when choosing to adopt digital innovations. Previous literature discusses some perspectives of promises, although not in the same way as the result of this thesis study. Grönroos (2009) discusses the importance of making promises to create value by internal marketing or enable value creation by interacting in the customer processes and points the importance of internal support. The implies importance by Grönroos (2009) regarding promises were found to be important in this study. Although, this study further found the issues with promises that previously have not been fulfilled influencing the adoption of digital innovations. There were statements from internal stakeholders which had made promises to their customer based on the promises internally from the developers of the digital innovations. These internal stakeholders described a lack of trust for digital innovations and that they were not interested in making new promises to their customers regarding digital innovations if they were not sure it could be fulfilled. One interviewee expressed that even though many improvements with digital innovations has been performed, internal stakeholders still remember that the digital innovation did not meet the expectations in the beginning. Ballantyne (2003) proposes that effective internal exchange would be developed from the value and fulfillment from commitment, trust, and mutual promises for an offering. That is similar to the result of this thesis study, that commitment, trust, and promises have influence on how the internal stakeholders perceive the value that the digital innovation will offer.

Parida, et al. (2015) imply that it is crucial to have a well-functioning relationship between a company's functions, divisions, and stakeholders to share information around the organization to enable customize the value creation of the innovations for specific regions. The author also points the importance of investing across the organization to enable new possibilities and to move forward with digitalization. The result of this thesis study presented the importance of a well-functioning relationship between different parts of the organization and those specific regions had various demands of what digital innovations could do to suit them. Further, this study presented that the collaboration and knowledge sharing between the divisions, units, and teams to be important. Several internal stakeholders in the thesis study stated that the collaboration between the divisions, units and teams were not always good and that it would lead to specific regions working on one innovation which were very similar to another one's. The collaboration with the developers and being involved in the development process would also change the ability to spread a digital innovation. Front-line employees were very prone of their customers, and many expressed that they know what their customers wanted but the digital innovation usually did not fulfill their requirements and to sell it to the customers.

Damanpour and Schneider (2006) describe that the groundwork for successful implementation of innovations come from integration of groups, the ability to facilitate coordination, and settlements of conflicts between organizational units and internal stakeholders. To integrate groups and facilitate coordination through collaboration were found to be important in this thesis study. One interviewee pointed out the global sharing as lacking between the company divisions. Although, settlements of conflicts were not something widely discussed from the participants. There is always an importance of settle conflicts to improve collaboration, but this study could not find it to be one

of the most important factors for the adoption of digital innovations. Although, a conflict could be connected to the break of promises from other internal stakeholders and the organization, but the result of this study implied that it would have a greater effect on trust within the organization rather than conflicts.

This study implied the importance of good knowledge exchange within the organization. Ballantyne (2003) presents a model with three types of pattern orientations for knowledge exchange by experts, markets, and internal stakeholders. The author describes expert-oriented top-down channels, market-oriented channels that link the entire value change from internal stakeholders to customers, and employee-oriented channels by internal communities that are driven by similar interest like social or economic. This thesis study presented indications of the need of knowledge sharing through the organization, for example, from channels like the ones Ballantyne (2003) presents. A top-down channel was important to present what will come and to share important information of funding's, new decisions, etc. Although, there are signs of importance from having channels bottom-up for everyone in the organization to share their knowledge of what is important on the market right now, what is changing, and what will be changing. One interviewee pointed out some global forums would be appreciated where internal stakeholders can get involved and share things regarding digital innovations. These questions are not only important for the front-line employees to keep track of, but with the fast pace of developing digital innovations it could also be important for the top management to know. At the case company, the thoughts of what is needed both internally and externally, what should be prioritized, and how things work in the company differs a lot. The market-orientation was at focus for the case company and the study, that all their focus would be on the external customers and tried to connect the value chain, internal stakeholders, and customers. Also, the employee-oriented that knowledge exchange would go through internal forums were important. Although, the view Ballantyne (2003) expresses that the similar interest could be connected to social or economic were not identified. In this study, the need for internal forums or communities to share knowledge would be important, but rather for the reason of interest in the technology, to get the information available for every internal stakeholder to find, or to be able to ask questions for more information.

In the research of Hofstede (1994), the author describes those multiple organizational cultures depending on division or business line are likely to arise in multinational organizations. This thesis study results presented variations in the organizational culture, both due to country and company division, unit, or team. Although, the number on participants from division, unit or team were not enough to prove the actual differences but more how collaboration, information sharing, and trust.

5.2.4 Organizational commitment towards digitalization

In the result of this study implied trust and support from the organization was very important. Both in the aspects of the changing environment for the organization and the internal stakeholder but also for internal stakeholders to be trusted from top management that they are aware and can handle to know what would be the most important for them and in what ways these things should be done. It was interesting how the structure of the organization would be built on trust and support for the teams, units, and divisions to work independently, and at the same time many things were supposed to be developed and done centrally in the organization. The result presented that the issues or creating the appropriate awareness of the importance of both the journey forward and the need for internal stakeholders to understand the strategy and roadmap. Also, that the result presented a commitment from the entire organization would influence more than expected. Most of the previous had focused on the support and commitment from top management, and even if that was found in this study too, the overall commitment from the rest of the organization was the

thing that would influence the adoption of digital innovation. The role of the managers was very important for creating the necessary awareness, trust and support, commitment to convince the internal stakeholders of digital innovations being the most appropriate way forward.

Previous literature presents the importance from trust, support, and commitment from management differently. Although, management are the internal stakeholders which should have the final work of proceeding within digital innovation or not. The managers should be the ones who decide whether an innovation get the appropriate funding's and resources needed. The management commitment towards digital innovations therefore becomes central. Damanpour and Schneider's (2006) argument of the managers having the power to decide whether to move forward with an innovation or not align with the result of this thesis study. While that is true, this study observed certain issues with management and other parts of the organization overseeing the decisions. There were statements describing the top management of the case company all committed and aligned of the importance of change but at the same time the top management could not describe what they were committing to. Further, other internal stakeholder would state that the management of the organization is slowly understanding the importance of developing digital innovations to stay competitive on the markets and to fulfill the customer needs. At the same time, the focus of digitalization and development of digital innovations had its focus on the customer and leaving the internal stakeholder without digital innovations and tools to use. Matt, et al. (2015) discuss the importance of management being aligned and go all in toward the changes needed for digital innovation projects, otherwise its resistance could be developed in the organization. The authors also state that the focus should be ensuring appropriate leadership skills and stakeholder involvement. Further, Welch and Jackson (2007) imply that the internal stakeholder must understand the strategic direction otherwise there could be a lack of commitment and trust for the strategy or senior management. For this study, it could not be stated that lack of commitment and trust would be connected to the strategy and top management. One reason for this could be the connected to how far in the digital transformation journey the case company was. There were more issues at the case company with not having any sort of aligned strategy for the entire organization. Although, there were indications of the top management failed with aligning the company and creating an awareness of the digital innovations, it could be a possible future development. The early stage of the innovation journey was still presented as hopeful from some of the internal stakeholders.

Khin and Ho (2020) state that without a genuine commitment for digital innovation the risk of it becoming unsuccessful increases. The statement aligns with the result of a mixed commitment, and internal stakeholders opposes rules and rejections of innovations they think are important. Since the structure of the organization should enable decision of needed innovations to be taken for a specific region, statements of wanting to develop digital innovations centrally in the organization does not make sense. This was presented as an issue of the case company. Internal stakeholder in various parts of the organization described how they perceived that there were lots of statements of what to come but without anything later becoming reality. One interviewee expressed that management is putting a lot of fancy words out there, however, the feeling is still that larger steps must be taken in the digital direction. This could also grow the lack of trust and support for the management, several stated that revenue was a large issue. Further, Warner and Wäger (2019) discuss in their research of the possibility that organizational politics, history, habits, emotions, and core competences for creating holdbacks for senior leaders. The result of this thesis study presented possibilities of this being true. Due to the confidentiality and anonymous of the report all factors are not able to be discussed but organizational politics, history habits, and core competences could be understood to be potential holdbacks as well as diversity.

Trust and support from managers were identified to be both good and bad for the case company. Hofstede (1994) suggests that a key factor for supporting the internal stakeholders of an organization is by having a visible leadership and to match appropriate tasks with the appropriate internal stakeholder. The author proposes that being there for their employees and approach the stakeholders from their competences. Further, other authors have also implied an important role of organizational leaders in their research. For example, Vial's (2019) suggestion of the importance of leadership when trying to change the mindset towards digital innovation is very important align with the results of this study and that the organizational leaders should ensure the internal stakeholders to follow and enable good collaboration. This study recognized the need of a clear path forward, for the internal stakeholders to be able to understand the long-term perspectives and goals, and to align the mindsets of internal stakeholders of why the changes are happening.

Khin and Ho (2020) conclude in their research that organizations which possesses a digital mindset are more likely to be committed toward and accepting new digital technologies. And in order create a digital mindset, this study proposes that one important aspect is creating awareness. One interviewee pointed out that there is a lot of hesitancy internally to talk about digital innovations and it is needed to create awareness and get internal stakeholders talking about digital innovations more.

5.2.5 Promotional activities

The result of this study presented new information of what sorts of activities was wanted for the internal stakeholders, the sort of training that was needed and the importance of using internal stakeholders who are trusted and interested to become digital ambassadors. It was interesting to understand the importance of using appropriate activities when trying to educate and train the internal stakeholders on the digital innovations. Many of the internal stakeholders described how these large digital seminars with hundreds of internal stakeholders are useless. That people will not learn because they are doing other things, they are not comfortable asking questions and some might not even be interested in participating. These internal stakeholders proposed training in smaller groups with someone they know and trust, and not some developer from somewhere else in the company that they probably never had heard of. This result presented the importance how the education and training is done, not just that it is done. The internal stakeholders will not learn just because they have the possibility to learn. They must understand the importance of the training and how it will benefit them. These so-called digital ambassadors have not been identified in previous literature to be mentioned. Although it was surprisingly that the data presented some result of how this could be performed and promoted within the organization. For the solutions with digital ambassadors to work in the organization, for example, the trust and support from management must be improved, a better encouragement and possibility for involvement, and a better collaboration and knowledge sharing.

This study presented the use of promotional activities to be very important when trying to successfully implement digital innovations. Promotional activities can have a broad scope and meaning, and for this research some of the main and more important activities were found to be education, training, and internal marketing. Questions of how the activities are promoted to the internal stakeholders, how they were approached, which type of activity, how many were involved, and who was the promoter would influence how the digital innovations were perceived for the internal stakeholders. Frambach and Schillewaert (2002) imply in a similar way to what was presented in this study that there are parameters connected to internal marketing and communication that influence the adoption of innovations. Frambach and Schillewaert (2002) focus

in their research and model on parameters as education, encouragement, training, individual awareness of the innovation. Compared to Frambach and Schillewaert (2002), this study choose to focus and categorize differently. The internal marketing for this study includes activities and promotions of to get a wider spread of a digital innovation internally, and communication was recognized to be of special importance. Even if there were diverse opinions of how to educate, promote, communicate important information to internal stakeholders, basically all the participants agreed on the importance of developing new methods, adapting education to stakeholders, and to get more internal stakeholders to understand why the digital innovations should be used and sold. Schneider and White (2004) argue in their research of the importance for the organization to provide their internal stakeholders with appropriate training and resources to keep fulfilling the needs of their customers. This was also a factor of importance and was especially connected to the lack of knowledge from selling digital innovations, digital products, or services. The lack of knowledge and slow processes to get the education and information spread around the organization would influence the adoption and how the digital innovations were perceived. Trenerry, et al. (2021) describe the importance of evolving organizational processes and try to improve the teamwork and cross-functional teamwork within the organization to work of the communication and integrations. The importance of working on teamwork and cross-functional teamwork to improve the communication of the organization are agreed in this study to be important. Further, Vial (2019) proposes that workshops can be good to improve the involvement of the internal stakeholders. That workshops can be a good idea to improve the involvement of internal stakeholders are agreed in the sense of several internal stakeholders wanting to be able to try innovations before launch, get to share their thoughts and ideas of improvement, and improve the collaboration. Although, the major difference identified in this study compared to the previous research studied, was the importance of using so called digital ambassadors or digital champions. These internal stakeholders should be the connection between divisions, the developers, the front-line employees etc. and promote about digital innovations to their team members and improve the adoption of the innovations. These digital ambassadors should not be forced to take one this digital innovation but wanting to be a sort of expert and a person the colleagues can turn to get help and information.

Welch and Jackson (2007) imply that internal communication within an organization is important even if it is not connected to a specific task since it can help with trust, commitment and understanding for strategic directions, and should include the entire organization and its stakeholders. Aligned with the research implications of Welch and Jackson (2007) this study also noticed a need for this. An improved communication could possibly improve the understanding for on-going changes and bring the organization together to work forward. Further, the understanding of the digital innovation could be very important to improve the adoption. Trenerry, et al. (2021) identify the need for communication and internal collaboration during digital transformation to be possible factors influencing the resistance and adoption. Further, Yoo and Park (2007) describe a critical aspect of perceived quality to be a shared understanding between the organization and its internal stakeholders. From the perspective of the previous research, the result of this study shares the view of the importance of developing a shared understanding to perceive the quality as expected. Continuous issues with innovations not delivering what was promised, not agreeing with needs, or lacking own internal tools have not improved the alignment of the case company and its organization. Communication was noticed to be one of the major problems from improving these factors and in turn improve the adoption of digital innovations.

In this research the role of managers was understood to influence the adoption of innovation. Both Medberg and Grönroos (2020) and George (1990) imply that managers have the responsibility of preparing their internal stakeholders to be able to handle and promote innovations to their

customers. Further, Ballantyne, et al. (2011) argue that the knowledge and competence of the internal stakeholders continuously must be updated to maintain a competitive position on the market. This previous research states education and training is important to enable a successful adoption and launch of digital innovations. Even if the result of this study agrees with the statements of managers role to prepare their internal stakeholders, it was identified to be important of having someone close in the team or someone the internal stakeholders trusted to make it work. The manager should still be the one enabling the educations, training, and marketing, but it did not have to come from the managers. The study observed that there were of greater importance to have someone trusted, especially for the internal stakeholders working more closely to the customers, to be able to feel comfortable to ask questions, have updated information and training in smaller groups. On the other hand, Pichlak (2015) describes that one way to influence the acceptance of innovations for the internal stakeholder could be to incorporate standardized activities and systems with the existing routines. This was not something observed in this study, rather that there would not always be able to incorporate standardized activities or systems since there were a lack of these. The structure of this case company organization in many cases aimed to enable independent work and ways of working within the teams, units, or divisions.

5.3 Perceived quality of digital innovation

This chapter will discuss the findings of the theme of perceived quality in the developed conceptual model. Previous research has discussed aspects of perceived quality regarding adoption of innovations. However, this study has enlightened perceived quality and adoption from a digital perspective. Perceived quality will be discussed from two parts of quality attributes and digital innovation as a value creating mechanism.

5.3.1 Quality attributes

The result of the quality attributes did surprisingly present a more important focus on the quality attribute creating advantages for the internal stakeholder, even if the actual digital innovation would be developed for the customer. The result did not imply on the same amount of quality attributes to be needed, but to keep the digital innovations simple, and make it flexible, and quick and easy to use. Further, even if the focus of the case company was to develop the digital innovations to the customers, there were more quality attributes that would focus on the internal digital tools and what was expected for them to fulfill. For example, to make them compatible with the rest of the systems and tools. The most surprising thing with the result and which was not discovered in the same way was the power from the internal stakeholders to choose whether to promote a digital innovation to the customer or not. That the result presented that it was as important to fulfill the needs of the internal stakeholder rather than the customer. Since this study focused on the internal stakeholders instead of the external perspective of customers, it was not possible to compare the perspectives with previous research on the external perspective.

Specific quality attribute was identified to be more important than others when choosing to adopt to a digital innovation at the case company. In this study the most important quality attributes described were ease of use, compatibility, flexibility and that the digital innovation should be quick to use. These attributes align with some of the previous literature of both innovations and to perceive quality. For example, Rogers (2003) argues that it is critical for the adopter to perceive the quality attribute as relative advantage, compatibility, trialability to choose to adopt the innovation. Frambach and Schillewaert (2002) argue for perceived benefits, compatibility, trialability to be some of the attributes for innovation. Some of the quality attributes in the literature align with the ones

found in this study. However, this study found it to be more important with the actual functions of the digital innovations not to be too complex.

The authors Steenkamp (1990), Snoj, et al. (2004), and Damanpour and Schneider (2006) all describe that there are more factors than quality attributes of the innovation that contribute to the adoption. In turn, Snoj, et al. (2004) discuss perceived quality to and quality attributes from the customers perspective. The focus of the previous literature can therefore be discussed for a more internal perspective and an external perspective. For this study both perspectives have been identified to influence, although the internal perspective, and personal and organizational factors was noticed as more challenging. For several of the participants, the thoughts of perceived quality and the influence of the quality attributes focused on their own personal views while other participants only focused on their thoughts of knowing what their customer would want or needed. Although, even if the case company would focus on developing digital innovations for their customers, many of them would not be satisfied if they would not get more tools from digital innovations. Some participants would not understand for themselves how digital innovation could be developed for their customers, but they would not have the ability to support or understand the customers when lacking their own internally.

5.3.2 Digital innovation as a value creating mechanism

For the internal stakeholders to understand the value of a digital innovation and how they could benefit for them was presented to be very important in the result of this study. The result also presented of the importance of understanding data and the possibilities that digital innovations could create. This understanding for data and the utilization of data was not identified in previous literature. Further, it was surprising that in the same ways as with the quality attributes, it would be as important for the internal stakeholder to benefit from the digital innovations and not only the customer. Even if the case company organization has a substantial customer focus, the internal stakeholders cannot be forgotten in the transformation journey. Another surprising factor was that certain internal stakeholders would not want to promote digital innovations for the customers, if the organization did not start developing necessary digital innovations and tools that would improve the quality of their work. The perceived quality and choice to adopt digital innovations were resulting to be more complicated if the internal stakeholders were not the primary focus.

Rivière (2015) proposes that a source of the value creation process of an innovation was connected to the how the attribute was perceived during usage and how perceived value would be an aspect of perceived quality for the individual acceptance. In this study the quality attributes connected to the digital innovation could be one influencing factor for adoption. The importance of the quality attributes for the internal stakeholders proposed that without them the potential of not understanding the benefits of the digital innovation would increase. For the participants of this study, the personal perceived benefits for the internal stakeholder were very important even if the digital innovation would be aimed for the customer. There were statements from the internal stakeholders describing that they could resist or not choose to adopt to a digital innovation if they would not understand the potential benefits for them personally. From previous literature, Talukder (2011) states that there is a possibility of internal stakeholder resisting change is they do not understand the potential benefits. This study did notice a potential holdback for change to be a lack of understanding. The development of digital innovation can be viewed as a sort of change since the entire organization is trying to develop a journey forward. In this case, the understanding of benefits was found to influence the adoption of digital innovations. Further, Frambach and Schillewaert (2002) imply the importance of a target group within an organization to understand and see the benefits of the innovation, otherwise it might not accept and adopt to the innovation. This study

aligns with the stated from Frambach and Schillewaert (2002) of the challenges with the internal stakeholder understanding the benefits of an innovation and therefore accept it. The study presented the same challenges from previous digital innovations launched in the organization and to their customers. Although, as previously stated, there could still be challenges with the internal stakeholders promoting the digital innovations outside the organization even if it was aimed for customers.

Parvianien, et al. (2017) propose that even if companies understand the importance of digitalization and digital transformation, many have difficulties with understanding the benefits and potentials of positive impact. Further, Khin and Ho (2020) propose that there must be a genuine commitment and recognition for the benefits of digital innovations for an organization to increase the possibility for an organization go further with them. In this study these sorts of issues could be found to influence the adoption and perceived quality for digital innovations. Participants in the study stated that there should be benefits for the internal stakeholders, which in this study also could be understood to be aligned to impact the commitment of digital innovations. The issues with genuine commitment and recognition for the benefits were found across the entire organizations, even if internal stakeholders in various positions could have different reasons for it. There were also a lot of internal stakeholders that thought the digital innovations was good for the case company and that they would imply that they were onboard. Although later, the same internal stakeholders could describe that they had not adopted or accepted certain digital innovations for example due to the fact that they did not fulfill their needs, or they could not understand how it would improve their work or the work for their customers. It was also found to be frustrating with competitors being better on selling their digital innovations even if they did not have a better innovation to sell. Frambach and Schillewaert (2002) imply that competitive pressure could be a potential environmental factor to increase the adoption of innovations. This was not something that could be stated from this study, even if internal stakeholders would describe a frustration over the issue. One on hand, the internal stakeholder could describe a confidence in the case company over development of products, but on the other hand, they were not all as confident in the development of digital innovations.

In this study there were statements from internal stakeholders which were not pleased with the internal situation of delivering digital innovations. It was presented in the research that the focus of the organization was and would aim for the external customers. This was discovered to irritate several of the internal stakeholders as they could not deliver what was expected from them without appropriate tools. The organization pointed in different directions of who were also in charge of this. Both, Gummesson (1987) and Grace and Iacono (2015) state in their research that it is as important to enable the appropriate conditions for the internal stakeholder to enable for them to deliver a high quality to keep the external customers satisfied. This study found that without providing the internal stakeholders with appropriate conditions in terms of tools, education etc., the risk of rejection for digital innovation by internal stakeholders would increase. The appropriate conditions for the internal stakeholders were found to be necessary to enable for a better support, acceptance, and adoption of digital innovations, and for the internal stakeholders to better understand the benefits and to perceive quality.

In some cases, the structure of the organization will influence the where the digital innovations are developed from, some could be developed close to the market and other from a central part of the organization. Ballantyne, et al. (2011) state that its common for larger industrial organizations to have multiple stakeholders, either or both, internally and externally that are included in the value creating process. Further, Vial (2019) states that there are multiple barriers affecting the success for

digital innovations in the value creation process. The case company in this study often do have multiple stakeholders involved in the development projects and often modify innovations and products after what the customers ask for. The value creation process of the innovations therefore often changes and can have various influence of the need and perceptions of the internal stakeholders. Trenerry, et al. (2021) describe that the culture of the organization and if they use more traditional work processes in silos the perceived value can be decreased by the difficulties to intercept the customer demand. This type of challenges was identified in certain parts of the company where the focus could be on a specific area of expertise, which lead to lack of knowledge from other areas. The internal stakeholders working in the front-line closest to the customers would need to get information from various divisions and teams in the case company, because they were the only ones with this specific expertise that the customer needed help with and to create value. Tantalo and Priem (2016) further describe that more value-creating innovations and the increase of value creating processes from important stakeholder groups can lead to better engagement and more efficiency in the organization. The authors also proposed that top management play an important part of ensuring an equal mindset for the internal stakeholders regarding value creation. This study cannot imply that the increase of value creating processes and value creating innovations will eventually lead to better engagement and efficiency in the organization. Although, this study can imply that an involvement in the value creation processes and a more equal mindset when it comes to value creation could possibly lead to a better understanding for the perceived quality and for the internal stakeholders to understand the benefits. This result of this study further aligned with the statement of Grace and Iacono (2015) regarding the engagement from the internal stakeholder in the value creation processes will vary depending on dimensions like exchange with external stakeholder, organizational structure, and personal experience.

This study identified the understanding for data and data utilization to be one thing to influence the perceived quality and in turn the adoption of digital innovations. The opportunities and current collection of data internally and from customer was viewed differently from the organization but most of the internal stakeholders agreed on the need for an improved understanding and use of it. Several of the participants discussed issues with the data in regards of the organization always focused on charging the customers for collecting the data and not focusing potential of the utilizations for the organization by the customer agreeing to share their data. There were frustrations for some of the interviewees that the focus was too narrow to become successful. Also, regarding the importance of training more of the internal stakeholders to understand and interpret the data. At the end, the focus turned back on the structure of the organization and everyone having their own KPIs, their own goals, and that the focus of digital innovations were limited to the customers. Several of the internal stakeholders could potentially understand benefits of the data if they were trained and not forced to charge their customers. From the internal stakeholders' point of view, the customers would also likely understand the potential and benefits of sharing their data with the case company. This type of discussion has not been found in the previous literature reviewed and could be influenced by the lack of research within the area of adoption of digital innovations on a manufacturing market.

5.4   Individual adoption

This study proposes individual adoption as an important factor towards adoption of digital innovations. Individual acceptance has been linked to adoption of innovations in previous research, however, this study enlightens the individual influence in a digital context. The result of this study imply that individuals could in fact be a potential barrier or enabler towards adoption of digital innovations since they have the possibility to decide whether to adopt or not. This study proposes

personal characteristics, digital interest, and knowledge as influencing factors towards individual adoption. The interviewees presented varied interest in digital innovations and those interviewees with the highest interest were more likely to adopt a digital innovation early. Previous knowledge was shown to influence the adoption since those interviewees who possessed more knowledge and experience presented themselves as more confident in using digital innovations and was therefore more willing to adopt. The result of this study also presented behaviors of individuals as influencing factors towards adoption of digital innovations. The section of individual adoption is divided into the parts of personal characteristics and behaviors.

5.4.1 Personal characteristics

Individual adoption is an important part of the developed conceptual model for this study and the result of this study implied that an individual's personal characteristics influence the adoption of digital innovations. Frambach and Schillewaert (2002) present in their model individual acceptance as an influence on the adoption and continued use of an innovation within an organization which is in line with the findings of this study. The individual adoption in the conceptual model is assumed to have direct influence on the adoption of digital innovations and is therefore presented closest to the adoption in Figure 3. In their model, Frambach and Schillewaert (2002) present social usage, organizational facilitators/internal marketing, personal characteristics, attitude towards innovation and personal innovativeness as influencing factors on the individual adoption which to some extend is in line with the finding of this study. This study argues that the personal characteristics have significant influence on the individual acceptance and to further elaborate Table 4 in the chapter Empirical findings, the typification of behaviors based on how the individuals responded to different topics and their personal characteristics could be one reason for why the interviewees responded different in the interviews. Frambach and Schillewaert (2002) state personal innovativeness as one factor influencing individual adopting in their model. This factor was not significantly supported by this study and the adoption of digital innovations was more dependent on other factors. Many of the interviewees described the need for digital innovations in their daily work, however, there were only a few who had innovative ideas of what they wanted to implement, and they pointed out the processes, decision making and structure of the company as obstacles against implementing their innovation ideas. However, there were several interviewees who was very positive towards digital innovation but did not see themselves being innovative and developing the innovation. Most of the interviewees preferred someone else to develop the digital innovation and then just simply present it to them. This indicates no pattern between personal innovativeness and adoption of digital innovations.

Another aspect Frambach and Schillewaert (2002) and Talukder (2011) discuss is the social influence on the adoption of innovation. Social influence referred to social network and usage of the innovation by peers in the company and Talukder (2011) concludes that social networks have a significant impact on forming internal stakeholders' attitude towards innovations. This study focused on a large global company and as the timeframe of this project there was limited, it was only a limited number of interviews which was possible to perform. This resulted in difficulties judging the influence of social networks as it would have been needed to interviewee even more internal stakeholders. However, the study implied that several of the internal stakeholders felt supported by their local team and one can argue that when there is trust within the team and one internal stakeholder promotes the digital innovation the rest will adopt the digital innovation as well. As mentioned before, the use of digital ambassadors was pointed out as an enabler for successful adoption which could be considered as one kind of social influence. Another perspective on this topic is that this study implied that individuals have their own needs and if the digital

innovations does not fulfil them, they will most likely not adopt the digital innovation even though their peers are using the innovation.

Frambach and Schillewaert (2002) state in their research that an individual's attitude and belief towards an innovation will influence the individual's willingness to adopt an innovation. The result of the study implied that the interviewees had different attitudes towards change and digital innovations, and this was further elaborated in the study by analyzing their interest in digital innovations. As described in the empirical findings, the case company could benefit from identifying internal stakeholders with an interest in digital innovations and focus on using them in the beginning of the digital transformation journey. The interviewees presented different attitudes toward digital innovations and some interviewees pointed out digital innovations as important for future company growth and others said it was inevitable as the society is evolving to become more digital. The interviews attitude towards change affect how the willing they are towards adopting a digital innovation. One interviewee expressed a positive attitude towards change and wanted to things to change within the case company, and the same interviewee also had a personal interest in digital innovations which implies a high willingness to adopt digital innovations. On the other hand, interviewees could be positive towards change but preferred different approaches when implementing digital innovations due to their personal characteristics. This is in line with Vial (2019) who expresses that the internal stakeholders could resist digital innovations due to how they are implemented. As Table 4 presents, some interviewees preferred to know how the digital innovations would benefit them and others wanted to have more structured implementation and have more knowledge about the innovation. Culture could be one reason for why interviewees present different attitudes (Gelfand, et al., 2008). Tsui, et al. (2007) point out that the overall national context which includes cultural context influence the internal stakeholders view on leadership, performance, and commitment and this will in turn influence their attitude and behaviors at work. The empirical data implied that the interviewees had different motivations as some interviewees related motivation to money and others thought of customer satisfaction as motivation. These differences could be a result from cultural influence. This study also implied that experience could influence how digital innovations are perceived and successfully adopted. One interviewee expressed that the younger generations within the case company tend to see the benefits of the digital innovations while the more experienced generation have a harder time. Individuals of this study possessed different characteristics and presented different opinions regarding adoption of digital innovations. This study implied that individuals perceive the quality of digital innovation differently and they prefer different prerequisites to be willing to adopt. And as Frambach and Schillewaert (2002) point out the importance of analyzing the acceptance among the target group to make the organizational adoption of an innovation successful. One can argue that this is important for the case company since the interviewees presented very different needs and opinions.

5.4.2 Behavioral Types

The empirical result of this study presented individuals with different behaviors and to further elaborate on these behaviors, a typification of different behaviors was created and presented in Table 4, as previously mentioned. The behavioral types were not expected to be a result of this thesis study. The behavioral types originated through a coincidence from discussions, although the behavioral types were naturally formed. These behavioral types resulted to be important for the study and to improve the understanding of the behaviors, values, personalities etc. of the internal stakeholders in the company. Further, since the conceptual model resulted in the individual adoption and the personal characteristics e.g., behaviors to influence the adoption of innovation, the result of the behavioral types are interesting for this study.

This typification of different behavioral types could be of interest for other organizations when implementing digital innovations since other organizations besides the case company could possibly recognize similar behaviors within their organization. Further, other organizations might not have recognized these behavioral differences in their organization yet. This behavioral group types could influence other organizations to considers their behavioral types and use this typification as a foundation to map behavioral types in their organization. The knowledge of behavioral types could be used by organizations as a support when implementing digital innovations. Depending on the behavioral types, organizations could adjust their approach in terms of e.g., marketing strategy, training of the digital innovation and communication to fit the individual's preference, and in turn influence the individuals positively towards adopting digital innovations. By introducing and implementing digital innovations in different ways, depending on each individual, one can assume the probability of the digital innovation being adopted to increase.

Previous research has been limited to only mentioning individual behavior as an influence on adoption of innovations, however, this typification elaborates even further and visualizes the differences in behavior between the interviewees. As this study was limited to 17 interviews, the typification could have been even more thorough if the study would have interviewed more internal stakeholders which was not possible within the timeframe for this study. The supportive behavioral type consists of individuals of a more passive character who possess a structured approach and prefers to have a lot of knowledge about the digital innovation before adopting and using it. The doers' behavioral type is very centered around their own needs and does not likely adopt digital innovations first and they instead prefer seeing the digital innovation being used by others first. The disrupters behavioral type consists of individuals that prefers trying and failing, rather than not trying. They are risk-takers and would happily adopt digital innovations first. The disconnected behavioral type represents the bureaucratic individuals who are concerned with doing everything correctly through processes and they tend to see the most barriers towards adopting digital innovations. How the internal stakeholders behaved and responded in the interviews could depend on several factors, it could be culture, experience, demographics, age, personal characteristics etc.

5.5   Implications for theory and practice

This study believes to highlight an arising problem within the manufacturing industry when digitalization is becoming more common. Digitalization effects organizations in several ways, and some organizations find it easier to adopt digital innovations and some find it more difficult. This study had an internal perspective of how digital innovations can be adopted for this specific case company and did not include the external perspectives. The conceptual model developed for this thesis study has not been tested on other organizations expect for the case company, although this thesis study has explored an area where previous research is limited. For example, previous literature studied from Frambach and Schillewaert (2002) focus combining the customer perspective and the organizational perspective. Further, previous studies from Frambach and Schillewaert (2002), Parvianien (2017), Rogers (2003), and Damanpour and Schneider (2006) have either focused on the acceptance or adoption of innovation, or digital transformation in general but in without a focus on transforming a global manufacturing organization to adopt to digital innovations which this study presents. Another new perspective discussed in previous research from is the perceived quality of digital innovations focusing on the internal stakeholders instead of limiting the perceived quality for customers or other external stakeholders. The perspective of a global manufacturing company and the technological development of digital innovations is new, but the industries are investing in the area and transforming quickly.

Although this study had limitations to size, interesting perspectives for the organization and industry was found. This research of this study contributes with new knowledge within the intra-organizational perspective and how an organization continuously should work with their internal stakeholders to enable them for the appropriate prerequisites. This thesis study presented a need for greater focus on the internal stakeholders and the importance of their role to accept and adopt the digital innovation even if the innovations are developed for customers. The organizational factors in this study were identified to have an impact on the adoption and perceived quality of digital innovations for internal stakeholders. These factors cannot be confirmed to be the same for other organizations with similar size, global spread, industry, and position of the digital transformation and innovation journey, although the issues identified in this organization could possibly be the same for other organizations. The identified factors of the conceptual model are general and could be applied to any organization. The focus was more on presenting the areas of focus to improve the possibilities of a better adoption and perceived quality of digital innovations.

The purpose of this study was to identify and explore factors organizations which internal stakeholders find necessary for the adoption of digital innovations. Based on this purpose, the result of this study has contributed to a deeper knowledge regarding which factors influence the adoption of digital innovation. The developed conceptual model describes a connection of various perspectives from previous research that have not been connected on an intra-organizational perspective. While the focus of this study was limited to the intra-organizational perspective of one large global organization in the manufacturing industry, the conceptual model contributes with areas of focus that could be applied for other organizations. The themes of the conceptual model present areas which any organization could review and have possibilities of improving. The main contribution of this research is the perspective of the digital context of adoption, adoption of digital innovations in the manufacturing industry, and how quality could be perceived internally by the internal stakeholders of an organization.

5.6   Discussion of methodology

There are parts of this study that could have been improved. From the beginning the study had a greater focus on the cultural aspects, although it became too difficult to identify useful findings from the material. Even if many hours were spent on searching for relevant literature for this study there could have been improvements. If the purpose of the study would have been more relevant from the beginning of the study, more time could had been spent on focusing on the literature that were appropriate and desired. In turn, the new focus of the thesis influenced the questions for the interviews and the outcomes of the interviews. The questions for the interviews of the thesis were set early during the study. Questions regarding the interviewee, the team of the interviewee or the case company could had been more clearly clarified before the interviews. Although, the general nature of the questions strengthens the reliability and reproducibility of the study. Sending a short presentation about the project and the interview questions were relevant to support and strengthen the trustworthiness of the study. Several of the interviewees either red the questions in advance, and some of the interviewees even prepared answers. Although, the study would have had an even better trustworthiness if more preparations of understanding the case company had been made in advance and understanding the work, position, and backgrounds of the interviewees. Further, it could had been relevant to had postponed a few the interviews at the beginning of the study to enable the researcher to get a better understanding of the case company, how they worked, and their future plans. The data collection could had been even more trustworthy and credible if the two informal interviews would have been formal interviews that were recorded and

coded. It would have strengthened the external validity by maximizing the variation even more with more the perspectives and an even better distribution of the interviewees.

The findings of the study would likely not have been the same if the study would had been a quantitative study instead of the qualitative study, or a combination. First, a quantitative study would probably have reached more internal stakeholders of the case company and resulted in a larger number of respondents. Second, the mix of the respondents would likely have been greater. Although, the complexity of the organization could had made it complicated to analyze the data set. If the study would have been quantitative, there would not had been the same possibilities to change focus of the thesis study. If the study was a combination of a qualitative and quantitative study, the interviews would have had to be performed faster. There would not have been possible to perform the same number of interviews or the same length of the interviews if the study would had been combined.

Overall, the result of the study with the conceptual model and the typification of behavioral groups could be viewed as successful. The behavioral groups were not something planned for the study but recognized during the process. Both the behavioral groups and the conceptual model are relevant for other organizations since other literature presents this to be an area which has not had a great focus previously. Although, this study was not able to include other factors that could had been relevant for both the conceptual model and the typification of behavioral groups. The typification of the behavioral groups was limited to be based on the answers from the questions of the individual interviews and how the researchers perceived the behaviors of the internal stakeholders participating in the study. The result of the conceptual model and the typification could had been different if there were other internal stakeholders participating or if the study would have been performed at another case company. The individual perspectives and findings of this study present difficulties with the subject and variations that will possibly arise for various participants. Even if the collected data for this study presented multiple patterns and interesting perspectives, all these perspectives would not be relevant for the purpose of this study but could help the case company understand which areas their work should focus on. This study believes to highlight the perspectives of organizations working with their entire workforce, focus on including the internal stakeholders in the process of changes, and genuinely focus the individuals of the organizations.

The data collection from interviews could had been broadened by a wider mix of participants or interviewing more participants that could be compared in various perspectives. Both in terms of age, countries origin from, country working in, positions in the case company, levels in the case company etc. The external validity of the study could had been improved if the distribution of the interviewees would have been better. It could also had been improved by approaching and choosing all the interviewees without the help of the case company supervisor. The study could possible had been improved by including workshops or focus group interviews. It would have been another perspective interesting to analyze and understand how the teams, groups or internal stakeholders worked and collaborated. By using workshops or focus groups the typification of behaviors could had been improved and resulted in more accurate groups. Although, the ethical perspectives did limit the potential analysis of the data. The researchers hope that all participants were completely honest during the interviews of the study, since the researchers had to stay strictly anonymous to not potentially reveal any of the participants or the case company throughout the study.

The external perspective of the study could had been interesting when comparing the perceived quality from the digital innovations of the case company and compare their understanding for the customers with their own perceptions. There was more literature discovered regarding the subject

of external stakeholders rather than the perspective of internal stakeholders. Although, since the external perspective was not identified to be of greater relevance from the interviews, the researchers do not recognize it as a setback for the study.

6 Conclusions

This chapter present the conclusions of the master thesis study answering the purpose and research questions, contributions, and areas for future research.

6.1 Purpose and research questions

The purpose of this study has been to identify and explore factors in a global organization which internal stakeholders find necessary for the adoption of digital innovations. The exploration has been intended to contribute to a deeper understanding of factors influencing the adoption of digital innovations and to gain understanding for how internal stakeholders perceive quality of digital innovations. To answer the purpose of the master thesis, two research questions will be presented that were formulated to guide the work.

RQ 1. ***What are the essential and supportive factors a global organization must consider when adopting digital innovations?***

To respond to RQ1, we put forward a new holistic conceptual model illustrating organizational, quality, and behavioral factors and a typification of behavioral factors essential for the understanding of the adoption of digital innovations. Several essential and supportive factors have been found to influence an organization when adopting digital innovations. These essential and supportive factors was combined into a conceptual model which visualizes how these factors are connected and linked together. The essential and supportive factors was combined into eight different themes of: organizational structure, organizational strategic position, organizational adopter environment, organizational commitment towards digitalization, promotional activities, quality attributes, digital innovations as value creating mechanism and personal characteristics.

The result of this study implied that an organization must consider factors connected to their organizational structure when adopting digital innovations. The complex structure of the case company was found to inhibit the adoption of digital innovation since it was described by the interviewees that the complexity aggravates the decisions processes, collaboration and knowledge-sharing which inhibits the implementation of digital innovations. It was clearly presented in this study that the slow processes and ways of working affected the adoption of digital innovations negatively. To assign appropriate resources was found to be very important, not only to develop and implement a digital innovation, but also to maintain the innovation. To enable adoption of digital innovations it is necessary for organization consider how they structure their processes, collaboration, rules, and resources to facilitate the adoption for the internal stakeholders.

The absence of a clear digital strategy was pointed out by the internal stakeholders as a barrier towards adoption digital innovations. As a global company it is important to have a unified digital strategy to increase the commitment and participation of all parts of the organization. When organizations aim to adopt digital innovations, it is important to consider their digital strategy. This result of this studies implied that a digital strategy should focus on the transformation internally as well as externally. The internal stakeholders also implied that the digital strategy should not only be a vision, but it should also include a roadmap for how the organization intent to reach their goals. Having a clear direction for what the organization aims to achieve with digitalization will set a clearer guidance for how internal stakeholders should comprehend with adopting digital innovations. The result of this study also stressed the fact that the effects on value propositions, business models and success measurements must be considered before implementing digital innovations since developing and selling digital innovations is very different compared to solid products. An

appropriate digital business model and value proposition will simplify the adoption for internal stakeholders. The case company was also presented as a revenue focused company which implied difficulties for the internal stakeholder since the digital innovations does not in most cases create profit directly as solid products do. Considering how to measure the success of digital products is necessary for organizations when adoption digital innovations.

When adopting digital innovations, organizations should consider their environment as a factor influencing the adoption. It is necessary to create an organizational environment which supports digitalization for the internal stakeholders to adopt digital innovations. The organizational adopter environment could be one factor for why some internal stakeholders presented a negative attitude towards digital innovations and why some were more positive and willing to try and fail, rather than not trying. The result of this study proposes involvement, encouragement and promises as the major influencing factors of an organizational adopter environment. It was presented clearly in this study that the internal stakeholders requested to be involved in the development of digital innovations and it was important that their needs were fulfilled as well. The global collaboration is important when adopting digital innovations and the internal stakeholders described the risk of overlapping work and not using the competence within the case company properly. One in important factor for organizations to consider is promises. In this study it was found that the previous break of promises and not delivering to the internal stakeholders as promised affected attitudes towards digital innovations negatively.

The result of this study suggests commitment towards digitalization as an important factor to consider when adopting digital innovations. Not possessing enough commitment as an organization towards digitalization presented several disadvantages. The internal stakeholders expressed the need of creating more awareness of digital innovations within the case company and having more internal stakeholders speaking about digital innovations. Managers must show their commitment to digitalization to motivate the internal stakeholders. It was empathized in this study that this implied for both manager in higher and lower levels of the organization. The internal stakeholders expressed the lack of alignment and support from top management. It was also pointed out that top management promoted and spoke about digital innovations, but then there was no action and implementation which could influence the trust negatively towards digitalization. All these aspects imply lack of commitment and therefore should other organizations truly consider invest in commitment from top to bottom in the organization to show that they are serious about digitalization.

How to promote and spread the digital innovations within an organization is very important to consider when adopting digital innovations since the success of the digital innovation rely on achieving many users. This study proposes to use trusted stakeholders as digital ambassadors to promote and maintain the digital innovations close to the internal stakeholders since the internal stakeholders presented more trust towards close colleagues. Training was also pointed out as an important aspect of promotional activities, and it was expressed by the internal stakeholders to have training in smaller groups instead of larger gatherings. Larger gathering risk internal stakeholders feeling uncomfortable and afraid to ask questions. This study also found communication as important to create a shared view to perceive quality as expected. To develop cross-functional teams and appropriate processes is important to enable communication and should be considered as an important factor when adopting digital innovations.

Quality attributes and perceived value of the digital innovations was also found to influence the adoption of digital innovations. The internal stakeholders pointed out the need for the digital

innovations to be quick, flexible, compatible, and easy to use for them to choose to adopt the digital innovation. Digital innovations should possess quality attributes which meet the internal stakeholders' expectations. The result of this study also implied that digital innovation must provide benefits for the customer and the internal stakeholders. The understanding of how to interpret and utilize data was deficient in the case company and organization should consider developing the understanding since it will influence how the internal stakeholders perceive quality.

The final factor which is necessary for organizations to consider when adopting digital innovations is the internal stakeholders within the organization. This study implied that individuals possess different personal characteristics which will influence their attitude towards digital innovations, preferred ways of working, motivations, interest etc. By acknowledging personal differences between individuals, organizations could potentially approach individuals differently. Organizations could also benefit from approaching internal stakeholders with an interest in digital innovations since they will most likely be more interested in adopting the digital innovations early. The typification of behavioral types can help the organization understand how they should adapt their work towards various internal stakeholders. These behavioral types identify the variation in needs for the internal stakeholders and the importance for a global organization working very separated to understand their organization. The global aspect of the organization and the perceived quality influence the importance of various factors. Although, the personal characteristics and behaviors were found to influence the perceived quality of a digital innovation more than the cultural aspects the variations of culture were still an important aspect. The culture was understood to influence the internal stakeholders work with their customer and their adaption to their customers' requirements.

RQ 2. *How do internal stakeholders across a global organization perceive quality of digital innovations?*

This study can conclude that the perceived quality of digital innovations for internal stakeholders in a global organization is influenced by the perceived quality attributes and digital innovation as a value creating mechanism. The factors of importance for the perceiving of quality varied depending on individual knowledge, interest, behaviors, benefits of their work, and attributes of the digital innovations. The study identified that when developing and launching digital innovations, the organization and their focus on the internal stakeholders influence how the internal stakeholders perceive quality. The organization must focus both on the internal stakeholder and the customer when developing digital innovations for the customer.

To perceive quality for internal stakeholders it is important for the internal stakeholders to understand the benefit from using the digital innovations, both for themselves and for their customers. The understanding of data and the possibilities of using data in their work are likewise important for the internal stakeholders, although it is currently an issue with the lack of understanding and use. The understanding of the data must be promoted and provided by training for the internal stakeholders. Further, perceived quality from attributes of the digital innovation plays a significant role. This study identified the quality attributes of ease of use, compatibility and flexibility, and quick to use to be crucial attributes of a digital innovation. The attributes are important for the internal stakeholder both in terms of their personal opinion of perceiving quality and the internal stakeholder's interpretation of the perceived quality for their customers. For the internal stakeholder to feel comfortable with promoting and selling the digital innovations for the customers, the quality attributes and the benefits of the digital innovation must have a positive influence on the internal stakeholder. All factors from the conceptual model play a significant role for how the internal stakeholder perceive quality of digital innovations. The organization and their

managers have an important role of enabling the appropriate education, training, knowledge sharing, and resources to make the internal stakeholders interested and comfortable with the digital innovations. These foundational activities play a crucial part of making the internal stakeholder perceive quality and understand how these digital innovations can benefit them.

6.2   Future Research

The findings of the empirical data presented interesting aspects which could have been explored and followed up even further, however, since these aspects did not fit within the scope of this study it was not elaborated deeper. Interesting aspects possibly applicable for future research could include the aspect of success measurements of digital innovations. A few of the interviewees pointed out the difficulties of not having appropriate measurements for the digital innovations as a barrier towards adopting digital innovations. As the digital innovations may not present a direct revenue-stream as solid products, there could potential difficulties of how to measure the success of digital innovations. This study implied the importance of preunderstanding the effects of digitalization and to organize the organization to be able to adopt digital innovations, and it could therefore be of interest for future research to explore how to measure the success of digital innovations.

This study presented a conceptual model which visualized which factors to consider when organizations adopt digital innovations. However, this study did not enlighten how these factors should be performed to enable the adoption of digital innovations. For a future study it would be interesting to investigate and explore how these factors should be performed to support the adoption. As an example, the strategic position of the case company was proven to influence the adoption of digital innovations. For a future study there could be several areas in connection to strategy which could be possible research topics. One suggestion could be to explore how to transform a manufacturing company's business model to fit digital innovations.

As this study explored adoption of innovations within the manufacturing industry, the discovered influencing factors could potentially vary between different industries. To increase the generalizability of the conceptual model, the research on adoption of digital innovations is suggested to be performed in other industries. For future research it would be interesting to explore how the influencing factors on adoption of digital innovations differs between industries and use these findings to create a conceptual model applicable for all organizations.

Example of future research questions could include:
- How could the success of digital innovations be measured?
- How to transform a traditional business model to fit digital innovations within a manufacturing company?
- What similarities and differences can be found between influencing factors towards adoption of digital innovations when comparing the manufacturing industry and other industries?

After completing this study and looking back there is always aspects which could have been performed better. This study focused on interviewing individuals one on one. It was planned from the beginning to also perform interviews through focus groups, however, the timeframe of this study was limited and there was not enough time to perform focus groups. For a future study, we suggest performing focus group in addition to individual interviews. Focus groups is good since it allows the interviewer to analyze behaviors within a group, how individuals interact towards each

other and to get a sense of the group dynamic. This study could have benefited from performing focus group interviews since it would have given another level of perspective on the interviewees and their opinions regarding adoption of digital innovations. Focus groups would also allowed to interview more internal stakeholders which would have resulted in even more relevant information regarding adoption digital innovations.

This study followed a qualitative approach which means that the result of the study is completely dependent on the information given in the interviews. For a future study the spread of the interviews could be improved to possible gain more relevant information. The distribution of men and women in the interviews could be improved since it was only possible in this study to interview one woman. For a future study the perspective from both men and woman is considered important since it strengthens the quality of the study, and it could possibly contribute with interest information. For a future study it would also be interesting to have a wider spread between the interviewees in terms of their roles in the organization since it could potentially reveal patterns among the internal stakeholders regarding adoption of digital innovations.

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8 Appendix

Interview template

Introductory questions

- o What is your job title and for how long have you been working at the case company?
- o Do you mind describing your background? Where you grow up, lived, worked with, age, cultures you've experienced?
- o What are your daily work assignments at the case company?

General questions

- o Can you describe something you find challenging about your work?
- o What motivates you at work?
- o Can you describe your three biggest goals of your work?
- o What do you think about collaboration?
- o How does the case company support you?
- o What's your thoughts about change?
- o Are you encouraged and supported by your leader to develop in your position/how do you encourage your employees?

Digital innovations

- o How would you consider yourself to be in tech-savviness?
- o What do you think about digitalization and the use of digital innovations?
- o Do you think that the case company need to be digitalized?
- o Do you need digital innovations in your daily work?
- o Do you feel comfortable in using the digital innovations what kind of activities would you need from the case company to feel comfortable?
- o Do you consider that you have the appropriate information, skills, and knowledge about digital market offerings, and do you have the possibility to influence your education?
- o Do you feel comfortable in selling a digital innovation? Why/why not?
- o From your perspective, could you describe any digital initiatives where the case company has failed?
- o From your perspective, could you describe any digital initiatives where the case company has succeeded?

- What do you think about the on-going digitalization journey at the case company?
- Do you there is the digital strategy and goals, and if that could you describe them?

Perceived quality

- How would you describe value?
- What kind of attributes do you consider important in a digital innovation?
- Do you know what your customer wants or need?

Concluding questions

- If you get to share one thing, what would you like to change about the view of digital innovations in the case company?
- Anything else you want to share regarding this topic?
- Is there someone else within the case company that you think we should interview?
- Would it be alright if we contact you again if further questions arise?