



Strategic changes in Norwegian technology firms due to covid-19

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Preface

This thesis has been written as the final work of a five-year MSc in Business Administration, with a specialization in Strategic Marketing and Analytics, at the University of Stavanger Business School. It has been a challenging, interesting, and educational journey. There has been considerable hours of frustration, doubt, and despair. However, the opportunity to explore such a timely topic as the impact of covid-19 in the technology sector has been a beacon of motivation through the most troublesome hours during the research. There are still many questions unanswered to explore when it comes to the possible aftermath of covid-19, and I hope this thesis will shed some light on what the effects have been. Furthermore, I hope the thesis will inspire others to further explore how covid-19 has caused changes in daily work, organizations, and society.

There is no doubt that this thesis would not have been possible without contributions from some essential people, and organizations. I gratefully acknowledge the help of the contributing organizations (that will remain anonymized in this thesis along with the informants) that has given access to their resources, key workers, and top management. Additionally, I would like to extend a sincere thanks to the respondents who took their time during these trying covid-19 times to be interviewed. I was deeply impressed by the insight and knowledge the respondents shared and contributed with. Your openness and enthusiasm have made this thesis to be as great as possible. Finally, I would like to express my appreciation to my supervisor, professor Bjarte Ravndal. With your encouragement, you helped navigate the direction and quality of the thesis.

Stavanger, 2021

Daniel André Bjørnstøl Hamre

Abstract

The theme for this thesis is digitalization because of covid-19 in the technology sector. Digitalization is used about the process towards a more digital world and means that new technology is used and changes the businesses with the aim of seizing new value-creating opportunities. According to several researchers, it is therefore strategy, and not technology, that drives digital transformation. Digitalization is expected to have a particularly large effect on the technology industry, as digital solutions is mainly thought to come from this sector. How covid-19 has affected society is still uncertain, and a large proportion of the research literature in the area consists of conceptual articles that only speculate on how covid-19 has contributed to digitalization. Furthermore, research on covid-19 is mainly focused on the implications for the education sector and the healthcare sector. Thus, there is limited research on how the pandemic has affected the technology companies and what implications this will have regarding digitalization. The master's thesis helps to close this research gap through the following research question: *“Which strategic assessments do technology firms make regarding digitalization due to covid-19, and why?”* To understand the firms’ strategic assessments, relevant literature in the field of strategy, institutional theory, and social capital will provide the theoretical framework for the thesis. Furthermore, it has also been chosen to include theory about psychological contracts and research literature that sheds light on the social dimension of the technology sector. To answer the research question, a qualitative approach with a phenomenological research design has been used. The sample has consisted of three informants in the top management of small and medium-sized (SMEs) technology companies located in different parts of the country that mainly have customers in the B2B market. Additionally, informants from top management in three large established technology companies that serve customers in both the B2B market, and the private market were used to get access to data that can be used on the technology sector for transferable results, which in turn can be utilized in future studies of the technology sector. Primary data were collected through six semi-structured interviews, where all the interviews were conducted through video conferences. The quality of the analysis is discussed based on the concepts of reliability, validity, and ethics.

An important finding is that few of the companies, by definition, have a formalized strategy regarding digitalization. Nevertheless, the large established companies have a conscious relationship with digitalization and have largely incorporated the ideas regarding digital solutions

into their overall strategy. Furthermore, SMEs in the technology sector have employees with high competence (human capital), and even though they do not have a formalized digital strategy, the organization within the company have clear expectations of what is to be done and not in terms of digitalization. Therefore, the empirical data in the study suggest that SMEs use a reactive strategic approach to digitalization, while large established companies use an active strategic approach. The SME's approach does not necessarily correspond to a passive attitude towards digitalization and is referred to in the literature as a strategy under the name "Active Wating".

Consequently, the study concludes that there have been some significant changes in the technology sector because of covid-19. First and foremost, the technology sector has had a revolution when it comes to communication across time and distances because of utilization of video conference, which has reduced traveling expenses and more efficient work conditions. Furthermore, the work force in both SMEs and large established firms have adopted digital tools and systems in their daily work life, which in turn has been adapted because of covid-19. This is believed to continue as the society opens again, but with more of a hybrid solution with some physical meetings. Thus, the technology sectors approach to digitalization has changed because of covid-19. Secondly, firms in the technology sector have had an increase in customer leads because of the pandemic, which in turn has given them more to do, and several firms is thinking on expanding (both SMEs and large established firms).

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1. Introduction

According to WTO (2020) the COVID-19 pandemic is a public health crisis, that has been a catalyst for economic, social, and behavioural changes. The actions to suppress the spread of COVID-19 are expected to accelerate the adaptation of digital platforms and technologies significantly (Trade Organization, 2020). Fung & Marquardt (2020) noted that “*the dramatic expansion of teleworking by US schools, businesses and government agencies in response to the coronavirus is raising fresh questions about the capacity and security of the tools many Americans use to connect to vital workplace systems and data*” (Fung & Marquardt, 2020). This observation has also been done in several other countries around the world (Donthu & Gustafsson, 2020; Frøberg, 2020; Guyot & Sawhill, 2020; Lavelle, 2020; Trade Organization, 2020). As Covid-19 forced lockdowns in countries around the world, the global economy and all industries and service sectors from healthcare, retail, manufacturing, travel, etc were affected. The rapid changes in the society forced organizational changes in businesses and a need to adapt to the new conditions to stay in business (Ivanov, 2020). According to Brammer, Branicki & Linnenluecke (2020), the pandemic has required extensive transformation, which is likely to influence the everyday life for the conceivable future; both in the way people interact in their daily routine lives, as well as in their workplace (Brammer, Branicki, & Linnenluecke, 2020; Donthu & Gustafsson, 2020; Whitelaw, Mamas, Topol, & Van Spall, 2020).

Amongst some of the most dramatic actions from the world’s governments were to force businesses to close, others were forced to strictly reduce operations, or totally rethink their business models to adapt to “*new normal*” of the pandemic (Donthu & Gustafsson, 2020; Ivanov, 2020; KPMG, 2020; Nash, 2020). Other organizations that could continue were forced to adopt new ways of remotely working, utilizing new systems for communication, and altered practices to meet social distancing requirements and changed work patterns (Ardito, Coccia, & Messeni Petruzzelli, 2021; Azoulay & Jones, 2020; Golinelli et al., 2020; Soto-Acosta, 2020). Companies, public service organizations, and governments have tried to provide services to their stakeholders through vast use and rapid deployment of technology applications and cloud-based infrastructure (Kodama, 2020; Sævdold & Jørgenrud, 2020; SSB, 2021). According to Agrawal, Dutta, Kelly, & Millán (2021), businesses that had implemented technological solutions, and early adapters of industry 4.0 had a competitive

advantaged when the pandemic broke out. Due to technological investments and digital solutions their operations were able to keep running (Agrawal, Dutta, Kelly, & Millán, 2021).

Digitalization is a phenomenon that has been widely discussed over several decades in media and society in general. A recurring definition of the concept is that analogue systems switch to digital systems (Gobble, 2018). In this study, the concept is more complex and does not just include new technology that the outside world directly will embrace and adapt to. Digital tools and solutions have always been around, though not received attention at a comprehensive level and thus, the concept needs to be explained further. According to Almeida, Duarte Santos, Augusto Monteiro (2020), digitalization can be defined as “*a process of a fusion of technologies and different systems*”. This process, or phenomenon, needs an initiating event to initiate a merger and give society an aim to adapt to the new technology. The ongoing pandemic, COVID-19, has forced organizations to implement digital solutions to match society's needs and may be the beginning of a digital revolution (Donthu & Gustafsson, 2020).

Naudé (2020) explain how companies fulfil different purposes in society and has different conditions for dealing with changes dependent on the environment outside the business. According to Naudé (2020), small businesses, and start-ups, has been a key to economic growth and a catalyst for innovation. Many previous studies address the negative aspects of SMEs (Small and medium sized businesses) during the pandemic (Almeida, Duarte Santos, & Augusto Monteiro, 2020; Sedláček & Sterk, 2020). Sedlacek & Sterk (2020) and Naudé (2020) argue that SMEs have a harder time surviving and growing into successful businesses in comparison with established organizations and businesses. Furthermore, they argue that small businesses are constantly affected by financial difficulties as well as lack of resources due to the social distancing which slows down the innovative processes (Naudé, 2020; Sedláček & Sterk, 2020). Thus, it is assumed to affect the ability to adapt to changes, for instance, the covid-19 pandemic. Furthermore, Sedlacek and Sterk (2020) believe that SMEs will be among the most negatively impacted corporate types of the current pandemic. Furthermore, Sedlacek and Sterk (2020) argues that large established companies, have had more time to build up a stable economy that creates better conditions for managing and adapting to pandemic.

1.1 Research aim and relevance

The purpose of the thesis is to study the phenomenon of digitalization due to covid-19 with the IT and innovation industry as a contextual background. The motivation for writing about digitalization due to covid-19 in the IT/innovation industry is based on personal interest in the topic and the industry, as well as the fact that digitalization and covid-19 is relevant during the period which this thesis is written (spring 2021). This thesis will have the following research question to study the phenomenon:

Which strategic assessments do technology firms make regarding digitalization due to covid-19, and why?

Covid-19 is expected to change and normalize the use of digital technologies (Carroll & Conboy, 2020; Guyot & Sawhill, 2020) for education, social interactions, healthcare services, business operations, religious activities, and interaction with the government (Islam, 2020). As all citizens, employees, students, and both public- and private-sector organizations are forced to adapt to alternate ways of performing actions, technology and how to use technology is accepted to become more important. The process of adopting to the new normal for businesses in view of digitalization and how decisions regarding adopting digital tools are meant to meet a temporary requirement or seeking more long-term solutions. Thus, this thesis will answer the research question by answering the following sub-questions:

Q1: Has the companies' approach to digitalization changed because of covid-19?

Q2: Do companies follow an explicit strategy regarding digitalization because of covid-19?

Q3: To what extent do companies experience a digitalization pressure and how do companies predict that digital change can create a future competitive advantage?

Q4: Are there differences in experienced pressure for digitalization in small to medium sized firms compared to large firms due to covid-19?

Q5: How has customer relations changed due to digitalization and covid-19?

Through the first research question, the study will examine whether companies feel a changed approach to digitalization because of covid-19. Question two will assess whether an explicit strategy has been prepared regarding digitalization in the company. That something is explicit means that it is clearly and distinctly formulated. In cases where the companies do not have an established strategy, it is plausible that the companies have some idea of how they plan to deal with digitalization in its industry. The companies' focus on strategy is likely affected by how much digital pressure they experience and how comprehensive changes that has occurred because of covid-19. Through the third research question, the study will investigate how the companies perceives and responds to expectations in its external environment, in addition to how the companies predict that digital change can create competitive advantages in their environments. Covid-19 has wrought changes and can thus be a factor for the companies view on both experienced pressure and the view on digital change. The last sub question is regarding changes in customer relationships both due to covid-19 and digitalization. As explained in the introduction there has been changes in the means companies can communicate both internally and externally, which in turn might have changed the traditional physical meetings. Thus, customer relations might have been affected.

2. Theory

This chapter will enlighten and elaborate relevant research to create a theoretical framework that will be used to highlight various critical elements of the question in the thesis. Section 2.1 gives a brief overview of the impact the covid-19 has had on global society, and how the pandemic has changed the external environment for organisations. Section 2.2 elaborates on digitalization, which according to literature has been an important factor for economic growth the last decade and might increase the coming years. Section 2.3 presents an overview of some literature on innovation and technologies that businesses can utilize to improve performance, enhance operations efficiency, and create or sustain competitive advantages. Section 2.4 gives an overview of selected literature on strategy and digital strategy. In section 2.5 Institutional theory are presented, with some elaboration on isomorphism. Furthermore, section 2.6 presents theory on responses to institutional pressure, and section 2.7 theory on social capital. The end of the chapter will be summarized in section 2.8.

2.1 Impact of Covid-19

The coronavirus that causes the disease covid-19 appeared in early 2020 and has significantly changed global society. The implementation of social distancing, lockdowns, and actions in response to the COVID-19 pandemic has led consumers to online shopping and use of social media and of other means of digital communication at a higher rate than before (Frøberg, 2020; SSB, 2021). Online e-commerce platforms have registered significant growth since the start of the pandemic. For instance, Amazon, (US-based e-commerce company) announced revenues of US\$ 75 billion, averaging US\$ 33 million an hour (Klebnikov, 2020; Semules, 2020). According to SSB (2020) and NHO (2021), online shopping increased by 36% in Norway (Frøberg, 2020; NHO, 2021).

According to WTO (2020), digital payments has helped people to avoid potential COVID-19 infection while keeping the economy ongoing (Trade Organization, 2020). For example, several retail stores have adopted several forms of digital payment systems as a means of transaction, and 72 per cent of the transactions made in Norway were cashless in 2020 (Redaksjonen, 2020). The

adaptation of cashless transactions has been accelerated due to COVID-19 (Manchiraju & Karthik, 2020).

Some small businesses have been able to adopt digital technologies hastily, which has gained them a competitive advantage (Naudé, 2020). Governments has also put in place measures to help businesses innovate and adopt digital technologies to strengthen their resilience against economic disruptions. In Norway, the Ministry of Information and Communications Technology and several other ministries has called to develop digital solutions in the fight against COVID-19 to support health systems, public service delivery and other sectors (Regjeringen, 2020, 2021).

Driven by social distancing and stay-at-home requirements, digital services that can be delivered electronically have increased. An average of 40 per cent of workers in the European Union and the United States have worked from home due to the pandemic (Trade Organization, 2020). Levels of remote work have significantly increased in sectors such as IT services, professional and business services, and financial activities (Hensvik, Le Barbanchon, & Rathelot, 2020). According to Almeida, Santos, and Monteiro (2020), this has created a larger gap between organizations and people. Furthermore, Almeida, Santos, and Monteiro (2020) believe that smaller companies do not have the same resources to cope with changes as larger companies and organisations. At the same time, Soto-Acosta (2020) believes that covid-19 is a catalyst for the creation of start-ups and that they can meet the needs society demands. Both established companies and start-ups work towards the same goal though the roads there may differ.

Moreover, marketing, data collection and sales are another aspect of change due to covid-19 and Papadopoulos et al. (2020) believe that the pandemic has led to increased e-commerce because of governmental restrictions, as for instance restricting people of moving outdoors. In addition, a new digitalized market for marketing is created where the internet is used to reach a wider and larger customer group (Almeida et al., 2020). An outcome of covid-19 has, as previously mentioned contributed to a large increase in e-commerce, which creates new initiatives for organizations to use digital marketing (Almeida et al., 2020). With a growing market and e-commerce, the challenge of data collection for organizations which organizations today would not be able to manage without digitalized technology (Kagermann, 2015; Papadopoulos, Baltas, & Balta, 2020).

2.2 Digitalization

By searching “*Digitalization*” on google scholar you get approximately 360 000 hits in about 0.05 seconds, which might give an indication that it is a highly relevant and “*trendy*” word. Previous literature proposes several different definitions to explain digitalization. According to Kagermann (2014) digitalization is about how information and communication technology connect the real and virtual world, by creating a network between people and things. Gartner group (2021) offers a more business-oriented definition and explains digitalization as “... *the use of digital technologies to change a business and provide new revenue and value-producing opportunities; it is the process of moving to digital business*”, which indicates continues steps towards a fully digital business (Gartner Group, 2021). Andersen and Sannes (2017) describe how IT has gone from being a support tool to become a part of the company's DNA “... *it means that business model and practice as well organization and processes are designed to take advantage of today's and tomorrow's technology*”. This elaborates the fact that today digital technology is so widespread that we can communicate, store, and make calculations regardless of time and place. The western society also have access to an enormous capacity and capability at an ever-lower cost. When firms systematically take advantage of such opportunities, it is possible to create a digital organization (Andersen & Sannes, 2017; Verhoef et al., 2021). According to Almeida, Santos & Monteiro (2020), digitalization is not a new phenomenon but conditions that are associated with digitalization is constantly changing. Nagel (2020) explains that companies have had to adapt and implement technology to some extent in everyday work. According to Papadopoulos (2020), companies that lack the ability to adjust to the digital transformation, risk losing competitive advantages due to lack of legitimacy and flexibility.

Digitalization as a phenomenon that has the potential to change society and organizations in its entirety (Nagel, 2020; Papadopoulos et al., 2020; Parviainen, Tihinen, Kääriäinen, & Teppola, 2017). Nwankpa & Roumanis (2016) explain that in a time noticeable by large and continuous changes, it is important that companies keep up with digital innovations and the opportunities they present. Furthermore, they argue that digital transformation driven and shaped by new technologies, involves the increasing use of big data, analytics, clouds, mobile devices, and social platforms. Digitalization for organizations is therefore also about new types of information is being used (Nwankpa & Roumani, 2016; Vial, 2019).

According to Barua et al. (2004) all companies are different and will consequently have different prerequisites for succeed with digitalization. This is also supported by BarNir et al. (2003), who claim that the effects of digitalization can be completely different between companies and industries. Hannan & Freeman (1984) argues that small companies experience a lower degree of organizational inertia and is therefore more likely to change their processes and structures. Larger companies are considered to have less flexibility, nevertheless, are still believed to be more likely to engage in digitalization than small companies. This might be explained by several factors, like the fact that larger companies already have established procedures for how to handle change, or that management is more experienced (BarNir, Gallagher, & Auger, 2003; Sannes & Andersen, 2017; Soto-Acosta, 2020; Vial, 2019). Another important explanation is that the smaller companies are not as resourceful as the larger companies (Aceto, Persico, & Pescape, 2019; Barua, Konana, Whinston, & Yin, 2004). Some researchers therefore believe that it is more difficult for small businesses to digitize than it is for larger companies (BarNir et al., 2003; Hirt & Willmott, 2014). Hirt & Willmott (2014) argues that smaller companies probably do not experience an equal amount of digital pressure from their customers and may therefore have difficulty justifying the costs associated with digitalization.

The pandemic has forced organizations to implement digital solutions to match society's needs and companies that fail with this adaptation are thus facing a greater risk of becoming obsolete (Fletcher & Griffiths, 2020). Almeida, Santos, and Monteiro (2020) argue that regardless of previous work and experience in digitalization, companies have been forced by the pandemic to take this digitalization more serious as customer needs has changed. Furthermore, they believe that a key question is whether organizations are prepared for an acceleration in digitalization during and after the pandemic or not. Fletcher and Griffin (2020) explain how current companies have not matured enough to adapt to a digitalized world of work. Previous statistics have analysed a lack of ability and competence to work digitally for a longer period (Fletcher & Griffiths, 2020). Additionally, Almeida, Santos, and Monteiro (2020) discuss that although companies have previously worked towards digitalization, they are not fully prepared for the challenges the phenomenon may present. Digitalization requires restructuring within the organization to meet customer requirements. Digitalization for organisations will be a long-lasting process and at the stage the world is in now it is important to start thinking about society after covid-19 and how companies can turn the

challenges they face into opportunities after the pandemic (Almeida et al., 2020; Fletcher & Griffiths, 2020).

During the pandemic, digital technologies have made our lives easier and at the same time given companies a chance to continue implementing digital technology to gain a competitive advantage (Soto-Acosta, 2020). Almeida, Santos and Monteiro (2020) believe that technological challenges have increased significantly with covid-19. This has led to digitalization accelerated both within organizations and among private individuals. Organizations need to be prepared and open to innovation to benefit from this process. Soto-Acosta (2020) uses digital economics to provide an understanding of why organizations need to adapt to the rapid changes in society. The use of the internet has increased by 60% from December 2019 to May 2020. At the same time, video conferencing increased by 120% in the same period. Soto-Acosta (2020) argues that organizations are forced to adapt digitalization to avoid an economic collapse. The question of this trend is going to continue after covid-19 depends on how society chooses to define technology as a role in our lives (Almeida et al., 2020; Soto-Acosta, 2020).

2.3 Overview of technologies for businesses to utilize and diffusion of innovation

According to literature on diffusion, the research is split into in two main streams (Arthur, 1996; Katz & Shapiro, 1986; Kwon & Zmud, 1987; Rosenberg, 1982; Tornatzky & Klein, 1982; Van de Ven, 1993). The literature of diffusion of innovation is largely inspired by the work of Rogers (1962; 1983) and shed light on how innovations are spread across a population of potential adopters over time. Furthermore, the literature attempts to explain how this knowledge can be applied in an organizational context, in other words who the innovation can add value to the organization. The other perspective is the inherent economic value the innovation adds to potential adopters (Arthur, 1996; Katz & Shapiro, 1986; Rosenberg, 1982). According to the literature, the value is dependent on both the size of the existing network of adopters and the potential network of adopters (Arthur, 1996; Katz & Shapiro, 1986; Rosenberg, 1982).

According to Rogers (1962, 1963), the innovation process is seen as a process of social communication, where potential adopters become aware of the innovation and consider whether to

adopt it or not. In the classical diffusion theory, a central research theme has been to identify and examine attributes of innovations and their influence on the decision to adopt. According to Rogers (1962, 1995), there are five generic innovation characteristics:

1. Relative Advantage
2. Compatibility
3. Complexity
4. Trialability
5. Observability

Other studies, such as Tornatzky & Klein (1982), has simply discovered *relative advantage* and *complexity* to be regularly connected to adoption. According to Finchman & Kemerer (1993), other researchers has suggested further attributes that in the majority of the cases were mapped to one of Rogers five attributes. Largely, most studies either use or build upon the five attributes identified by Rogers (1962, 1995) (Fichman & Kemerer, 1993; Hovav, Patnayakuni, & Schuff, 2004; Rogers, 1962, 1995).

Furthermore, later research has applied the similar five attributes to adoption decisions in organizational contexts as Rogers' (1962; 1983) meta-analysis, which was based on studies of adoption by individuals (Van de Ven, 1993). According to Finchman & Kemerer (1993), the attributes of an innovation has many of the same adoption decisions in both individually as well as in an organizational context and the innovation's successive use in organizations (Eveland & Tornatzky, 1990; Van de Ven, 1993).

In the process of digitalization, adaptation of technology plays an essential role (Fitzgerald, Kruschwitz, Bonnet, & Welch, 2013; Kagermann, 2015). According to Kagermann (2015), the fast-growing application and adaptation of digital tools is changing the world and will be the main driving force for economic growth in the future. Today there are numerous new technologies that will have a major impact on digitalization. According to Almeida et al. (2020), many of these new technologies have remained unseen and the adaptation of these technologies are expected to have great relevance on organisations during the pandemic. According to literature on technology

management adopting these technologies can help businesses to prepare competing in the fourth industrial revolution (also named Industry 4.0) (Aceto et al., 2019), and for survival in the current turmoil in the economic and business environment due to covid-19 (Almeida et al., 2020; Soto-Acosta, 2020).

2.3.1 Internet and the world wide web

The Internet is the foundation of the industry 4.0 paradigm, as other technologies is dependent on the infrastructure of the digital communication infrastructure. The Internet enables for interaction between humans and machines in industry 4.0 through global addressing and universal communication service across distances (Akpan, Udoh, & Adebisi, 2020; Lee & Knight, 2005). Trough the development of ethernet based network and wireless networks in digital communication an emergence of deceives linked to the internet has exponentially increased and is often referred to as IoT (internet of things) (Wollschlaeger, Sauter, & Jasperneite, 2017). Equally, the production of mobile personal communications and the development of wireless local area network (WLAN) has created a lower cost to connecting mobile devices to the Internet (Akpan et al., 2020; Wollschlaeger et al., 2017). IPV4 (Internet protocol version 4) have had an insufficient number of publicly routable addresses to provide a distinct address to every internet device or service (Xu, Xu, & Li, 2018). As more and more devices are connected to the internet, the need of a new protocol version has arisen (Xu et al., 2018). Thus, Industry 4.0 has powered the migration to Internet Protocol Version 6 (IPV6) from IPV4 since there has been an exponential need to identify and provide unique internet addresses for billions of cyber-physical devices and systems. Consequently, there would be no Industry 4.0 paradigm without the Internet, as all the tools and devices connected to the internet are enabled to communicate together instead of acting as standalone pieces. Hence, providing immense opportunities provided by integration and interaction.

2.3.2 Industrial Internet of things (IIoT)

According to Sadiku et al. (2017), Industrial Internet of Things (IIoT) is the explicit application of Internet of Things to Industry 4.0. Moreover, Wortmann and Flüchter (2015) and Ande et. al (2020) argues that Industrial Internet of Things refers to the connections of machines, computers, and people enabling intelligent industrial operations for transformational business outcomes. Industrial

Internet of Things can simply put be explained as sensor equipped industrial machines connected to Internet technologies with other devices for monitoring, analysis, and management (Ande, Adebisi, Hammoudeh, & Saleem, 2020; Gilchrist, 2016; Lasi, Fettke, Kemper, Feld, & Hoffmann, 2014; Wortmann & Flüchter, 2015). The application of IIoT will have huge implications for technology, business organizations, and markets. There are different opportunities and benefits such as closed loop design, increased consumer value, predictive maintenance, new service lines, and reduced labour cost (Akpan et al., 2020; Gilchrist, 2016; Wortmann & Flüchter, 2015). IIoT technologies have created opportunities for individuals to work while affecting the pandemic worldwide (Akpan et al., 2020; Ardito et al., 2021; Hensvik et al., 2020; Nagel, 2020; Soto-Acosta, 2020). The opportunity to communicate, store information and offer new services to customers has emerged and might be vital under the conditions created by the pandemic (Soto-Acosta, 2020).

2.3.3 Cloud computing

According to Marston, Li, Bandyopadhyay, Zhang & Ghalsasi (2011), has major potential to help businesses by enabling leasing of computing resources in real-time. Marston et., al (2011) define Cloud computing as:

“... an information technology service model where computing services (both hardware and software) are delivered on-demand to customers over a network in a self-service fashion, independent of device and location. The resources required to provide the requisite quality-of-service levels are shared, dynamically scalable, rapidly provisioned, virtualized and released with minimal service provider interaction. Users pay for the service as an operating expense without incurring any significant initial capital expenditure, with the cloud services employing a metering system that divides the computing resource in appropriate blocks.” (Marston, Li, Bandyopadhyay, Zhang, & Ghalsasi, 2011, p. 177)

For businesses cloud computing can help simplify operation, does not require a careful estimate of needed resources, and opens for pay-per-use billing on a short-term basis, without upfront commitment (Aceto et al., 2019; Vasiljeva, Shaikhulina, & Kreslins, 2017). Thames and Schaefer (2016) present several methods to leverage cloud computing flexibility to increase dynamism and efficiency in organisations. This might increase resource utilization, allowing for economies of scale and reduce costs (Gantz & Reinsel, 2011; Najafabadi et al., 2015; Peppard & Ward, 2016;

Sultan, 2014). According to Sultan (2014), the main drivers for adapting cloud computing technology include cost-saving, seamless implementation, and simplification for businesses and customers.

2.3.4 Big data analytics

Big data analytics can interpret trends and bring understanding to the purchasing process by simply looking at what customers are buying, where they are buying it, and what they have purchased in the past. Those data, combined with other public data such as census, meteorological, and social networking data create a unique capability that service the customer and the business when it is utilized (Ohlhorst, 2012). Smart product-related information, from IoT, is the new source of big data that is specific to Industry 4.0. The analysis of data has already fuel innovative and customer centric, post-sale services, and provided feedback for better product design and marketing for companies like Amazon, Google, Microsoft, Apple, Alibaba, etc (Najafabadi et al., 2015; Ohlhorst, 2012). As businesses face global competition, big data analytics should be a priority for firms as data mining and business intelligence can give a competitive advantage (Gantz & Reinsel, 2011). Additional benefits of big data include more precise control, continues process improvement practice, and cyber-physical systems to predict and visualise analytics to help decision makers in complex business decisions in a challenging and intricate business environment (Gantz & Reinsel, 2011).

2.3.5 Artificial Intelligence

Artificial Intelligence, by many just referred to as “AI”, involves deep learning, reasoning, and self-correction (Najafabadi et al., 2015; Nash, 2020). Artificial Intelligence can be defined as IT applications that can sense, understand, act and learning, and is expected to have a major impact on all aspects of society (Chui, Manyika, & Miremadi, 2017; Fölster, 2018; Frey & Osborne, 2017). AI can be used to automate, support, and improve or solve tasks that humans previously have lacked the ability to solve. The automation of human work tasks has gotten most of the attention of the possibilities AI offer, with driverless cars, robotization of journalists, customer service staff, caseworkers, and stockbrokers as some examples (Nash, 2020). According to Frey and Osborne (2017), 47 per cent of the jobs in America has more than a 75 per cent probability of being

performed by computers, understood as a combination of artificial intelligence and mobile robotics, in relatively close future. A study based on similar methodology estimates that 33 per cent of today's jobs in Norway have a high probability of automation (Fölster, 2018). Additionally, a recent McKinsey study estimates the automation potential of today's technology 42.4 percent in Norway (Chui et al., 2017).

2.4 Strategy

Strategy is a word with a wide range of meaning and different definitions. According to de Wit (2017), there are no such thing like a common understanding and a sharp definition in the area of strategy. Johnson, Whittington, Scholes, Angwin, & Regnér (2014) understand the concept as “*the long-term direction of an organisation*”, whereas Porter (1996) addresses strategy as “... *deliberately choosing a different set of activities to deliver a unique mix of value*” (Johnson, Whittington, Scholes, Angwin, & Regnér, 2014, p. 4), strategy is therefore something about how to achieve specific goals and create value for its stakeholders in the most profitable and efficient way possible. This is supported by Rothaermel (2018), who explains that strategy is about creating superior value while keeping the costs associated with creating such value under control. Such a combination depends on being able to position the business correctly in relation to the competitors (Rothaermel, 2018). Furthermore, Rothaermel (2018) argues that strategic positioning involves several trade-offs, as an attempt to be “*all things to all people*” is likely to lead to inferior performance. Strategy is therefore just as much about deciding what not to do, as what to do, and should be designed regarding both internal and external conditions (Porter, 1996; Rummelt, 1984). An important part of the strategy is thus to analyse the company's macro environments for opportunities and threats, and the company's internal strengths and weaknesses (de Wit, 2017). However, it is rare that all plans are carried out exactly as they are intended, and new emerging strategies might emerge (Porter, 1985). The company's realized strategies will thus be a function of the intended strategies and emerging strategies (de Wit, 2017).

Minzberg (1987), criticized the assumption that “*any strategy is always better than no strategy*”. He argues this by creating a metaphor taken from the example of the Titanic, and describes, that setting a predetermined course in unknown waters as the perfect way to sail straight into an iceberg.

His point is that sometimes it can be more appropriate to continue without the equivalent of a straitjacket of a clearly planned strategy. As strategy is a concept rooted in stability it might make more sense to choose a more gradual approach that looks carefully, but not too far into the future, so that the organisation is able to readjust quickly (Mintzberg, 1987; Teece, 1984). Mintzberg (1985) also argues that large organisations tend to get stuck in long-term plans and strategies. Consequently, the lack of a clear strategy can sometimes be a necessity, because of the environment in which an organisation is manoeuvring in is having become so dynamic that it would be foolish to assume consistency for a time. Absence of strategy can also simply represent a stage in the transition from an outdated strategy to a new, more viable strategy (Mintzberg, 1987; Mintzberg & Waters, 1985).

According to Bell et al. (2004), the absence of an explicit and formal strategy does not necessarily equal the lacks a strategic vision. Sull (2005) further argues that to survive and prosper in volatile markets, managers can pursue a strategy that involves "*active waiting*". This approach consists of anticipating, preparing for, and seizing opportunities and dealing with treats and appointees as they occur, and is also described by Mintzberg (1985) as "*the entrepreneurial strategy*" (p.260). The choice to "*wait actively*" is often used when leaders cannot predict or control how the future will unfold (Sull, 2005). Focusing on a distant conceivable future might distract management and employees from seeing emerging opportunities and threats and cause the organisation to bet too big and too early on different visions. A clear vision might also trick managers and employees into believing that they live in a predictable world (Sull, 2005). Instead of targeting a well-defined future Sull (2005) describes that "fuzzy" visions, which defines the company's domain and ambitions in the broadest sense can be more profitable. Sull (2005) argues that a fuzzy vision works because it offers direction and a set of ambitions without prematurely locking the company into specific measures. Fuzzy visions are claimed by Sull (2005) to motivate employers to explicitly consider more options and possibilities, because the flexibility built into such visions encourages discussion and closer reflection. This flexibility is especially important in rapidly changing environments (Bell, Crick, & Young, 2004; Mintzberg & Waters, 1985; Sull, 2005). According to Sull (2005), the choice to wait is not necessarily the same as to be passive. Active waiting is more about waiting for the right moment to intervene, as the purpose is to achieve a more effective business strategy when the time is right (Sull, 2005).

2.4.1 Digital Strategy

Information technology has for the past two decades gained increasing strategic importance, which has led more researchers to emphasize the importance of digital strategies (Earley, 2014; Fitzgerald et al., 2013; Kane, Palmer, Phillips, & Kiron, 2015; Peppard & Ward, 2016). According to Peppard and Ward (2016) and Bharadwaj, Sawy, Pavlou, & Venkatraman (2013), digital business strategy is different from traditional IT strategy in the sense that it extends over several functions and different IT-related processes. According to Rai, Pavlou, Im, & Du (2012), digital business strategy also differs from IT strategies in that it depends on rich information exchanges through digital platforms, both inside and outside of the organisation. Digital business strategy is therefore broader, more prominent, more embedded, and further comprehensive than other functional strategies (Bharadwaj, Sawy, Pavlou, & Venkatraman, 2013; Rai, Pavlou, Im, & Du, 2012). According to Westerman (2017), digital strategy is about how a company should benefit from the opportunities new IT-technology provides. Like Kane et.al (2015), Westerman (2017) argues that it is the transformation and the utilization of technology embedded in the organisation itself that should be emphasized, and that too much focus on technology for the sake of technology is unfortunate and can lead to incremental thinking that misses out of opportunities across silos. Instead of focusing on acquiring and implementing the right technology, the focus should rather lie on changing the organisation with a view to maximizing the use of the information that technology creates (Kane et al., 2015; Westerman, 2018). Moreover, Pepper and Ward (2016) emphasize that the organisation need to be organized in such a way that they can leverage the opportunities of the technology, to get a successful digital transformation. Established or mature companies typically explore new digital solutions while continuing their ordinary activities (Andersen & Sannes, 2017; Sannes & Andersen, 2017). This means that new digital operations must be organized and managed in relation to existing business activities (Peppard & Ward, 2016). Additionally, digital strategy is therefore also about understanding the connection between technological change and changed business conditions (Andersen & Sannes, 2017; Peppard & Ward, 2016).

Digitalization also takes many forms, which means that both internal and external conditions must determine factor for what is to be digitalized. This can be internal, for example processes and technologies, or external activities (Peppard & Ward, 2016). Digitalization can therefore be understood to be a complex activity. According to Sannes and Andersen (2017), digital

transformation is highly dependent of support from top management. Design of the digitalization strategy is therefore a responsibility that falls to the management (Sannes & Andersen, 2017). Early (2014) and Andriole (2017) supports this view by arguing that digital success depends on whether the company executives understand the company's problems and challenges, as well as how new technology and working methods can solve and improve current working methods (Andriole, 2017; Earley, 2014).

2.5 Institutional theory

Institutional theory focuses on the relationship between the organization, its environment, and emphasizes the cultural aspects to understand how organizations develop (Scott, 2014). Moreover, the core of institutional theory can be extracted from institutions and organizational field of theory. According to Scott (2014), institutions are variously comprised of “*cultural-cognitive, normative and regulative elements that, together with associated activities and resources, provide stability and meaning to social life*” (p.8). Therefore, institutions can be described as a set of rules, regulations, ideas, understandings, and cultural frameworks that have a certain degree of social presence in a group / or groups. Ultimately, this shapes how and explains why organizations behave one way or another, and their adaptation to external and internal environments (Dacin, Goodstein, & Scott, 2002; Scott, 2014). A basic principle in institutional theory is that several types of mechanisms exert pressure on organizations in an organizational field (Scott, 2014). In society, there can be found a virality of cultural created notions of what a good organization is supposed to be, which changes intact with society (Meyer, 2008; Meyer & Rowan, 1977). This also applies in the technology industry (Peppard & Ward, 2016). Some examples are new demands from stakeholders or changes in the financial situation (Almeida et al., 2020; Fölster, 2018; Golinelli et al., 2020; Meyer & Rowan, 1977; Rai et al., 2012; Selznick, 1996). According to DiMaggio & Powell (1983), organizations will typically try to adapt to this pressure, which leads to “*isomorphism*” or homogenization of organizational structure and practices. Within different organisational fields there will therefore be found great structural similarities (DiMaggio & Powell, 1983). DiMaggio & Powell (1983) distinguish between three forms of isomorphism: *coercive, mimetic, and normative isomorphism*. As normative isomorphism is not a focal point in this thesis, it will not be discussed further.

2.5.1 Coercive isomorphism

Coercive isomorphism is described as both formal and informal pressure from other organisations (DiMaggio & Powell, 1983; Powell & DiMaggio, 1991). The pressure typically comes from resources on which the organization is highly dependent on, which makes the organisation feel compelled to change due to the external pressure. According to Deeds, Mang, & Frandsen (2004) organizations must appear legitimate to survive. Suchman (1995) proposes this definition for legitimacy:

“Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (Suchman, 1995, p. 574).

Legitimacy is consequently something that is assigned by society through their approval and acceptance of the organisation’s actions (Deeds, Mang, & Frandsen, 2004). Furthermore, it also implies that legitimacy is something that can be withdrawn. Oliver (1991) argues that not all institutions depend on legitimacy to the same level of degree, and that legitimacy is a particularly important issue in organizations that are in interconnected fields that are strongly depending on support and resources from other actors. Legitimacy is therefore especially important to technology firms as they are handling data for other firms, people, and organisations.

According to Piccinini et al. (2015) digital technology has changed customer behaviour and interaction between consumers and producers. The study shows that customers to a greater extent use digital tools to compare products and prices and do business on their own terms. This change in interaction between consumer and producer creates greater need for earlier information about products and services (Piccinini, Gregory, & Kolbe, 2015). Other studies similarly show a trend that more companies are experiencing pressure to increase or to initiate their digitalization processes (Agrawal et al., 2021; Brammer et al., 2020; International auditing and Assurance Standards Board, 2016; Nash, 2020; von Leipzig et al., 2017; Westerman, George Calm ejane, Bonnet. Didier, Ferraris, & McAfee, 2011). This pressure originated from customers, employees, or competitors. For instance, in the auditing industry the international auditing and assurance board (2016) argues that clients who use advanced technology to operate their companies and record their financial transactions, may have expectations of other companies to utilizes technology efficiently.

2.5.2 Mimetic isomorphism

According to Powell and DiMaggio (1983), mimetic isomorphism occurs mainly because of uncertainty. Organisations often imitate and emulate their successful competitors when the organisational environment creates uncertainty. The result of a such imitation can be difficult to measure the effect of because it is only possible to be measured indirectly. For instance, leaders might have limited information and insight into what is the optimal level of engagement in digitalization due to the underlying complexity of digital business processes and inherent uncertainty associated with IT strategies. In situations characterized by complexity and uncertainty, managers often use their competitors as a frame of reference in determining their digital strategy (Mol & Birkinshaw, 2009).

2.6 Strategic response to institutional pressure

According to Oliver (1991), institutional theory has not paid sufficient attention to strategic behaviour organizations use in direct response to the institutional processes that affects them. Therefore, she developed a conceptual framework that tries to predict the different strategic answers organizations use when facing institutional pressure. These are respectively *acquiescence*, *compromise*, *avoid*, *defy*, and *manipulate*. Since technology companies depend on appearing legitimate to follow the authorities' rules and regulations, as well as attract customers, strategic answers as avoidance, defy and manipulate will not be discussed further in this thesis. Furthermore, Oliver (1991) argues that acquiescence and compromise strategies is the most likely responses to institutional pressure when environmental uncertainty is high, which is the case in this setting due to the covid-19 pandemic. Environmental uncertainty is defined as by Pfeffer & Salanick (1978) as “*the degree to which future states of the world cannot be anticipated and accurately predicted*” (p.67) and will be understood as such in this thesis. Oliver (1991) explains that when the environmental context is uncertain and unpredictable, an organization will exert greater effort to restore control, or illusion of control, over future organizational outcomes.

2.6.1 Acquiescence

According to Oliver (1991), organizations often accede institutional pressure, although they do so differently. The study distinguishes between three forms of acquiescence: *habit*, *imitation*, and

compliance (Oliver, 1991). Consent in the form of habit refers to unconscious or blind compliance with predetermined rules or values that the organisation takes for granted. In such cases institutional norms have achieved the status of a social fact, making the organization ignorant about the impact of institutional pressure, and thus exclude reacting strategically to the pressure. Under these conditions, organizations repeat actions and practices that historically have been used, common, conventional, or taken for granted in the institutional environment (Oliver, 1991).

Oliver (1991) argues that imitation is consistent with the term mimetic isomorphism and refers to either conscious or unconscious imitation of institutional models, such as successful businesses and getting advice from consulting firms or trade unions (Galaskiewicz & Wasserman, 1989; Powell & DiMaggio, 1991). This is in accordance with Galaskiewicz & Wasserman (1989), which found that in situations characterized by uncertainty, decision-makers imitates other actors in their network and particularly actors that they know and trust.

According to Oliver (1991), *conformity* can be defined as “*conscious obedience to or incorporation of values, norms, or institutional requirements*” (p.153). In contrast with *habit* and *imitation*, *compliance* is considered to be an active choice, whereas an organisation chooses to adhere to institutional pressure with the expectation that it will give the organisation benefits as social approval or support, resources or predictability, therefore it can be said to be a strategical or conscious choice (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Pfeffer & Salancik, 2003). According to Meyer & Rowan (1983), organisations can choose to comply with the external pressure because society's approval increases the legitimacy or stability needed to carry out organizational activities in good faith. Furthermore, organisations may choose to comply with external pressure to reduce the vulnerability and protect the organisation against negative criticism. Organisational acquiescence thus varies with respect to whether the adaptation of the organisation is a conscious action, their awareness of institutional processes, as well as their expectations that compliance will be in their own organisational interests (Meyer & Rowan, 1977; Oliver, 1991).

2.6.2 Compromise

Although consent can be critical for organisations, in the sense that it provides increased legitimacy and social support, some expectations and demands may appear unqualified (Oliver, 1991; Rowan, 1982). According to Rowan (1982), organisations are often confronted with conflicting institutional demands, or experience inconsistencies between institutional expectations and internal organizational goals related to efficiency or autonomy. Under such circumstances, organizations may try to *balance*, *pacify*, or *bargaining* with external actors. From a strategic perspective, Oliver (1991) defines the attempt to use *balance* as a “*tactical response to institutional processes*” (p.153). When organisations choose a balancing strategy, it refers to an adaptation of several complex requirements in response to institutional pressure and expectations. More specifically, balance is the organizational attempt to achieve parity between various stakeholders and internal interests. For instance, when external expectations conflict with internal goals, it is assumed that the organisation's interests are best safeguarded by achieving an acceptable compromise on competing goals and expectations (Oliver, 1991; Pfeffer & Salancik, 1978).

Pacifying tactics, like the balance strategy, involves partial compliance the expectations of one or more stakeholders (Oliver, 1991). An organization that uses a pacifying strategy usually maintains a lower level of resistance to institutional pressure but uses most of its energy to reassure the institutional source that opposes the organization. An example is an organization that is experiencing increased pressure to suspend production of a potentially harmful product. Under this tactic, the organization will continue to produce the product, but will allocate significant financial resources to reshape the product to suit institutional expectations (Oliver, 1991).

Bargaining is a more active form of compromise than pacifying tactics and involves the organisation's efforts to withdraw requirements or expectations from an external stakeholder, or stakeholders (Oliver, 1991). However, a bargaining tactic assumes that there is a possibility to negotiate with the agents that are executing institutional pressure on the organisation. For instance, trade unions want to negotiate with authorities on standards for acceptable services and accountability, while business organisations might negotiate with unions and the consumer to reach an acceptable compromise on appropriate organisational processes or products. All three compromise strategies are employed with the purpose to comply with institutional rules, norms, or

values. In difference to the acquiesces, institutional compliance is only limited, and organisations are more active in promoting their own interests. This might occur because of the expected legitimacy or financial gain is low (Oliver, 1991).

2.7 Social capital

The theory of social capital is built on the idea that social networks provide access to special resources that are valuable to the members of the network. According to Paldam (2000), there are many definitions of social capital. Bourdieu & Wacquant (1992) defines social capital as “... *the sum of the resources, actual or virtual, that accrue to an individual or group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition.*” (p.119). Coleman (1988) argues that social capital is “*a variety of entities with two elements in common: they all consist of some aspect of social structure, and they facilitate certain actions of actors... within the structure*” (p. 98) Consequently, social capital is something that is created and developed through relationships with other people and is a resource everyone in the relationship has equal ownership of (Bourdieu & Wacquant, 1992; Burt, 2000; Coleman, 1988; Paldam, 2000).

According to Cooke & Wills (1999), social capital can improve businesses performance, innovation, and knowledge exploration. Social capital has proved to be useful in studies of individual relationships, and according to Jones & Tylor (2012), has a particularly strong impact on service provider-customer relationships (Burt, 2000; Cooke & Wills, 1999; Jones & Taylor, 2012). Furthermore, Sharma (1997) and Suseno & Pinnington (2018) argues that the reason for this is because service providers are often very socially integrated, as clients often are co-producers of the service product. Additionally, that the value of social capital in organisations is rooted in mutual social relations and trust units, which make it possible to achieve more social and economic benefits (Cooke & Wills, 1999; Sharma & Anurag, 1997). According to Coleman (1990), trust appears to be one of the main factors in relational social capital, which trust must be seen both as a source of and as an effect of social capital (Adler & Kwon, 2002).

Given that each customer relationship has value, companies should therefore be able to benefit from, and add value to create greater economic prosperity (Jones & Taylor, 2012). Several researchers have concluded that social capital has a greater impact on economic growth than human capital, where the latter is an expression of individual knowledge capital (Cooke & Wills, 1999; Nahapiet & Ghoshal, 1998; Paldam, 2000; Suseno & Pinnington, 2018). In other words, the interaction between individuals has a greater significance for financial progress and performance than the individual knowledge and skills (Putnam, 2001). Unlike other forms of capital, social connections such as friendships and commitments are difficult to transfer to other people (Nahapiet & Ghoshal, 1998). Therefore, Coleman (1998) claims that social capital enables outcomes which is not possible to achieve in the absence of social capital. Furthermore, Cohen & Prusak (2001) argue that social connections affect the net income and explain that there are performance differences in businesses due to the companies' ability to create and benefit from social capital. Additionally, they argue that social capital generates economic returns through benefits such as greater knowledge sharing, better understanding of actions resulting from organisational stability, and higher employee loyalty (Cohen & Prusak, 2001).

Therefore, it might not sound surprising that social capital has been linked to strategic decisions (Jansen, Curşeu, Vermeulen, Geurts, & Gibcus, 2011). Previous research in the field of strategy has similarly concluded that both internal and external actors influence strategic decisions (de Wit, 2017; McKenzie, Woolf, van Winkelen, & Morgan, 2009). According to McKenzie et al., (2011), central decision makers use their social links, which make up their social capital, to assess and gather information about the decision-making situation. According to Liberman-Yaconi, Hooper, & Hutchings (2010), smaller organisations spend fewer resources on strategic staff compared to larger companies. Managers in small and medium-sized companies is therefore believed to base their decisions to a greater extent on experience, knowledge, and their social connections (Jansen et al., 2011; Liberman-Yaconi, Hooper, & Hutchings, 2010). Their assessments will therefore largely depend on who they are associated with and who they are interact with during the strategic decision-making process (Cross, Thomas, & Light, 2009; de Wit, 2017; F. Harrison & Pelletier, 1998). Furthermore, by being linked to other actors, decision-makers in small and medium-sized companies will be influenced by the diverse knowledge that originates from these links (Stam & Elfring, 2008). Social links can, for example, be used to identify knowledge gaps within technology

and management, which in turn make it possible to bridge the lack of knowledge and acquire competence within their professional network (Powell, 1998; Wang & Noe, 2010). Similar findings are found in a study by Petrou & Daskalopoulou (2013), which examines the relationship between social capital and innovation in the service sector with entrepreneurs as study objects. They argue that entrepreneurs form specific types of contacts, where they actively and consciously seek information that emphasizes the risks and uncertainties associated with actions such as innovation activities (Petrou & Daskalopoulou, 2013). Petrou & Daskalopoulou (2013) emphasize the aspect of trust in social capital and argues that increased trust should promote the exchange of valuable ideas between partners which in turn will lead to increased innovation.

Decision makers who are influenced by a broader professional network (social capital), defined as the number of actors as actively provides information and influences decisions, can benefit from greater information flows and a deeper understanding of process in which they need to take a decision in (Borgatti, Jones, & Everett, 1998; D. A. Harrison & Klein, 2007; Heavey, Simsek, Roche, & Kelly, 2009; Nebus, 2006). The received information complements or validates the information the decision-maker already has access to (Bonaccio & Dalal, 2006; Winch & Maytorena, 2009). Winch and Maytorena (2009), argues that social connections can be used to validate and compare information, thereby increasing decision-makers' confidence in their decisions. Jansen et al. (2011) on the other hand, emphasize the importance of asking questions about the appropriateness of the decision-makers' of their connections.

Other studies, like Jansen et al. (2011), have concluded that social capital does not produce exclusively positives effects (Coleman, 1990; Gabbay & Leenders, 2001; Gargiulo & Benassi, 1999; Portes, 1998; van Deth & Zmerli, 2010). As mentioned by Portes (1998) “*sociability*” goes both ways, emphasizing the fact that social capital similarly has a “*Dark side*”. According to Coleman (1990), a form of social capital which facilitates certain actions, can be both useless and harmful in some contexts. For instance, common values and strong norms can have a very positive effect on group/team results, but on the other hand, it may limit how open the group is to new information and alternative ways of doing things (Coleman, 1990). Moreover, social capital is argued to becomes a “*social liability*” if the actor’s behaviour is limited and suffers from negative connections in the social structure, for instance if the chance of being promoted is blocked by

others, or that important information is kept back (Gabbay & Leenders, 2001; van Deth & Zmerli, 2010).

2.7.1 Service provider relationships

According to Granovetter (2005), social conditions influence the company's actions through the way they manage the company's information access and exposes them to different types of information. Thus, the social relationship will be of great importance in technology firms, as it typically exists information asymmetry in the service -customer relationship (Granovetter, 2005). Rousseau (1995) defines the psychological contracts as "*individual beliefs, shaped by the organization, regarding terms of an exchange agreement between the individuals and their organization*" (p.9). Psychological contracts build on social exchange theory, which seeks to explain how and why people interact (Cook, Cheshire, Rice, & Nakagawa, 2013). Social exchange theory assumes that people feel obligated to give something back when they themselves receive something, and reverse, which is called reciprocity (Cropanzano & Mitchell, 2005). Additionally, this leads to a mutual obligation or dependence between those involved (Cropanzano & Mitchell, 2005). Psychological contracts therefore state what the parties involved are to contribute with and what they want to get out of the relationship. According to Mikkelsen (2016), psychological contracts are often unspoken, and that the content of the contracts is shaped by statements and conversations. This means that the parties themselves pick up what is expected of them and what they themselves can expect (Mikkelsen, 2016).

Literature on psychological contracts typically distinguishes between transactional and relational contracts (D. M. Rousseau, 2004). The transactional contracts are often characterized by an economic trade-off between the parties (D. M. Rousseau, 2004). Furthermore, these contracts are often limited and are characterized as financial, and can for instance, be about wages. The relational contracts are characterized by the fact that they are often open, dynamic, and subjective (D. M. Rousseau & Parks, 1993), and must therefore be considered to be a specific investment in each customer relationship (Wilson, 1995). Similarly, the relationship between the service provider and the customer is said to consist of both a professional and personal relationship (Pfeffer & Salancik, 2003). According to Pfeffer & Salancik (2003), the professional relationship should be

supplemented with a personal relationship, as the service providers work is based on trust between the provider of technological services and the customer (Liljander & Strandvik, 1995). According to Liljander & Strandvik (1995), the psychological bond reflects the customers' values and preferences and is developed when the customer believes that the service provider is superior to their competitors. Thus, in an indifferent relationship the customer will not feel some real difference between the service providers (Liljander & Strandvik, 1995). When it comes to service providers in the technology sector, it is the customer who generally has the balance of power, which is why the customers view of the relationship is important (Liljander & Strandvik, 1995; Pfeffer & Salancik, 2003).

2.8 Chapter summary

The research model below illustrates a summarized look on how the theoretical framework is built up to answer the research question, and sub questions, of the thesis. The chapter is structured through a discussion of relevant theory related to the five sub questions, as illustrated in the figure 1:

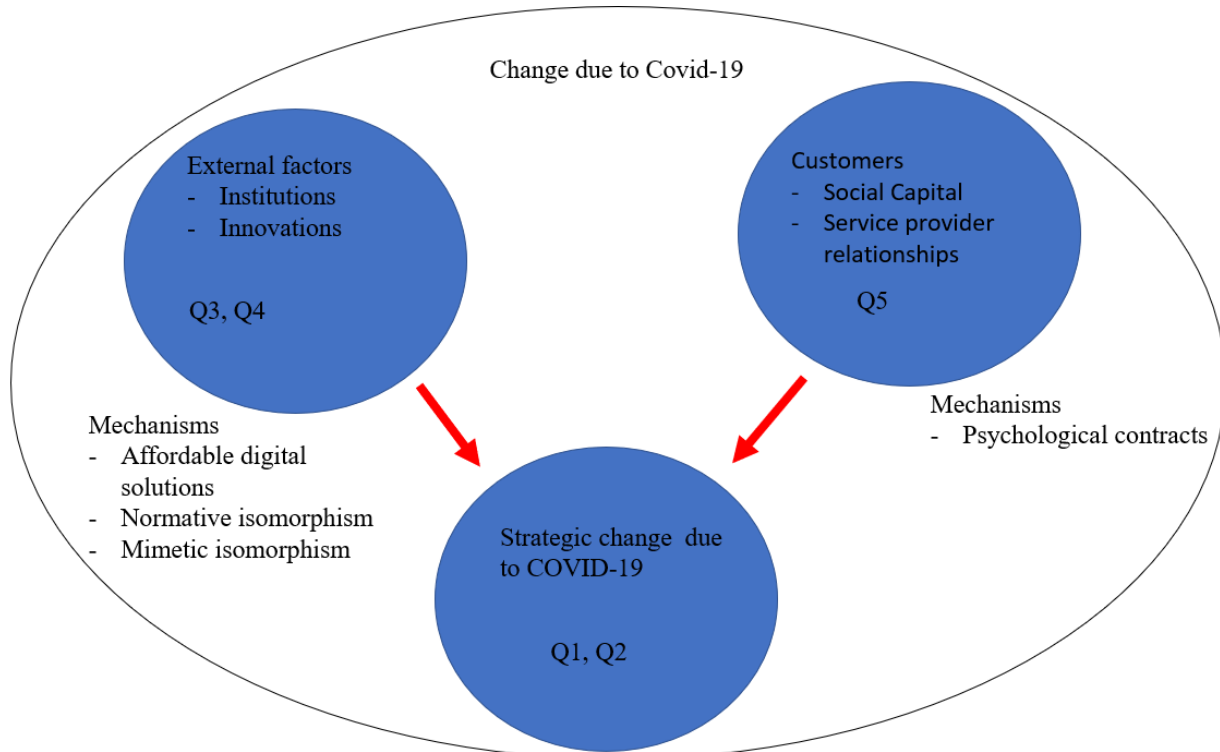


Figure 1 - Interpretation of factors to cause digital change because of covid-19, relation to the research question, and sub questions.

Figure 1 illustrates that sub question 3 and 4 (*“To what extent do companies experience a digitalization pressure and how do companies predict that digital change can create a future competitive advantage?”* and *“Are there differences in experienced pressure for digitalization in small to medium sized firms compared to large firms due to covid-19?”*) are affected by different amount of institutional pressure and have different resources regarding innovations. Furthermore, changes regarding the customer relationship due to the pandemic and the lack of physical meeting might have changed because of the pandemic outbreak. Thus, these differences might have an impact on companies’ strategic changes regarding digitalization because of covid-19, which in turn affect sub question 1 and 2 (Q1: *“Has the companies' approach to digitalization changed because of covid-19?”* and Q2: *“Do companies follow an explicit strategy regarding digitalization because of covid-19?”*). The sum of all factors are in turn believed to give a sufficient explanation of the firms changes regarding change because of covid-19.

To summarize chapter 2, theory regarding the impact of covid-19 were presented to give a brief overview of the challenges that companies, and the public were facing because of the pandemic outbreak. Furthermore, literature on innovation, especially Rogers (1962;63), and different digital solutions that companies can adopt and utilize were presented. Thereafter, theory concerning the concept of digitalization was presented. The reason behind the literature presented is to give the reader deeper insight in what characterizes the technology sector and what is meant by digitalization, as these topics will be consistent for the research questions and consequently for the entire thesis. Additionally, a presentation of relevant theory related to the strategy concept was elaborated to give an understanding which strategic assessments firms in different organizations make regarding digitalization. Furthermore, I chose to include the companies' external and internal environments. External factors that may influence the companies' strategic assessments and are discussed based on institutional theory, while internal conditions are based on presented theory related to social capital and the service provider relationship.

3. Methodology

In this chapter I will review the choice of method, research design, and interview guide. I will also present the data basis in which the thesis is based, and an analysis of the data. Additionally, I will also shed light on the validity of the data collected and finally address the validity and reliability issues. As there is little research in the area before, and the research question and sub questions are complex, I choose to use a qualitative method.

3.1 Research design

According to Ryen (2012), qualitative method is one of several paths to scientific knowledge. The research method is often used when there is little knowledge in the field of research and the researcher search for a deeper understanding in complex matters. The purpose of qualitative research is to understand a phenomenon in their natural setting, or to interpret them based on the significance that people provide them (Ryen, 2012). Additionally, Thagaard (2009) argues that qualitative methods are characterized by a focus on process and meaning, analysis of text, proximity to the informants, and small samples. The method is well suited for studies of topics in which there is little research prior to the researchers' studies, and where there are requirements placed on flexibility and openness during the research (Postholm, 2010; Ryen, 2012; Thagaard, 2009). There are several different directions within the qualitative method that are well suited when there is a need to go in depth and seek knowledge about a firm's changes due to covid-19, and a qualitative method was therefore considered a well-suited method. The objective of using interviews as a research method is to obtain thorough, deep, and descriptive information about the processes in a workplace from the informants' perspective, which could be obscured in a survey or other qualitative data methods (Ryen, 2012). Postholm (2005) argues that the objective is to understand the informants' perspective. This is because the researcher focuses on the participant in his/her natural context. The research will nevertheless be coloured by the researcher's own theoretical point of view therefore transparency is important (Postholm, 2010).

There are many ways to obtain qualitative data such as: interviews, life stories, diary notes, visual analysis of drawings and photographs, memory working group, ethnography, and focus groups (Ryen, 2012). According to Ryen (2012), there are several interview methods, and semi-structured

or semi-structured interviews are the most common form of gathering qualitative research data. It is the understanding of aspects of the informant's daily life that is the purpose of the qualitative research interview (Ryen, 2012). To gain an understanding of the mechanisms in different organisations and differences within small and medium sized organisations compared with large organizations, I wanted a dialogue with the informants to get a better feel of their understanding and situations and what happens in practice, and not just on paper. Such an interview is like the everyday conversation but involves (unlike the professional interview) a specific structure and purpose (Ryen, 2012).

In this thesis an exploratory design has been used. Many of the many path choices was made as the master's thesis was written, as the knowledge gained during the thesis grew significantly. The problem and the sample strategy were adjusted as the project matured to address different nuances of the original problem that could provide relevant information. From a scientific point of view, this can be perceived as a choice that threatens the validity and reliability of research. However, from a phenomenological philosophical point of view, it is this flexibility that is one of the foremost advantages from different qualitative approaches (Johannessen, Christoffersen, & Tufte, 2020). From the latter point of view, if all choices are made in advance, it can pose a threat to the quality of a qualitative research study. One of the great advantages of using qualitative research methods is the probability for finding new and unexpected knowledge, which in turn can form the basis for new areas of study.

Qualitative research is characterized by the absence of a main analytical direction due to the diversity of methods within qualitative research methods. According to Johannessen, Kristoffersen, & Tufte (2004), an important aspect of qualitative research is the reporting and description of the method used for the research to be as transparent as possible. Furthermore, it implies that even though qualitative research requires transparency and flexibility, a choice in the research process will bind and limit further opportunities later in the process. Phenomenology is both a philosophy and a qualitative research design, and as a qualitative design, a phenomenological approach requires the researcher to explore and describe people and their experiences with, and understanding of, a phenomenon (Johannessen et al., 2020). A phenomenological research design is appropriate in this thesis as it focuses on the individual's understanding of a phenomenon; how

covid-19 has affected business in Norway regarding digital pressure, strategic change, and differences regarding the size of organizations.

Furthermore, Johannessen et al. (2020) argues that a phenomenological design tries to explain the perspectives behind a given phenomenon - especially how people experience a phenomenon (Johannessen et al., 2020). The researcher tries to understand the interpretive pattern of the people that is studied. The problem must be formulated so that the researcher tries to understand the meaning of the experience or phenomenon that is being studied and asks the informants to describe such experiences (Johannessen et al., 2020).

The data collection is then obtained by the researcher from individuals that has experience with the phenomenon being studied, and the information often comes from long interviews. People who encounter a phenomenon interpret it based on their own experiences and knowledge. Therefore, the researcher (during data collection) should try to understand his or her own pattern of interpretation. Furthermore, Johannessen et al. (2020) argue that to understand others, it is a precondition that the researcher understands their own pattern of interpretation.

In a phenomenological approach, it is the interviews in their fullness that form the foundation for the analysis (Johannessen et al., 2020). In this thesis, theory on different fields that touch points with the research question has been emphasized to conduct a reliable analysis. According to Johannessen et al. (2020), the analysis should be organized in five steps:

1. The researcher forms a holistic impression of the interviews.
2. The researcher identifies and selects which phenomena make sense to the informants.
3. The researcher tries to interpret the data that emerges in the interview, by making a systematic analysis of the phenomena that make sense to the informants.
4. Finally, the researcher must summarize each individual interview and prepare a general structure based on all the interviews that have been conducted on the same phenomena.

In each step of this process, the researcher should retrace / go back to the raw data and compare the interviews to ensure that no important data is omitted during the analysis. To meet the

requirements of such an analysis, I included a cross-sectional analysis form. Finally, I took a closer look at the coding and what specific themes that emerged.

3.2 Interview guide

The interview consisted of 21 questions with some sub-questions on selected sections. Furthermore, the interviews lasted between 45-60 minutes. The working hours of the informants were respected. The interviews were recorded on audio file and were held by video conference due to the pandemic. Immediately after the interviews were conducted the content was transcribed. After the transcription to text documents, the audio files were deleted. Additionally, the companies and informants who have participated have been anonymized in the thesis to keep the integrity of the informants. The interviews reflect that the thesis has a qualitative design, and it was therefore possible for the informants to add information if it was desired after the interviews. A qualitative design makes it easier to go in depth to study complex and unclear topics but can present challenges when it comes to transferring the results to other situations (Busch, 2016).

The interview guide was designed based on the research question and the subordinate question, which contains questions that describe everything from basic thoughts about digitalization to more specific questions about how companies relate to technological development. By using the theoretical framework four categories for the interview guide were developed:

1. Digitalization
2. Digital Pressure
3. Strategy
4. Customer relationships

All the questions were quite open for the informants to share their unique experiences and thoughts, which is important when following a phenomenological method (Johannessen et al., 2020). Furthermore, the questions were mostly addressed in how-questions instead of why-question to make the informants more appeased and not become defensive during the interviews. The interview guide was sent in advance of each interview so that each informant had the opportunity to form some reflections on relevant the topics. A disadvantage by sending the interview guide in advance

is that the informants' answers are to a greater extent planned and may imply that the informants would have responded differently. The benefit of the informants being prepared outweighs the cost of different answers. I chose to use semi-structured interviews, as it gives more flexibility, and this type of interview provides a more natural flow in the conversation, which is in line with a phenomenological approach. Additionally, it makes the informants more reluctant to use rehearsed answers, as the interview guide is not as strictly followed (Kvale, 1997; Ryen, 2012). Furthermore, semi-structured interviews offer a certain structure, and ensure that the respondents receive the same question and that the researcher gets answers to what is believed to be most essential questions from a theoretical perspective. The full interview guide is available in Appendix 2 (7.2).

3.3 Data Collection

Potential informants were selected first by finding relevant organizations in the technology sector. Large IT-organizations, start-ups, and small sized firms were all in the area of interest, and therefore I contacted possible firms by e-mail (see Appendix 7.1). I saw this as appropriate as the theory was clear on the differences covid-19 might have due to organization size. Additionally, the literature suggested that top level management would have more impact on the strategic aspects of the organization, thus, the informants had to be top level management in their organization.

The question of who the researchers should obtain information from requires the researcher to define the sample on which the survey. Qualitative studies are based on strategic selections. That is, the researcher chooses informants who have the qualities or qualifications that are strategic regarding the research question. The sample in this thesis consisted of six informants, from top management in different firms and different sizes on their organization. All the informants come from the technology sector, where their firm works with development, implementation, and service delivery of different technological solutions. The informants were men, who might mirror the society as most top-level managers are male, thus giving the thesis a picture that is closer to reality than if the informants were selected based on gender. Thus, the informants can be described to be selected based on the thesis' theme and focus. According to Kvale (2009, p. 59), there is a diminishing curve to what can be found after 6-7 interviews when utilizing qualitative research interviews. The saturation point of the number of interviews can be 15 +/- 10 interviews, but this

depends on how it is carried out and what the theme is, and it is not stated in more detail how many that is preferable. Conducting in-depth interviews is a demanding method of data collection. There is a possibility that more interviews could have resulted in stronger data, or a second interview halfway through the analysis process could have done the same. However, the time available was an important factor, and analyzing the data at hand and conduct thorough analysis of the material acquired were found more critical and useful, rather than continuing the data collection. Therefore, based on both access on informants and the time limit of the thesis, six interviews were conducted and regarded sufficient as empirical data.

The interview guide was passed to each informant by e-mail at least two weeks prior to the interview. Furthermore, the interview guide was sent one day prior to the interview so that each informant was reminded of the interview and had a chance to prepare for the questions. Additionally, the informants were told that the interview would be anonymous and a description of the purpose of the thesis was sent along with the interview guide, information about how much time it was expected to take, and other practical information. Since our interview was semi-structured, it gave the respondents great freedom to choose when and how (what video conference platform they wanted to use) they wanted to conduct the interviews.

Due to covid-19 the interviews had to be conducted by video conference. The interviews were recorded on an audio recorder, transcribed, and deleted from the audio recorder after the transcription had been completed. The recordings were of good sound quality, and there were no problem understanding what was being said. All the interviews were transcribed to the letter, but the dialect was translated into Bokmål. As the informants and the organizations they represent are anonymized, the cases where the informants provided information that made it possible to recognize the informant, other people, places, organization, or different firms connected to the informant or the business are given context, but do not appear by name in the transcription. The transcribed text was kept with fictitious names of the informants on a PC that was secured with a username and password.

The transcript will be deleted when the assignment is submitted. In the analysis and discussion, the informants will be mentioned with fictitious names. Informant 1 is “Pål”, informant 2 is “Per”, informant 3 is “Benjamin”, informant 4 is” Kjetil”, informant 5 is “Martin”, and informant six is “Simen”.

Table 1 - Informants and size of organization

Informant	Size of organization
Pål	Small
Per	Small
Benjamin	Small
Kjetil	Large
Martin	Large
Simen	Large

As the thesis has a specific interest regarding the size of organizations, table one consists of the informants, and what how large the organization they work in is. The size categories are as follows: Small, medium, large. Small organizations are regarded as businesses with 1-20 employees, and large as businesses with above 100 employees (NHO, 2018).

3.4 Reliability, validity, and ethics

Validity refers to the degree which a method measures what it is intended for (Kvale, 1997). According to Jacobsen (2005), validity can be divided into two aspects: internal and external validity. Internal validity says something about whether the results from the study are perceived as correct and valid (Jacobsen, 2015). According to Jacobsen (2005), internal validity is mostly intersubjectivity, which involves that the closest the researcher gets to assessing whether the results are correct is when several people agree on the same results. As the thesis is written alone, intersubjectivity could not be reached. Therefore, the results were coded three times with an interval between the analysis of two days in order to create a more internal validity of the results.

At the end about 25 codes were found, which were marked with different color codes in between 40-70 places in each interview. This was a very time-consuming process, but it was important, both from a validity perspective, but additionally to know the empirical results analyze the data as good as possible. Then we went through all the interviews again and chose codes for what the different sections were about. Finally, all the codes were structured into a table, where the codes that were repeated most often by the informants were addressed as most relevant.

Furthermore, there are several measures that can be applied to increase internal validity (Jacobsen, 2015). Among these are respondent validation, control against theory, and through a critical review of sources and the information they provide (Jacobsen, 2015). Furthermore, additional reservations that were made were to assess the sources' ability to provide correct information regarding the phenomenon. The empirical data generated in the study were from first-hand sources, where reference was made by the informants own opinions and perspectives. Conducting semi-structured interviews similarly gave the informants the opportunity for unsolicited responses, and not just answering topics and questions from the predefined interview guide, which is crucial for the researcher to understand the informants view and perceptions (Jacobsen, 2015).

External validity looks at the extent to which the results generated by the study can be transferred to other samples and situations. According to Jacobsen (2005) and Johannessen et al. (2020), the purpose of qualitative studies is not to generalize findings to a larger population. This study has a limited generalization to other situations and individuals, as the sample is relatively small.

Research must comply with ethical and legal guidelines (Johannessen et al., 2020). The National Research Ethics Committee for the Social Sciences and Humanities has prepared general requirements for ethics in social research (Johannessen et al., 2020). Injury and serious strain should be avoided. These requirements have been met by anonymizing the research participants, and that the collected material has been stored properly and will be deleted when the thesis has been handed in. All relevant requirements for our task had been considered and has been complied with (as seen in Appendix C NSD has also allowed for gathering of information).

Initially, the informants were informed that it was voluntary to participate as an informant in the thesis, and that they could withdraw from participation at any time without any justification. During the interviews, several precautions were made to ensure anonymity and that ethical guidelines were followed. There were no demands from the participating organizations to remain anonymized, but as top management is easily recognized it were natural to anonymize the organizations to ensure anonymity for the informants. Furthermore, The Privacy Board sets certain requirements for anonymity towards companies and informants that are used in studies and thesis. The data gathering has followed the Personal Data Processing Act (the Personal Data Act) to preserve the informants' anonymity and to avoid personal data or assessments that conflict with the law. An audio recorder was used during the interviews, which were asked for permission in advance. Moreover, a requirement is informed consent, which were given both prior to the interviews as well as when the organizations were contacted. Thus, the interviews have been completely voluntary. Claims of confidentiality are met through anonymization and how the data has been gathered and analyzed. The questions that were asked during the interviews were not of a sensitive nature and could not be interpreted as personal. To further counteract the identification of the interviewees, descriptions of the informants were avoided. Anything that was not relevant to the thesis, such as age is excluded in the analysis (Johannessen et al., 2020).

According to Johannessen et al (2020), the reliability of a study refers to the ability to repeat the study and get the same results if other researchers were to conduct the same study over again. Reliability can therefore be described as is used about strength in measurements and data that has been used. If the finding is reliable, others should be able find the same results to a reasonable extent. In this study reliability is based on whether the researcher has managed to keep a neutral voice through the interviews and that the informants were not led to answers that were suited to the thesis (such as interviewer bias, observer error, and observer bias). This was something we were aware of, and we asked open-ended questions and follow-up questions. To clarify the informants' opinions, some "Yes / No" questions were asked. Additionally, all transcripts were sent to the informants after the interviews to allow them to both ensure that the information given were correct, to ensure that they were kept anonymous, and to ensure that the interpretations were correct.

To ensure that informed consent was fully respected, the following refusal routine was prepared: If an informant contacted to say that he / she did not want to participate, this was registered as a waiver due to refusal. The person in question was then not contacted again. Those who have not responded to other reminders were also considered to have refused to participate and the person or organization in question was not contacted again.

3.5 Data Analysis

According to Ryen (2012), the aim of the qualitative analysis is for the reader to gain increased knowledge of the research area without having gone through all the underlying data. Regarding the analysis of data material, a phenomenological analysis was chosen. Postholm (2010) argues that this emphasizes the content of the text material as it appeared from the informants' responses in their interviews (Postholm, 2010). The empirical data from the interviews was analysed in a way that provided a deeper understanding of the meaning of the informant's thoughts and reflections. According to Malterud (2003), such an analysis should consist of four main steps that were followed:

1. Overall impression and summary of meaning content
2. Codes, categories, and concepts
3. Condensation
4. Summary

The first step is to read through the entire interview with the intention that you will be able to get an overall understanding of the whole of the interview (Malterud, 2003). The assumption is that all parts of the interview are related to each other. Thus, the researcher needs to understand the relationship between the different parts and the whole by reading through the entire interview at least once. This was done several times, both reading through each interview in its entirety, but the meaningful parts were compared with the full interview of each informant to verify the meaning. Furthermore, thoughts and reflections were written down each time the interviews were read

through to give a clearer understanding of the overall meaning each participant described in their interview. The reason was to look for the central message in each interview, in addition to examining any commonalities between the interviews. After doing this one time, I waited two days to do the same again, then compared the notes from the first time with notes from the second time. Lastly did this a third time to be comfortable with the validity of the empirical data and the findings.

In Step two, the researchers must find meaningful aspects in the empirical material that are important to the research question and sub questions (Malterud, 2003). Various text elements were identified that provided information and knowledge about the various topics which then were used as codes. According to Malterud (2003), the codes that has been found and analysed should then be links in the interpretation process. This forms a chain of interpretation, which in this thesis consists of three codes: “*Statement*”, “*Open code*”, and “*Focused code*”. The “*Statement*” is a direct citation from the informants, which is then coded to an “*Open code*”, which refers to the understanding of topic of what is being said. The “*Open code*” is then interpreted, which gives a “*Focused code*” where the understanding of the underlying statement and theme of the informant is being attended. The further from the “*Statement*”, the more abstract the content becomes. Thus, the codes narrow down the essence, and brings out the reflections and the latent meaning of the text.

Step three, or the condensation, involves the researchers extracting the parts of the text that are coded, those that are identified as meaningful. The researcher lifts the original codes up to a more abstract level, which the researcher expresses psychologically the meaning of what the informants has been saying implicitly based on relevant theory. By explaining the statements in the light of a professional language rooted in the thesis theory, the goal was to be able to achieve a deeper understanding of the informants’ experiences, which in turn could be used in for future research of the phenomenon.

In step four, the researchers summarize and re-contextualize material to find new concepts and descriptions (Malterud, 2003). Codes and concepts in this phase might have to be changed or adapted, as the analysis process have detected new connections or patterns that did not appear

clearly in the material or during the other steps. In this thesis, the themes that emerged were based on relevant theory as well as the words and expressions used by the informants themselves.

In addition to the phenomenological approach of analyzing the empirical data, a contextual data organization has been done. According to Johannessen et al (2020), a contextual data organization means that the researcher is not concerned with looking at the entire data material through the same lens, but looks at certain parts, contexts, or cases. This is a holistic method where the researcher searches for what is specific in a particular context (Johannessen et al., 2020). The discussion and presentation of results will mainly be of a holistic approach. Furthermore, aspects of cross-sectional division of data were used. This is a method of constructing a system for indexing the amount of data. Such an indexation means that labels are placed on sentences or paragraphs that make it possible to identify and locate special topics in the data material (Johannessen et al., 2020). Thus, the analysis was as follows: a cross-sectional analysis to get an overview of repeated topics, then a contextual data organization where important themes were revealed in the interviews, with phenomenological analysis as a basis for analyzing, coding, and presentation of the empirical data.

4. Empirical findings

This chapter will focus on the empirical findings that were found in the qualitative research and will be discussed based on the literature and the research question: “*Which strategic assessments do technology firms make regarding digitalization due to covid-19, and why?*”, and the following sub questions: “*Has the companies’ approach to digitalization changed because of covid-19?*”, “*Do companies follow an explicit strategy regarding digitalization because of covid-19?*”, “*To what extent do companies experience a digitalization pressure, and how do companies predict that digital change can create a future competitive advantage?*”, “*Are there differences in experienced pressure for digitalization in SME firms compared to large firms due to covid-19?*”, and “*How has customer relations changed due to covid-19?*”. The findings of the research were sought by the purpose of gaining answers to the research question, and the sub questions. The chapter is containing a content analysis for each theme that is found to be of relevance to the research question. Additionally, each content analysis identifies and legitimizes a theme through coding, categorizing, and condensing, which were presented in chapter 3. A focused code is used for categorization. The findings will be structured based on the codes that were found during the analysis. In total six themes were found, and five will be presented, and then discussed in successive order based on the sub questions. Furthermore, theme six, which were differences and similarities between SMEs and large established firms, will be presented during the five other themes. Thus, the analysis will be more compact and allow for a better flow of the content. Additionally, the sub questions the theme are thought to answer will be presented prior to each corresponding theme table, which will then be analysed with the use of statements both in the table and other statements from the informants that are deemed of particular relevance.

4.1 Future Changes in the organization

The informants have all felt changes in their own organization because of covid-19. The questions asked by the informants were how they felt that their workday had changed and how the organization had adopted changes during the pandemic. Furthermore, the informants were asked about changes in relation to customer meetings and customer interaction. These questions were asked to answer sub question one: “*Has the companies’ approach to digitalization changed*

because of covid-19?”. There are some differences and some similarities between SMEs and large established firms and several similarities, which will be presented by the statements in table 2.

Table 2 - Companies views on lessons learned and changes due to covid-19

Theme: Lessons learned and changes		
Statements	Open code	Focused code
<p>Per: <i>“If you have any meetings, you can end a meeting and go straight into another meeting immediately afterwards. You did not have the opportunity to do so before covid-19. You had to leave another meeting room, you are usually with a customer and going to and from. You become more efficient, and more structured. Furthermore, the meetings are structured, which is why video conference will be used more frequently when/if covid-19 passes.”</i></p>	<p>Travel expenses</p> <p>Efficiency during meetings</p>	<p>Cost efficiency</p>
<p>Pål: <i>“... we have become better at utilizing digital tools internally, and using them in cooperation with customers, which is clearly an advantage”</i></p>	<p>Employees utilizing digital tools</p>	<p>Human capital</p>
<p>Pål: <i>“If we had been a company that did not have these tools in place, and did not have a high level of expertise in IT, it would probably be different”</i></p>		
<p>Pål: <i>“We used to spend a lot of time on travel business, and the fact that we can now use this time for efficient work is clearly an advantage for us”.</i></p>	<p>Video conference</p>	<p>Cost efficient</p>

<p>Benjamin: <i>“Our market is international, and we also reach out internationally in an easier way.”</i></p>	<p>Market place and segments</p>	<p>Globalization</p>
<p>Kjetil <i>“it is that it is not the system side that has given us challenges, it is more about adaptations and changes to processes and routines. This is where covid-19 has created something during the pandemic, not on technology. We had it, but we must do something about processes and routines. And really where we had focus, and that made it perhaps a little easier for us than for others.”</i></p>	<p>Implications for digital tools</p> <p>Changed routines and processes.</p>	<p>Early adopters</p> <p>Improved processes and routines</p>
<p>Pål: <i>“In our firm, it was more coincidental that this process had started with the migration, but covid-19 accelerated this without me having to push the processes, it happened by itself, very naturally”</i></p>	<p>Easy switch of systems</p>	<p>Human capital</p>
<p>Kjetil: <i>“... the utilization that we have had of our digital tools, is going to be maintained. But I think everyone is going to say, “but we need to replace some of these meeting places with physical meetings”. That everyone has an obvious attitude that, yes, as we travelled before, all these physical meetings we were at, we will not return to the same level of traveling to physical meetings.”</i></p>	<p>Cost efficiency of digital meetings</p> <p>Need for physical meetings</p>	<p>Future meetings, internal and external</p>
<p>Simen: <i>“we see changes in four main areas: our employees, our customers, our operations and the ecosystems we work in”</i></p>	<p>Change in operations and future investments</p>	<p>Strategic changes</p>

<p>Martin: <i>“In the future, we must look even more at how we can automate and control more remotely, so that we can predict and solve technical situations faster and better.”</i></p> <p>Simen: <i>“We want to accelerate all digital applications, including when it comes to infrastructure. We must also look for new business opportunities for our organization because of the pandemic, but how much we are going to invest and how is it a little early to comment on.”</i></p>	<p>Implementation of more digital tools</p> <p>Covid-19 as an accelerator for change</p>	<p>Digital implementations</p> <p>Change in strategic investments</p>
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The informants elaborated on several changes, but the biggest change all the informants mention is the change from company offices to home office. There are different experiences, as mentioned before, the larger established companies had some negative experiences with only using video conference, as it created tendencies for sub-cultures, which can be very negative for the organizations. The informants in the SMEs also mentioned that a disadvantage of digital communication was that it becomes more difficult to read the customer, which in turn creates greater uncertainty about whether the customers perceive and understands the message, when it is communicated digitally. Kjetil argued that video conference has made it harder to know how customers react to the content, as it is limited how much that is possible to observe or capture in dialogue via video conference, email, phone. Additionally, the informants in SMEs mentioned the problem of getting new customers as business fares and businesses arrangements has been cancelled and put indefinitely hold. According to the informants, digital business fares do not favour the smaller companies as they have not gotten the same amount of attention and exposure as they did by physical business fare. Therefore, they argue that there are limitations for video conferences, especially when it comes to creating new customers.

Even though there are limitations to video conference, the informants agree that there are several benefits. The biggest benefit according to Pål, Per, and Benjamin, is that travel is limited. By limiting travel, expenditures on travel shrinks, which in turn gives a positive net result for the organization. Another benefit that Simen mentions is that the company can communicate across

time and space, which give larger organizations the opportunity to draw on resources across borders on a completely different level than they had done before. As Benjamin pointed out, this also gives the smaller company easier access to an international market, which is another benefit the informants from the SMEs agree on.

Furthermore, the informants agree that the customers have changed their behaviour and have become more digital. According to the informants, this is true for both business-to-consumer segments (B2C), and business-to-business segments (B2B) of the market. Additionally, the informants in the large organizations mention changes regarding their ecosystems, which Simen mention can be either through the distribution and sale of services, through collaboration to sell software and security solutions, or how they collaborate with partners.

4.2 Digitalization

The informants were asked how they would define digitalization and how it had affected their organization. These questions were asked to answer a part of sub question two and three: “*Do companies follow an explicit strategy regarding digitalization because of covid-19?*”, and “*...how do companies predict that digital change can create a future competitive advantage?*”. How companies understand digitalization can have an impact on whether they consider digitalization important, or critical of their future success, and can thus explain their focus on digitalization. There were some differences between the informants, mainly based on the size of the organizations. Tabel 3 present some of the statements in the analysis of the respondents.

Table 3 - Companies view on digitalization

Theme: Digitalization		
Statements	Open code	Focused code

<p>Pål: <i>“Digitalization is the use of tools to carry out processes. For me, it is digitalization. And it can then be both to develop new processes, or you develop / improve existing processes”.</i></p> <p>Per: <i>“Digitalization is both about robotization and increased access to huge amounts of data that enable testing of entire populations, and that one no longer works on paper but stores everything digitally”</i></p> <p>Benjamin: <i>“Digitalization is the development of transmitting all information digitally and through use of computerized tools.</i></p> <p>Kjetil: <i>“...move things from paper to a digital medium. I mean it is the old analogue digital change, it is not what we put in the concept of digitalization but is part of it. For us, it has mainly been two things. One is that we digitize processes. Routines, processes, and efficiencies based on both increased deliveries, increase the delivery time, reduce time to market. Get things out to our customers much faster, to keep up with the competition. And the second is to reduce the cost, right. New and modern technology streamline using digitalization to reduce cost.</i></p>	<p>Tools for change</p> <p>Tools and improvement of processes</p> <p>Information and innovation</p> <p>Development by using different tools</p> <p>Digital tools change routines</p> <p>Increased efficiency</p>	<p>Optimization</p> <p>Different digital solutions</p> <p>Utilization</p> <p>Cost reduction</p>
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The respondents in the SME firms, Pål, Per, and Benjamin, all have a narrower view of digitalization in comparison to the respondents from the large firms. The open codes indicate that the focus what digitalization can do as a means for innovation and that tools can be implemented to utilize information (big data). As stated by Pål “*Digitalization is the use of tools to carry out processes*”, and by Per: “*digitalization is both about robotization and increased access to huge amounts of data*”, whereas informants from the large firms has a more elaborate response to what digitalization is. As stated by Kjetil

“...move things from paper to a digital medium. I mean it's the old analogue digital change, it's not what we put in the concept of digitalization but is part of it. For us, it has mainly been two things. One is that we digitize processes. Routines, processes, and efficiencies based on both increased deliveries, increase the delivery time, reduce time to market. Get things out to our customers much faster, to keep up with the competition. And the second is to reduce the cost, right. New and modern technology streamline using digitalization to reduce cost.”,

thus, larger firms have a broader view of digitalization compared to SME firms. Furthermore, Simen elaborated that in their organization there would be a lot of different views based on what department in the organization which were question. He believed that because top management must address different needs in the organization they might have a more complex understanding of digitalization, which were not affected by silo mentality in different parts of the organization.

Additionally, the informants believed digitalization enabled the firms to be more efficient. According to them Covid-19 had not changed their view on digitalization, rather it had made the investments in technology more worthwhile. For instance, it made the transition to home office more efficient, and the communication towards customers easy in an early phase of the pandemic. Moreover, informants in the large established firms was of the opinion that a more digital structure internally can help innovate businesses, which in turn can help the companies that adopt to technology to be more innovative. An important notion from the informants in the big firms is that

even though digital tools might help organizations to be more efficient, they experience that jobs are created as part of their innovations for digitalization both internally and externally.

4.3 Strategy

The informants were asked about their digital strategy, and whether the organization had a digital strategy. Furthermore, the informants were asked how they worked towards digitalization in their organization. These questions were asked to answer sub question two: *“Do companies follow an explicit strategy regarding digitalization because of covid-19?”*, some additional statements that were more related to other themes were uncovered by these questions and are not included in table 4, but for instance in table 2 and 3 where the themes were more accurate regarding the informants’ statements and the methodical approach. There were only some of the large established organizations that did have implemented a digital strategy. None of the respondents in the SME firms had, or did see the need for, a written strategy regarding digitalization. Some arguments have been presented in table 4.

Table 4 - Companies view on digital strategy within the organization

Theme: Strategy		
Statements	Open code	Focused code
<p>Pål: <i>“I would say that we have a high focus on digital strategy, and you can say that everyone in the organization is focused on digital solutions, and that is because we are personally very passionate about technology and believe that it is important for us to be competitive”</i></p> <p>Per: <i>“Furthermore, it is the culture in the company, it is so widely known and</i></p>	<p>Importance of technological implementations and human capital</p>	<p>Not a single department for strategic development</p>

<p><i>implemented that we do not feel the need to have a poster on the wall stating our goals regarding digitalization.”</i></p>	<p>Organizational culture</p>	<p>High human capital</p>
<p><i>Martin: “... we have a digital strategy which are aligned with our overall strategy. The digital strategy help coordinate implementations, and address which projects to focus on.”</i></p>	<p>Project coordination</p>	<p>Digital coordination</p>
<p><i>Simen: “What I experience is behind the question, and is important to think about, as the question is asked, I experience that digitalization might become a goal on its own, but digitalization in itself in our organization is not a goal, and I think it is important to inform about.”</i></p>	<p>Digitalization as a tool</p>	<p>No formalized digital strategy</p>
<p><i>Simen: “The process of thinking different has been a factor of change, where we as an organization has been able to accelerate digitalization and shift towards "the new normal". The crisis has been an opportunity for us where we have had to think how we can benefit from the pandemic by changing operations to reach opportunities when the society opens up again.”</i></p>	<p>Not inherently a goal, but a means to an end</p> <p>Thinking different, innovate</p> <p>Pandemic as an opportunity</p>	<p>Shift in strategy</p>
<p><i>Kjetil: “... to establish a separate digitalization strategy next to all other strategies, it means that there is something</i></p>		

<i>to compete with something else, and that was not the point of digitalization in our organization”</i>	Competition among different strategic goals	Digitalization as part of the company DNA
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The respondents from the SME explained the lack of a digital strategy based on the company's size and the number of employees, which does not enable the firms to use as many resources single handily on digital strategies, although they argue that issues and assessments about digitalization are addressed and discussed continuously within the firms. Pål elaborates *“I would say that we have a high focus on digital strategy, and you might say that everyone in the organization is, and that is because we are personally very passionate about technology and believe that it is important for us to be competitive, although we do not have a formal digital strategy”*. Several of the respondents also claimed that digitalization has become a natural part of everyday work life which all employees just have to deal with. According to Benjamin, following the digital trends and staying up to date is a must among the employees in his firm. This is a view that seems especially important for the SMEs, but the large firms do also address the importance of highly qualified employees which embrace digital solutions as a strategic factor for success. Furthermore, it is not enough to keep up with customer demand, the firm must keep developing to meet future demands. Therefore, keeping up with digital developments is highly important.

Another argument addressed by the Kjetil and Simen, is that by adding a digital strategy to your overall strategy might be distracting, as a digital strategy should not compete with the overall strategy, but the overall strategy should on the other hand have digital aspects. Thus, the company will not implement different digital solutions with the goal of being *“digital”*, but do so with a clear purpose in mind, and without competing strategic goals internally. Additionally, Simen, which is in the top management of a large organization, emphasizes that it is important to be aware of what the company should and should not invest in, so that the organization do not just throw itself over everything for fear of missing out. This is something all the informants from the larger firms mentioned. Thus, digitalization, and strategy is on the agenda of all the informants, and as explained by Martin, there is a strong focus on exploring the digital tools available on market, as well as

solutions inhouse. Other respondents also emphasize the importance of testing and examining the benefits of digital tools provide before they are implemented.

Even though there were differences in the responses between SMEs and large firms when it came to strategic thinking, and how to approach digitalization, all the informants agree on the importance of utilizing digital solutions, which they view as a means to gain a competitive advantage, and for some even a must in order to stay competitive. Pål states that both the company, and the products the company delivers must be digital and compatible with other digital solutions that are used by other firms for them to be relevant and competitive. This is a view that Pål and Benjamin shares, and they emphasized the need for compatible solution as part of their strategy.

4.4 Isomorphisem

To investigate how the companies experienced pressure for digitalization in their organizations, the informants were asked if there were any form of pressure prior to covid-19, or if there had been some pressure during covid-19 to change towards more digital change. These questions were asked to answer sub question 3: *“To what extent do companies experience a digitalization pressure, and how do companies predict that digital change can create a future competitive advantage?”*. Even though the informants were saying they did not feel a pressure for digitalization when asked, the answers and information shared indicates otherwise. Tabel 5 contains statements from the informants that are themed about the amount of pressure they have felt regarding digitalization.

Table 5 - Companies view on pressure for digitalization

Theme: Isomorphisem		
Statements	Open code	Focused code
Benjamin: <i>“We saw that there was an underlying need, and we lucky had implemented Microsoft 365 ahead of covid-</i>		

<p>19. I experience Office 365 has almost become a de facto standard in the environments we work in. We have therefore not experienced any pressure that we should go this way, because everyone has it. I think we probably would have felt some pressure if we had not implemented Microsoft Office 365.”</p>	<p>Implementation of digital tools</p>	<p>Standardisation</p>
<p>Kjetil: “The pandemic has shown us why they are important, and if we did not have these systems, we would actually have to implement them. There has been a significantly increased use of both collaboration platforms. When we now/if "cancel" covid, and society becomes open again, I think it is both from the employees, and from managers, and no matter what perspective of customers one talks about, there will be a perception that digital platforms, and the great utilization that we have had of it, it is going to be maintained.”</p>	<p>Need for digitalization</p> <p>Pressure, external and internal</p>	<p>Implementations</p>
<p>Martin: “We have not experienced any pressure, and we look at digitalization to the extent that it creates innovation, it creates efficiency of various processes, and there is</p>	<p>Implementation prior to Covid-19</p> <p>Lessons learned</p> <p>Future demand for digital tools</p>	<p>Utilizing digital tools</p>

<p><i>a desire to be innovative, and more efficient that digitalization takes place organically in the company.”</i></p> <p>Simen: “... <i>this year we have had to do things completely different. We have operations in several countries with thousands of employees, and millions of customers. Suddenly all the employees had to shift to home office, or at least as many as possible, so handling such a crisis and think completely different has been challenging.</i>”</p>	<p>Opportunities and innovation</p> <p>Efficiency and new routines</p> <p>Rapid change, both internally and externally</p>	<p>Internal view of innovation</p> <p>Pressure for change</p>
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Informants in the SME firms have an understanding that they were in a process to implement several digital tools already, and there was not any pressure from employees, or costumers that drove this process, but an internal need in the organization prior to covid-19. As the implementation processes were already on their way, the pandemic did accelerate the transition to these digital systems, for instance Microsoft 365, which has become an important tool, especially due to Teams. Microsoft Office 365 has become crucial in the organization of all informants, as stated by Benjamin: “*I experience Office 365 has almost become a de facto standard in the environments we work in.*”. The informants agree that the organizations do most of their work by utilizing more of the digital tools that has not been used before, for instance by using video conference in teams and folders in different teams, as well as share point. According to the informants this has led to a more digital organization with employees that are familiar and comfortable with digital solutions and tools that are available.

Although the informants did not feel any pressure directly Pål states the following regarding the digital solutions they use *“There must be no restrictions that prevent interaction between organizations, both internally and externally, so projects are able to go across company boundaries.”*, which is a view that is consistent with the other informants. Benjamin states that *“Projects has to function as integrated teams, where there are participants across the organization.”*. Additionally, Pål mention the importance of their own products to be able to be used across organizations *“... what is incredibly important is that our technology must interact with other technologies and across organizations”* which might indicate that there is a form of pressure when it comes to what the customer want and need. All the informants from the larger firms elaborated that for them functionality across systems is important, and that they themselves delivered, and demand compatible solutions.

4.5 Customer relations

An important part of an organization’s existence is its customers. The customers were asked about their customer relationships both prior to the pandemic, during the pandemic, and how they think they will approach customers after the pandemic has settled. This gave insight to sub question 5: *“How has customer relations changed due to covid-19?”*. When asked about their customer relations, the informants were answering along the same lines. Table 6 gives an overview of some of the statements the informants gave during the interviews and the codes which were used.

Table 6 - Companies views on Customer relations

Theme: Customer relations		
Statements	Open code	Focused code

<p>Pål: <i>“Before the pandemic, the customer probably had an expectation of having a physical presence with us, but when the pandemic came, you no longer have that expectation”</i></p>	<p>Changed expectations.</p>	<p>Relations</p>
<p>Pål: <i>“Customers who work a lot with critical infrastructure, which must work, and which must be up, took immediately action after the outbreak of covid-19, and created a number of restrictions that meant that we with our technology and our services did not reach new customers”</i></p>	<p>Restrictions</p>	<p>New customers</p>
<p>Per: <i>“What is important is that you must have a dialogue with your customers even if it is a pandemic, and it is simply to have such Teams meetings. Follow up by phone and follow up with team-based meetings.”</i></p>	<p>Dialogue with the customers. Follow up meetings.</p>	<p>Relations</p>
<p>Benjamin: <i>“One thing is that we should create trust to the systems delivered to the customer, but if the customer does not trust us then we do not get access to the information we need to develop and create better services either”</i></p>	<p>Trust System development</p>	<p>External trust and building relations</p>

According to the informants in the SME firms, they were largely focused on building trust for their products and being able to gain feedback from the customers. Benjamin states that *“... if the customer calls me when he has problems, then I have a good customer relationship.”*. Furthermore, the informants in the SMEs were of an understanding that the way of building trust

and create lasting customer relations were to be available, have continues meetings, and follow up dialogue. As physical meetings have been a problem during the pandemic, there has been a shift in expectations from the customers, whereas video conference has been a preferred method to keep in touch with the customers. According to the informants acquiring new customers during the pandemic has been somewhat challenging, which can be due to physical business fares, etc has been cancelled because of the pandemic. Pål elaborated: *“This is because everything has been cancelled, and these events do not exist, and these have become digital, and for us who are small and will work, and get new customers, we cannot do the same job with digital tools”*. The other informants in the SMEs shared this view and pointed out that it was hard to gain the same level of reach as is possible with the physical fares and business arrangements when you are a relatively small company. Additionally, there were several firms that implemented restrictions, which made it harder for the SMEs to reach new customers. Even though the SMEs did experience some problems regarding new customer shortly after the pandemic outbreak, there has been more positive leads after the initial first six months of the pandemic.

The informants from the larger organizations did not have the same issue regarding promoting their own services, which can be explained due to their reputation precedes them in a different way compared to the SMEs. As stated by Kjetil regarding future plans after the pandemic *“We must expand! We have far too little space”*, which was the status for the large established firms. The larger firms had also been utilizing video conference to keep touch with customers, and internally between different firms within the organization. Although, they had experienced another challenge internally when it came to coordinating between firms within the organization. Kjetil stated (regarding video conference compared to physical meetings): *“... the absence of these physical signals you began to intercept during the meeting. You are missing something in the dialogue, which in turn are beginning to be expressed as frustration between different parties.”*, this was something that made Kjetil feel a certain organizational deterioration of the organizational culture. Ultimately, Kjetil began to feel a level of sub-cultures in different companies in the organization, which did not focus on delivering the best products for the organization. Simen and Martin had somewhat the same challenges, which led them to organize some physical meetings between key customers and key employees.

5. Discussion

In this chapter the empirical findings from chapter 4 will be discussed in view of the theoretical framework which was presented in chapter 2. The order of the discussion will follow the themes found in the empirical analysis in chapter 4.

5.1 Digitalization and strategic approach

In the theory chapter we saw that there was no such thing as a clear definition of the term “Strategy”. Johnson, Whittington, Scholes, Angwin, & Regnér (2014) understand the concept as “*the long-term direction of an organisation*”, whereas Porter (1996) addresses strategy as “... *deliberately choosing a different set of activities to deliver a unique mix of value*” (Johnson et al., 2014, p. 4). The results of the interviews create a pattern that reflects the definition of digitalization used in this study. Digitalization is seen as a phenomenon that defined as a process of a fusion of technologies and different systems (Almeida et al., 2020). This coincides with Gartner Group's (2021) definition of digitalization, which views digitalization as the process towards a more digital business. This process needs an initiating event to initiate this merger and give society a purpose to adapt to the new technology. The merger is linked to it wide range of digital tools that after the start of the pandemic have started to be used in one wider scope. Thus, the pandemic stands as the initiating event that created a purpose of the fusion of the emergence of digitalization. Furthermore, Gartner Group (2017) explains that digitalization involves the use of digital technology that changes the business, provides new income and value-creating opportunities. According to the empirical analysis, three change factors are highlighted towards digitalization: 1. The transition to an increasingly paperless form of work (analogue systems to digital), 2. Digitalization of routines and processes, and 3. Automation of work. The companies highlight the use of analysis tools, the use of cloud computing, automation through IoT, and the use of artificial intelligence in their daily work and their work towards digitalization in their organizations. Thus, digitalization in both SMEs and large companies seems to be largely about how companies can improve existing work processes using digital tools, create digital routines and processes, and automation of work. The large companies have to a large extent made specific plans and implemented measures against digitalization, while the SME informants explain that issues surrounding digitalization are raised and discussed on an ongoing basis. From the empirical data material, only the informants from the large companies fit Gartner Group's (2021) definition, which indicate they have a formalized

strategy regarding digitalization. Thus, the SME companies do not seem to need a defined strategy, as the size of the company and the number and competence of employees are recurring explanatory factors.

However, by looking beyond strategy as a planned concept, there are other aspects of the empirical data that indicate that the SMEs companies have a strategic relationship to digitalization. Based on the works of Rai et al. (2012) strategy can be understood as specific path choices that can help companies achieve their goals. Strategy is therefore just as much about taking considerations and deciding what not to do (Portes, 1998). We find the same way of thinking among the respondents, who emphasize the importance of having a conscious relationship with digitalization, and a clarity about what the company should and should not do. The informants emphasized by the informants, that it is not possible to just throw the organization into every solution that comes along for fear of missing out, which corresponds to the statement from Rothermel (2015) which says that an attempt to be “*all things to all people*” probably does not pay off. Thus, there seems to be a strategy, be decided regarding internal and external conditions (Porter, 1996; Rummelt, 1984).

The results confirm previous research that digitalization is not a new phenomenon (Almeida et al., 2020). Technology has always existed, but the pandemic has influenced organizations in the form of applying technology in their everyday work and accelerated processes organizations already had begun. Almeida, Santos, and Monteiro (2020) explain that regardless of previous experience in digitalization, companies have been forced to implement digital solutions if they were not already implemented prior to the pandemic. The analysis show that both larger firms and SMEs have started to apply digital solutions and tools to a greater extent than prior to the pandemic.

At the same time, results show that SMEs and large companies in the technology sector have been more prepared for the changes inflicted by covid-19 as they have implemented several digital solutions, which has been utilized more during the pandemic. Thus, early adopters have not felt the same amount of change as laggards. Almeida, Santos and Monteiro (2020) believe that smaller companies do not have the same resources to cope with a change as larger firms. The results indicate that the SME firms in the technology sector to a higher degree are more prepared and adaptable, which leads to less change. According to the results, SMEs have had little to no need to

invest in resources to cope with the changes, as they already had the tools needed. Soto-Acosta (2020) explains that SMEs more easily can meet the needs society demands. Results show that this can be explained by the organizational structures in the SMES, as they do not have the same large organizational structure tuned to society prior to the pandemic outbreak hence having a shorter process to adapt to the structural needs during the pandemic. In any case, the pandemic is directly linked to the exercise of digital tools. Thus, it becomes complex according to the result that generalize the concept of “*change*” as different changes can create different processes of restructuring. At the same time, Fletcher and Griffin (2020) believe that larger companies do not mature enough to adapt to a digitalized world of work when there is a shortage of competence to work digitally for a longer period. The results of the study show that both SMEs and large established companies combine the digital way of working with the physical which suggests an adaptation to a more digitalized world of work. The result also shows that both SMEs and large companies in the technology sector are more positive and adaptable to the digital work structure as they believe that this leads to more efficiency. At the same time, the results show that established companies have a more traditional organizational structure which makes it difficult to adapt a fully digital work structure, even though they have implemented digital tools and solutions prior to the pandemic.

5.2 The absent of preserved pressure for digitalization

The thesis' third sub question is about how companies perceive and respond to expectations related to digitalization in their external environment. Our empirical data show that none of the companies experience a noticeable digitalization pressure. However, companies cannot expect to be unaffected by their environment, where both the internal and external environment can be said to influence the actions of organizations. The sub research questions will therefore be discussed based on institutional theory and social capital. Institutional theory sheds light on the relationship between the organization and its environment, where a basic principle is that the external environment exerts pressure on how the organization should adapt (Scott, 2014). This leads to what DiMaggio & Powell (1983) call “isomorphism”, where a distinction is made between three types of isomorphism - coercive, mimetic, and normative isomorphism.

Coercive isomorphism signifies that something is imposed from the external environment in the form of formal or informal pressure (Powell & DiMaggio, 1991). The pressure typically stems from resources on which the organization depends on, which makes the organization feel compelled to give in. In technology companies, customers may be considered such a resource, and several studies have concluded that customers exert a digitalization pressure (Hirt & Willmott, 2014; Westerman, George Calm ejane et al., 2011). According to Hirt & Willmott (2014), this primarily applies to customers in larger companies, as smaller companies probably do not experience as much digital pressure from their customers. The findings in chapter 4 point in the same direction, as none of the respondents' stated that the organizations experienced digitalization pressure from its customers. However, the reason why more of the companies do not experience pressure from customers may, be due to the respondents attaching different meanings to the term. Additionally, the analysis show that customers often have expectations that the company uses digital solutions, including that communication, shipments and various systems are automated, and can complement other digital solutions. As customers can be seen as a resource the companies depend on, their expectations for the use of technology can be seen as informal pressure, even though none of the companies experience this as a form of digitalization pressure.

Furthermore, the empirical findings show that customers who are at the forefront of digitalization often expect technology companies to keep up with digital development. This can also be linked to how the service sector works, as knowledge of customers 'IT systems is an important part of the technology companies' business understanding. However, not all customers are equally up to date with digital developments, and as our empirical data show, customers' use and attitudes towards digital tools vary. Among other things, customers are mentioned who are still lagging in terms of the implementation of digital solutions. Furthermore, this can almost be interpreted as meaning that the technology firms are experiencing pressure to slow down digitalization and are consequently facing conflicting demands from their customers. In other words, how the customers have adopted digital tools and systems has a major impact on the digital development of both SMEs and large companies, which should have a greater effect on large companies. If this impact is so great that it limits the organizations work towards digital progress. Thus, it can be regarded as what Gabbay & Leenders (2001) describe as "*social liability*". Social liability is when the company is limited and suffers from its social connections. The companies' innovation and digitalization do not get better

than the weakest link, and customers who do not implement digital solutions and oppose society's digitalization weakens the company's ability to fully digitize the workflow. Therefore, customers' expectations of using traditional analogue methods may be inconsistent with the technology companies' desire to digitize their own work processes.

According to Oliver (1991), companies that face conflicting demands, or experience differences between institutional expectations and the organizations internal goals, will choose a compromise strategy in response to institutional pressure. Oliver (1991) explains that although compliance with customers' requirements might provide increased social support, their expectations and requirements can sometimes appear to be unqualified. The reason why some companies choose to encourage customers to become more digital is because they believe the customer deserves a more up-to-date solution. For instance, digital systems such as Cloud Computing, big data analyses, and Artificial intelligence can be used to create added value for the customer, and to the extent that digital systems provide greater access to information can lead to better utilization of the customer's time and money. This can be interpreted as meaning that both technology companies and the customers will benefit from more digitalised work processes and can consequently mean that expectations that oppose such a development are perceived as unqualified.

Of the three different compromise strategies Oliver (1991) offers, it is the compromise strategy that hits closest to the respondents' descriptions. A compromise strategy means that the company tries to achieve parity between internal and external requests. Thus, the companies should be active in promoting its own interests. An example of this is when a representative of a technology firm encourages clients to implement certain solutions the firm can provide, which make the customer more digital. The findings from the analysis show that although the technology companies try to influence the customers to become more digital, only some of the larger organizations seems to influence their customers'. SME companies seem to be more in line with customers' expectations if it does not go beyond the quality of their products. This does not coincide with a compromise strategy, and therefore pulls more in the direction of the SME applying an acquiescence strategy in the form of "*compliance*" (Oliver, 1991). Consistency is when a company consciously and strategically chooses to meet institutional pressure, in this case customers' expectations, because it is expected to provide benefits such as social support, resources, or predictability (Meyer & Rowan,

1977; Pfeffer & Salancik, 1978; Powell & DiMaggio, 1991). For instance, not meeting customers' expectation can possibly affect customer satisfaction, and in turn the length of the customer relationship. Thus, the choice to meet customers' expectations can offer a degree of predictability to the extent that it reduces the probability that a customer wants to end the customer relationship. Whether the technology companies manage to keep the customer naturally also affects the income, and especially for smaller companies, as the loss of customers often constitutes a greater consequence when it comes to income compared with larger organizations with several different flows of revenue.

According to the technology companies, long-term customer relationships are beneficial because they increase the organization's knowledge of and understanding of the business and the surrounding conditions. This can contribute to better services, and more tailored IT services. Leivinthal & Fichman (1988) similarly explain that long-term relationships lead to significant savings in terms of time and effort because of greater social capital. According to Bourdieu (1986), social capital is something that is created and developed through the relationships, which is owned by two or more parties. Social capital is therefore not something that can be easily transferred (Nahapiet & Ghoshal, 1998), and must be considered an investment in each relationship. Given that each customer relationship has a value, it will therefore be in the technology companies' interest to keep customers if possible. Several researchers have also concluded that social capital has a greater impact on economic growth than the individual's knowledge and skills (Cooke & Wills, 1999; Nahapiet & Ghoshal, 1998; Paldam, 2000; Suseno & Pinnington, 2018). Furthermore, previous research shows that loyal customers can bring several financial benefits such as increased sales, higher entry barriers for competitors, and makes the customers less receptive to offers from competitors who offer lower prices for similar IT services. According to Oliver (1991), social support can also affect the company's reputation and personal recommendations, which are of particular importance to SME companies when it comes to attracting new customers. Thus, research implies that expected legitimacy and financial gains are high by applying *compliance* and can consequently explain why SMEs do not seem to make demands or try to reach a compromise with customers' expectations regarding implementation of different digital solutions. As covid-19 has change the traditional work pattern for several sectors, the empirical data show that the companies in the technology sector have gained an advantage and increased openness in their

customer networks to adopt to new solutions. Thus, the customers seems to be more lenient to be open for suggestions from the SMEs, as large established firms report that there has been a large change in their customer network regarding the need for digital solutions because of covid-19.

In situations of uncertainty, Oliver (1991) and Powell & DiMaggio (1991) suggest that organizations either consciously or unconsciously emulate their successful competitors. In relation to digitalization, this means that technology companies use their competitors as a frame of reference when determining digital strategies (Mol & Birkinshaw, 2009). Based on the empirical data material, both the larger companies and the SME companies use resources to develop their own systems and tools. Thus, they can imitate the success of others when it comes to digitalization. Furthermore, it appears that larger firms at a higher rate have needed some time to adjust to the environment during the pandemic, compared with the SMEs. The SMEs has not have had the need to implement major organizational changes during the pandemic. Thus, and it will be difficult to identify an imitating pattern. In any case, a pattern of change has been analysed at the larger companies. Larger companies have had to adapt to a greater extent than SMEs and the adaptation process of large established companies, which follows an imitative pattern along the SMEs current work structure. Established companies have had to adapt to an innovative, agile structure which is something SMEs in the technology sector has been working from prior to the pandemic.

According to Galaskiewicz & Wasserman (1989), decision-makers primarily imitate actors they know and trust (Oliver, 1991), which the empirical findings also suggest. Collected data shows that SMEs in the technology sector are often in contact with their colleagues in the technology sector and described it as a way to capture good ideas and solutions. Additionally, this applies to the larger companies that work closely with the companies they provide services to, which provide feedback on service delivery and what services that are required and needed. This coincides with previous literature on social capital, which suggests that companies use their social links to identify “*knowledge gaps*” (Wang & Noe, 2010). Thus, this indicate that the technology companies are part of a larger social network, where the actors exchange information and experiences with various digital tools and solutions between them. Previous research also shows that smaller organizations that devote fewer resources to strategic staff to a greater extent base their decisions on experience,

knowledge, and social connections (Jansen et al., 2011; Liberman-Yaconi et al., 2010). The companies' affiliation with competitors can therefore be considered as part of their social capital.

Furthermore, firms in the technology sector form larger social network, where the actors actively seeks and shares information to stay up to date regarding digitalization. However, the empirical data do not say anything about the extent to which respondents are mimic their competitors, or how much the organizations are influenced by their competitors. At the same time, the empirical data show that many of the same digital solutions systems are used internally, which implies that there are great similarities between the organizations (SMEs and large established firms).

The actors' "*willingness*" to share information can possibly be explained based on social exchange theory, which states that people feel obliged to give something back when they themselves receive something (Cropanzano & Mitchell, 2005). However, the data collected does not say anything about the extent to which the respondents follow their competitors, or how much influence the competitors do have. On the other hand, the empirical data material shows little variation in the respondents' attitudes to and use of digital tools and gives the impression that there are great similarities between SME companies and larger companies regarding the application of digital solutions. An explanatory reason why SMEs in the technology sector have come a long way in digital development may be high competition, high human capital, and more successful companies to imitate compared to other sectors.

5.3 Customers decide in the service-client relationship

Like Granovetter (2005), the empirical data show that good customer relations are important because they control the technology firms access to information, in the sense that it can affect how willing the customer is to share information. The customers must give the technology companies knowledge of their business if they are to deliver good digital solutions, which highlights the fact that the service-client relationship is characterized by information asymmetry. According to our empirical data, sufficient information is necessary to provide the customer with good solutions, and to the extent that the customer is cooperative and open about all issues regarding their business it becomes easier to create better and seamless solutions. A mutual relationship of trust is therefore

considered to be crucial in SMEs. The larger companies can be more lenient as they have more customers, but also emphasize the importance of a mutual relationship of trust to deliver the best possible services. This is also supported by previous research which shows that frequent interaction creates close ties and encourages the exchange of sensitive information. Affiliation with the customer, and the trust between them, can be considered as part of the technology companies' social capital. This is because good customer relations are believed to facilitate interaction and, which according to Coleman (1998), is an important characteristic of social capital.

Furthermore, this indicates that the relationship between technology companies and customer is built around transactional agreements that goes beyond the purely financial transactional contract, and consequently makes it possible to draw conclusions from the theory of psychological contracts. In Chapter 2, psychological contracts are defined as “*individual beliefs, shaped by the organization, regarding terms of an exchange agreement between the individuals and their organization*” (D. Rousseau, 1995, p. 9). Psychological contracts are subjective, and state what the parties involved are to contribute and what they want to get out of the relationship. According to the empirical data material, good customer relations are important for accessing relevant customer data, as sufficient information is a necessity for performing delivering optimal services. Customers are perceived to be equally concerned with the information and knowledge the technology company possesses, where the technology companies can provide advice on how the customer can improve their systems, routines, or business otherwise. This is especially true for larger companies, where the companies to a greater extent can challenge the customer and provide input on improvements. As explained by Cropanzano & Mitchell (2005), this leads to a mutual obligation or dependence between those involved, which indicates that both parties should be motivated to increase the level of cooperation to ensure access to each other's information. Additionally, failure to meet customers' requirements can lead to a breach of the psychological contract and might result in customers become less willing to share information, or in the worst case choose to change the service provider.

Moreover, another characteristic of relational contracts is that they are often open and dynamic (D. M. Rousseau & Parks, 1993), which can be interpreted as meaning that the terms of the transactional agreement can be changed over time. Based on the empirical analysis, the relationship between the technology companies and the customers has changed somewhat over time due to

increased digitalization in general. Furthermore, it appears that the expected response time has changed considerably over the years, but not because of covid-19. Moreover, it is pointed out that the customer places greater requirements on the technology companies' availability now than earlier. Thus, both expectations can to a certain degree be linked to increased digitalization. The most prominent change in the technology companies' approach to the customer is an increase is regarding communication, where most of the communication has become by digital solutions. Both large established companies and SMEs strive for the most efficient communication in the meeting with the customer, which means that a larger part of the contact with the customers takes place via e-mail, but telephone conversations and video conferences have to a greater extent taken over for the physical meetings. According to the empirical analysis, this can largely be explained by the pandemic outbreak of covid-19, especially when it comes to video conference. Collected data suggests that digitalization has made it easier for the customer to contact the technology companies, but not all companies experience that the barrier to contacting the technology companies has been reduced. The digital communication is perceived by SMEs as very efficient, timesaving, and a clear reduction of travelling costs. This applies both in the form of personal burden, as well as in the form of financial burden for companies. However, it appears that digital communication makes it more difficult to read the customer, and for internal communication in the larger companies, so that there is more uncertainty about whether the customer perceives and understands the message of what is conveyed digitally.

6. Conclusion

In this thesis, the phenomenon of digitalization and strategic measurements in the technology sector because of covid-19 has been discussed based on theory and new empirical material. The research question throughout the research process has been “Which strategic assessments do technology firms make regarding digitization due to covid-19, and why?”, to answer the research question a research model has been prepared, that that summarizes the research questions and relevant theory. The research model suggests that both internal and external factors influence firms’ strategic assessments due to covid-19.

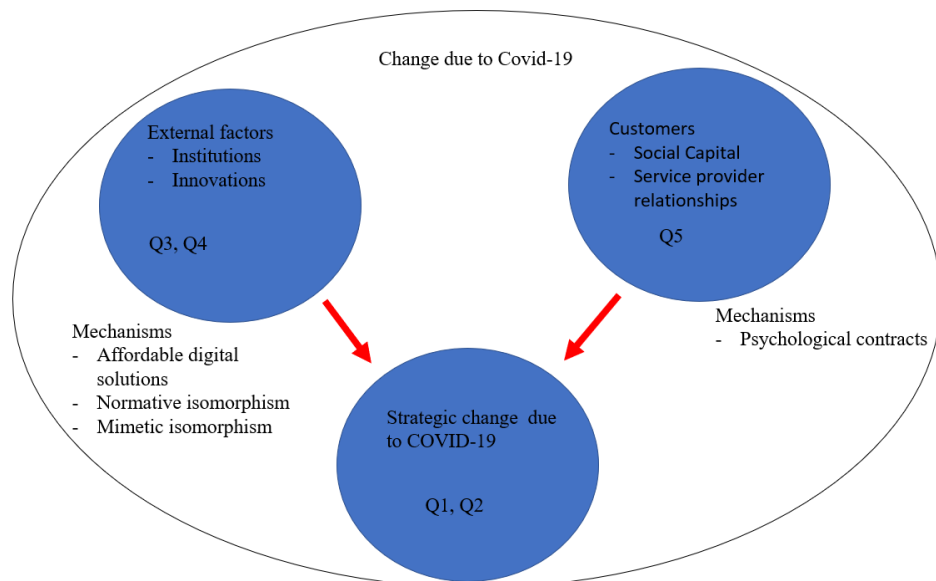


Figure 2 - Interpretation of factors to cause digital change because of covid-19, relation to the research question, and sub questions.

As presented before, the figure indicates that there are several factors that in turn would make companies change their strategies. SME and large established firms in the technology sector are affected by their external environment, in the form of requirements from the authorities, expectations from customers and from society in general. The empirical analysis and discussion show that technology firms are experiencing conflicting requirements and expectations from their customers, which affects perceived pressure for digitalization. In those cases where customers' expectations are inconsistent with the technology firm's internal goals and where it to a degree limits the company's own work towards digitalization. Nevertheless, the findings from the analysis indicate that SMEs in the technology sector will largely try to align with customers' expectations if this does not alter their services completely, whereas larger firms to a greater degree *compromise* with their customers. That SME firms in the technology sector choose to accept the institutional

pressure can be justified on the basis that it might affect customer satisfaction and potentially the length of the customer relationship. In other words, the expected financial gains are high when complying with the customer, which consequently explain why SMEs in the technology sector do not seem to make demands or try to compromise with customer expectations.

Additionally, findings from the analysis show that digitalization in the technology sector first and foremost is about how new technology can improve and streamline existing work processes. Here, there are no clear differences between SMEs and large established companies. One of the reasons is that the technology companies had already implemented several digital solutions prior to the pandemic, which made the transition to digital solutions more seamless. Another important finding is that few of the companies, by definition, have a formalized strategy regarding digitalization. The large established companies nevertheless have a conscious relationship concerning digitalization and have largely incorporated the ideas involving digital solutions into their overall strategy. Furthermore, SMEs in the technology sector have employees with high competence, and even though they do not have a formalized digital strategy, the organization within the company have clear expectations of what is to be done and not in terms of digitalization. This contrasts with the large established firms, where there are clear strategies regarding digitalization, or an overall strategy where digitalization is implemented. Hence, the empirical data in the study suggest that SMEs use a reactive strategic approach to digitalization, while large established companies use an active strategic approach.

The SME's approach does not necessarily correspond to a passive attitude towards digitalization. In the literature this is described as a strategy under the label “Active Wating”. Therefore, based on the empirical data and the theory, the findings conclude that SMEs have a strategic relationship regarding digitalization, and that their choice not to have a defined strategy can be a strategic choice. Furthermore, firms’ strategic assessments are mainly affected by internal conditions, and in particular the technology companies' relationship with the customer. This does not mean that companies in the technology sector are unaffected by their external environment. On the contrary, the findings rather indicate that the external pressure for innovations has been too weak to have had a significant effect on the companies, as the technological solutions had already been implemented prior the pandemic outbreak of covid-19. Moreover, the findings indicate that there

has been more interest for adopting the digital solutions that have already been developed, which indicate that covid-19 has accelerated the digitalization process, where the technology sector has been in the forefront of implementation and adaptation of technological solutions like cloud computing, AI, big data computing, and IoT, which other sectors seems to be more open to adopt and utilize. Hence, technology firms see a clear advantage due to their digital adaptations and innovation.

Consequently, the study concludes that there have been some significant changes in the technology sector because of covid-19. First and foremost, the technology sector has had a revolution when it comes to communication across time and distances because of utilization of video conference, which has reduced traveling expenses and more efficient work conditions. Furthermore, the work force in both SMEs and large established firms have adopted digital tools and systems in their daily work life, which in turn has been adapted because of covid-19. This is believed to continue as the society opens again, but with more of a hybrid solution with some physical meetings. Thus, the technology sectors approach to digitalization has changed because of covid-19. Secondly, firms in the technology sector have had an increase in customer leads because of the pandemic, which in turn has given them more to do, and several firms is thinking on expanding (both SMEs and large established firms). Even though the SMEs did experience some problems regarding new customer shortly after the pandemic outbreak, there has been more positive leads after the initial first six months of the pandemic.

6.1 Future research and limitations

A clear limitation on the work lies in the choice of research object. The companies that contributed to the study were purely technology firms, which means that the results do not give a general picture of all industries, and therefore do not give results that are directly transferable in other contexts. Furthermore, the choice of qualitative method limits the possibility of examining different types of companies in different industries. Thus, further research on digital development can be done towards other sectors. Furthermore, the thesis does not consider how a specific industry or the number of employees a company have, affects its vulnerability to change. Thus, the study also opens a point of view on how the perspective of competitive advantage has developed over time.

Additionally, organizations are no longer governed solely by price and supply, but several other aspects. The thesis sheds light on the value of how what is considered legitimate for companies can contribute to a competitive advantage. The interviewees discuss the value of being efficient and flexible through a digital work structure, but also how they expect their external partners to be adapted to this. Thus, creates interest in investigating how a digitalized company can contribute to competitive advantage through efficiency, flexibility, and legitimacy.

Additionally, this thesis concludes that the customer perspective is influential in technology companies, and that the technology development in the technology firms can largely not be attributed to covid-19. However, the study only reflects the technology companies' point of view, and based on the empirical data, a comprehensive understanding of digitalization in the technology companies based on covid-19 cannot be achieved by studying the companies separately from their customers. Although more digital customers are essential for the livelihood of the technology firms, none of the companies make demands or try to compromise on customers' expectations of their deliveries. Therefore, there is a need for a deeper understanding of what makes customers' work towards digitalization, and even more important what might get them to adapt more digital solutions. Therefore, it is recommended that a larger (quantitative) study be carried out for a more detailed survey of digitalization among the customers of the technology companies, and their response to the pandemic and attitudes towards digitalization.

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7. Appendix

7.1 Appendix A - Project description

Forespørsel om å delta som informant for en master oppgave om endringer i organisasjonen som følge av covid-19.

Bakgrunn:

Jeg er en student ved Handelshøgskolen ved UiS som skal skrive masteroppgave innen organisasjon, ledelse og digitalisering i vår. Tema for oppgaven er digitale endringer som følge av covid-19. Jeg ønsker å gjennomføre studien i en rekke bedrifter, og håper at du/dere vil delta som informant(er).

Formål:

Covid-19 har bidratt til drastiske endringer i samfunnet. Som følge av offentlige pålagte nedstengninger så har flere bedrifter måtte endre deler, eller hele sin organisering for å imøtekomme omlagte krav fra kundebasen. Digitalisering har i flere år vært en fellesnevner i debatten for økt produktivitet og konkurransene. Har covid-19 bidratt til en raskere omstilling mot et mer digitalt samfunn som kan gi konkurransefortrinn i norske bedrifter i fremtiden? Hensikten med masteroppgaven er å studere hvorvidt covid-19 har påvirket digitaliseringen i norske bedrifter, og om den eventuelle påvirkningen vil bidra til varige endringer, og konkurransefortrinn.

Hva innebærer deltakelse i studien?

I studien er det ønskelig å intervju totalt 7-10 ledere i ulike firmaer for å få innsikt i hvordan/om covid-19 har endret noe ved digitaliseringen internt i organisasjonen. Informantene vil få tilsendt intervjuguiden i god tid før selve intervjuet. Selve intervjuet vil holdes digitalt på en plattform som passer bedriften (zoom, teams, eller annen preferanse). Intervjuet blir tatt opp på lydfil. Umiddelbart etter at intervjuet er gjennomført vil det bli transkribert og lydfilen slettet. Bedriftene og informantene som har deltatt, vil anonymiseres i oppgaven. Intervjuet vil vare mellom 30-60 minutter.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrevet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- Dataene uthentet vil være tilgjengelig for behandling under oppgavens varighet for undertegnede og veileder.
- Navnet og kontaktopplysningene dine vil jeg erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data, lagre datamaterialet på forskningsserver, på egen kryptert fil.
- Undertegnende vil stå for transkripsjon av intervjuet.

Som deltaker i oppgaven vil du ikke gjenkjennes i publikasjon.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Opplysningene anonymiseres når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er 15.06.2021. Etter prosjektet er avsluttet vil alt datamaterialet slettes, og eventuelle personopplysninger vil være anonymisert i oppgaven.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke. På oppdrag fra Universitetet i Stavanger har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke opplysninger vi behandler om deg, og å få utlevert en kopi av opplysningene
- å få rettet opplysninger om deg som er feil eller misvisende
- å få slettet personopplysninger om deg
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger

Hvis du har spørsmål til studien, eller ønsker å vite mer om eller benytte deg av dine rettigheter, ta kontakt med:

- Universitetet i Stavanger ved Atle Ravndal. Kontaktinfo: e-post: barte.ravndal@uis.no, tlf: 51831593
- Vårt personvernombud kan nås på: personvernombud@uis.no

Hvis du har spørsmål knyttet til NSD sin vurdering av prosjektet, kan du ta kontakt med:

- NSD – Norsk senter for forskningsdata AS på epost (personverntjenester@nsd.no) eller på telefon: 55 58 21 17.

Min kontaktinformasjon er:

Daniel (mobil 41 30 36 49; e-post wipsplash_@hotmail.com)

Med vennlig hilsen

Daniel André Hamre Bjørnstøl

7.2 Appendix B - Interview guide

- 1) Opplever du at din måte å jobbe på har endret seg etter utbruddet av covid-19?
- 2) Har det blitt gjennomført interne forandringer etter utbruddet av covid-19?
- 3) Har det vært vanskelig å tilpasse seg til digitalisering basert på et økonomisk perspektiv for bedriften?
- 4) Hvordan opplevde du bedriftens ressursbruk mot digitalisering i forkant av covid-19 utbruddet?
- 5) Hvordan opplever du bedriftens ressursbruk mot digitalisering i etterkant av covid-19 utbruddet?
- 6) Kan du beskrive hvordan kundekontakten, og kontakten i ditt profesjonelle nettverk var i forkant av covid-19 utbruddet?
- 7) Opplever du at det har vært en endring etter covid-19 utbruddet?
 - a) Kan du beskrive hvorledes du merker disse endringene?
 - b) Har bedriften gjort tiltak for å minimere endringene, eller fasilitere for bedre kundekontakt?
- 8) Hvordan vil du beskrive «digitalisering»?
- 9) Hvilke muligheter og utfordringer forbinder du med digitalisering i din organisasjon?
- 10) Hvilke digitale verktøy og digitale løsninger har dere tatt i bruk i forkant av covid-19?
- 11) Hvilke digitale verktøy og digitale løsninger har dere tatt i bruk som følge av covid-19?
- 12) Opplever du at det er et ønske å benytte disse verktøyene dersom man går over til «et åpent samfunn» igjen?
 - a) Fra de ansatte
 - b) Fra ledere
 - c) Fra kunder
- 13) Opplever du at det er et digitaliseringspress i bedriften?
 - a) Fra hvem, eventuelt?
- 14) Hvordan vil du uttrykke selskapets strategi og fokus når det kommer til digitalisering?
- 15) Hvordan forholder dere dere til eksisterende og mulige klienters digitale systemer og arbeidsmetoder?

16) Opplever du at selskapet har ervervet nye digitale verktøy, for eksempel zoom, parallelt som oppstod pandemien?

a) Opplever du at intensjonen er å bevare de ulike digitale verktøyene dersom samfunnet åpner opp som før pandemien?

17) Opplever du at det er viktig for bedriften å ha gode kunderelasjoner?

a) Hvordan ble dette opprettholdt før covid-19

b) Hvordan opprettholdes kunderelasjonene etter covid-19 utbruddet?

c) Opplever du at opprettholdelsen av kunderelasjoner vil være varig endret som følge av covid-19 utbruddet? Hvis ja, hvorledes?

18) Hva gjør dere for å utvikle og opprettholde gode og langvarige kunderelasjoner i bedriften?

19) Hva forventer kundene av dere og motsatt?

a) Har disse forventningene endret seg som følge av økt digitalisering i samfunnet?

- Hvor ofte møtte dere kundene deres ansikt-til ansikt i forkant av covid-19?

b) Har disse forventningene endret seg som følge av covid-19 utbruddet?

- Hvor ofte møter dere kundene deres ansikt-til-ansikt etter covid-19 utbruddet?

c) Hvordan kommuniserer bedriften med kundene deres?

d) Opplever du at det har dukket opp nye forventningene mot bedriften fra kontaktnettverket etter covid-19 utbruddet?

20) Opplever du at bedriften har møtt motstand fra kunder når det kommer til å ta i bruk digitale verktøy?

21) Kan du beskrive hvordan bedriften jobber mot digitalisering i organisasjonen?

a) Har bedriften en spesifikk avdeling som jobber med digitale endringer, eller jobber organisasjonen som helhet mot digitalisering?

7.3 Appendix C - Approval from the Norwegian Centre of Research Data (NSD)

Prosjekttittel

Strategic changes in Norwegian technology firms due to covid-19

Referansenummer

546018

Registrert

07.04.2021 av Daniel André Bjørnstøl Hamre - da.hamre@stud.uis.no

Behandlingsansvarlig institusjon

Universitetet i Stavanger / Handelshøgskolen ved UiS

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Bjarte Ravndal, barte.ravndal@uis.no, tlf: 51831593

Type prosjekt

Studentprosjekt, masterstudium

Kontaktinformasjon, student

Daniel A.B Hamre, 233531@uis.no, tlf: 41303649

Prosjektperiode

30.04.2021 - 15.06.2021

Status

12.05.2021 - Vurdert med vilkår

Vurdering (2)

12.05.2021 - Vurdert med vilkår

NSD bekrefter å ha mottatt et revidert informasjonsskriv/endret dokument. Vi gjør oppmerksom på at vi ikke foretar en vurdering av skrevet/dokumentet, og vi forutsetter at du har foretatt de endringene vi ba om. Dokumentasjonen legges ut i Meldingsarkivet og er tilgjengelig for din institusjon sammen med øvrig prosjektdokumentasjon. Vurderingen med vilkår gjelder fortsatt.

21.04.2021 - Vurdert med vilkår

NSD har vurdert at personvernulempen i denne studien er lav. Du har derfor fått en forenklet vurdering med vilkår.

HVA MÅ DU GJØRE VIDERE?

Du har et selvstendig ansvar for å følge vilkårene under og sette deg inn i veiledningen i denne vurderingen. Når du har gjort dette kan du gå i gang med datainnsamlingen din.

HVORFOR LAV PERSONVERNULEMPE?

NSD vurderer at studien har lav personvernulempe fordi det ikke behandles særlige (sensitive) kategorier eller personopplysninger om straffedommer og lovovertrедelser, eller inkluderer sårbare grupper. Prosjektet har rimelig varighet og er basert på samtykke. Dette har vi vurdert basert på de opplysningene du har gitt i meldeskjemaet og i dokumentene vedlagt meldeskjemaet.

VILKÅR

Vår vurdering forutsetter:

At du gjennomfører datainnsamlingen i tråd med opplysningene gitt i meldeskjemaet

At du følger kravene til informert samtykke (se mer om dette under)

At du laster opp oppdatert(e) informasjonsskriv i meldeskjemaet og sender inn meldeskjemaet på nytt.

At du ikke innhenter særlige kategorier eller personopplysninger om straffedommer og lovovertrедelser

At du følger retningslinjene for informasjonssikkerhet ved den institusjonen du studerer/forsker ved (behandlingsansvarlig institusjon)

Dersom du er student skal du dele meldeskjemaet med prosjektansvarlig (din veileder). Del ved å trykke på knappen «Del prosjekt» øverst til venstre i meldeskjemaet. Prosjektansvarlig bes akseptere invitasjonen innen en uke. Dersom invitasjonen utløper, må han/hun inviteres på nytt.

Om deler av utvalget vil kunne gjenkjennes direkte eller indirekte i publikasjon må du innhente eksplisitte samtykker. Vi anbefaler at utvalget gis anledning til å lese igjennom egne opplysninger og godkjenne disse før publisering.

KRAV TIL INFORMERT SAMTYKKE

De registrerte (utvalget ditt) skal få informasjon om behandlingen og samtykke til deltakelse. Informasjonen du gir må minst inneholde:

Studiens formål (din problemstilling) og hva opplysningene skal brukes til

Hvilken institusjon som er behandlingsansvarlig

Hvilke opplysninger som innhentes og hvordan opplysningene innhentes

At det er frivillig å delta og at man kan trekke seg så lenge studien pågår uten at man må oppgi grunn

Når behandlingen av personopplysninger skal avsluttes og hva som skal skje med personopplysningene da: sletting, anonymisering eller videre lagring

At du behandler opplysninger om den registrerte (utvalget ditt) basert på deres samtykke / At du behandler opplysningene om dine deltagere basert på deres samtykke

At utvalget ditt har rett til innsyn, retting, sletting, begrensning og dataportabilitet (kopi)

At utvalget ditt har rett til å klage til Datatilsynet

Kontaktopplysninger til prosjektleder (evt. student og veileder)

Kontaktopplysninger til institusjonens personvernombud

Ta gjerne en titt på våre nettsider og vår mal for informasjonsskriv for hjelp til formuleringer:

<https://www.nsd.no/personverntjenester/fylle-ut-meldeskjema-for-personopplysninger/sjekkliste-for-informasjon-til-deltakerne/>

Når du har oppdatert informasjonsskrivet med alle punktene over laster du det opp i meldeskjemaet og trykker på «Bekreft innsending» på siden «Send inn» i meldeskjemaet.

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 15.06.2021.

FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

Dersom du benytter en databehandler i prosjektet, må behandlingen oppfylle kravene til bruk av databehandler, jf. art 28 og 29.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

NSD SIN VURDERING

NSDs vurdering av lovlig grunnlag, personvernprinsipper og de registrertes rettigheter følger under, men forutsetter at vilkårene nevnt over følges.

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Forutsatt at vilkårene følges, er det NSD sin vurdering at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres og som den registrerte kan trekke tilbake. Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER

Forutsatt at vilkårene følges, vurderer NSD at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen

formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål

dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet

lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

Forutsatt at informasjonen oppfyller kravene i vilkårene nevnt over, vurderer NSD at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), dataportabilitet (art. 20).

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

MELD VESENTLIGE ENDRINGER

Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde:

<https://www.nsd.no/personverntjenester/fulle-ut-meldeskjema-for-personopplysninger/melde-enderinger-i-meldeskjema>

Du må vente på svar fra NSD før endringen gjennomføres.

OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!