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Master thesis

**How dynamic capabilities have helped firms seize digital
transformation during the COVID-19 pandemic**

Specialization in Business Analytics and Digital Management

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YES
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Two years as MSC students at Inland University is coming to an end and this marks the final piece of the puzzle. Writing our master thesis has been experienced as a long journey, but at the same time passed by extremely quickly. The study has given us the opportunity to expand our knowledge while at the same time taught us to be more critical. The skills that we acquired throughout this study has sparked the desire for further knowledge and the wish for developing ourselves further.

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Abstract

COVID-19 and its impact on digital transformation is a subject of great interest among many industries. This thesis aim to investigate how firms have utilized dynamic capabilities to seize digital transformation during COVID-19. Thus, this study raises two main questions, (1) how and which dynamic capabilities has been utilized, (2) and how digital transformation is seized through these capabilities. There is also discussions and analysis of the impact and ramifications caused by COVID-19. We have utilized an explorative qualitative research method to investigate these questions further. The research method is done through five semi-structured interviews with five saving banks in Norway. In order to categorize and address the questions used in our interviews we have utilized a framework of dynamic capabilities in which we have sorted the different information in three different categories.

Findings indicate that the banking firms themselves somewhat have negated most of the negative effects of COVID-19. Their already existing internal dynamic capabilities and digital work approach has helped them in this regard. However, their environment consisting of customers and other third-party actors has been affected in a much larger scale. In order to protect and help their customers the bank has given them more digital accessibility and freedom.

During COVID-19 most interactions with third-party actors has been conducted on digital platforms. The findings suggests that this has made interactions and meetings much more efficient for all participants. There are however concerns of the long-term effects of the digital interactions. This is connected to relational and cultural values that could be negatively affected in the long-term.

COVID-19 has had a reinforcing and accelerating effect on decision making, strategy planning and implementation processes. Throughout our methodical approach we have found that several internal and external factors has affected how the banks has utilized dynamic capabilities to seize digital transformation.

1. Introduction

This thesis was inspired by Seetharaman's (2020) article : "Business models shifts : Impact of Covid-19". Businesses all around has faced big difficulties and challenges because of COVID-19. Seetharaman (2020) argues that this crisis has offered businesses unique opportunities for digital transformation, which requires agile and fast developing capabilities. This concept is something we wanted to research further in order to create insight and understanding on the role dynamic capabilities has played for businesses in order to explore and seize opportunity for digital transformation. To succeed with this, we had to create an overview of utilized capabilities and how these are affecting the processes of digital transformation within firm during COVID-19.

Dynamic capabilities has been defined and understood with different perspectives by scholars and there is no universal set definition. In this perspective dynamic capabilities are conceptualized into how competencies can be integrated, built or reconfigured in order to match changing environments (Teece et al., 1997) or how they can be seen as "combinative capabilities" where resources within the organization can be obtained and synthesized and then generated into new applications (Kogut & Zander 1993). Krzakiewicz & Cyfert (2017) argues that dynamic capabilities must be considered as a complex process of establishing a unique collection of effective resources. Furthermore, they argue that the businesses also must consider due account of their capabilities while they maneuver in unpredictable and unstable environments. Yu & Ramamurthy (2011) states that in the modern organizational context when there are often many volatile changes in markets and environments, it is required to make rapid responses and exploit changes as they appear (i.e., COVID-19 crisis) with the use of technological capabilities.

Digital transformation is a concept that lacks a clear definition. Fitzgerald et al., (2013) describes digital transformation as the process of using new digital technologies to enable *major business improvements* which can enhance customer experience, streamline current operations, or construct new business models. Hartl & Hess (2017) describes it as the process of *transforming* and *digitalize* their entire business models and organizational conditions. Summarizing the different definitions from different scholars one can draw some concluding characteristics and understand digital transformation as a major organizational change driven or enabled by digital technology, which changes how the business is conducted (Osmundsen,

Iden & Bygstad, 2018; Hartl & Hess, 2017; Bilgeri, Wortmann & Fleisch, 2017; Mueller & Renken, 2017).

Both dynamic capabilities and digital transformation are concepts that has been researched and discussed by a large number of scholars (i.e., Teece et al., 2016; Osmundsen et al., 2018; Weritz et al., 2020) and consultancy firms (i.e., McKinsey 2020; Deloitte 2018) in recent years. Warner & Wäger (2019) has during their qualitative study tried to construct a path between dynamic capabilities and digital transformation.

In all the discussions and different definitions of dynamic capabilities and digital transformation, there are literature gaps yet to be fully explored. As noted by Krzakiewicz & Cyfert (2017) there is little research done on how dynamic capabilities can be used as a theoretical and methodical framework for strategic choices within modern businesses. Aramburu et al., (2021) opens up for future research looking at the impact of COVID-19 (a crisis) in small-medium businesses and enterprises in regard to digital transformation, both in terms of firm's capabilities but also characteristics. These and other literature gaps will be further discussed later in the thesis, but there is no doubt that this is a subject of high interest among many scholars and firms.

1.1 Research question and profile of the thesis

The thesis is based on the discussions and questions raised from Seetharaman (2020) and research is conducted on the following research problem :

How dynamic capabilities has helped firms seize digital transformation during the COVID-19 pandemic.

Research questions :

1. *How are dynamic capabilities being utilized ?*
2. *How is digital transformation seized through dynamic capabilities?*

In order to answer the research topic, we first wanted to investigate how dynamic capabilities and digital transformation are being utilized within the firms. After identifying and discussing dynamic capabilities and digital transformation, we looked at how digital transformation is

seized through these dynamic capabilities. In the literature we created a fundament and understanding of dynamic capabilities and digital transformation. Both of these terms are understood and researched differently and there is no universal agreed definition for either terms. With the fundament in place, we wanted to bridge the dynamic capabilities and digital transformation concepts together. Based on the findings in the literature, we constructed a methodical approach on how we investigated the research area and made attempts to fill some literature gaps.

1.2 Boundaries of the research

The scope of the thesis is limited to looking at firms located in the Norwegian banking business. How have the banking industry and their environment been affected by the pandemic? Which dynamic capabilities are significant for seizing digital transformation in this industry? We reviewed existing literature and created an overview of the potential capabilities and categorized them under a theoretical framework in the theoretical chapter of the thesis. Due to time constraints, we have limited our number of informants. The main area of interest were located with the strategic and organizational aspects on decision making in the Banks. We did not investigate how COVID-19 or the new technological innovations has impacted the banks in terms of their profitability.

1.3 Structure of the thesis

In order to create some clarity of the approach we will explain how the research process have been constructed. We started with a review of the literature and the theoretical aspects, presenting different perspectives and key elements relevant for our research question. The next step was to identify a research method that fitted our approach and collected the data from the chosen informants of the thesis. After the interviews, our goal was to categorize the information gathered into a framework. The last step was to discuss and analyze the data from the interviews of the informants, including the research questions and both practical- and theoretical implications of the thesis.

2. Theory

Since the goal is to identify how dynamic capabilities has helped dealing with a crisis such as the covid-19 pandemic, we will first start with creating an in depth understanding of what they are. This chapter presents and reviews several different perspectives and how dynamic capabilities both compliment but also differ from each other. Based on the literature and existing models, we present a framework for dynamic capabilities. In the next chapter we will look closer on how new technology has affected how businesses manage their capabilities in regard to digital transformation. In the final part of this chapter, we discuss and identify gaps found in the literature.

2.1 Searching process and literature review

In the early parts of the assignment, we quickly targeted COVID-19 as an interesting research context for the master thesis. We started the searching processes utilizing search engines from Oria, Google Scholar and later on Emerald Insight. We wanted to include digitalization and digital transformation as a research fundament. After narrowing down interesting themes and articles, we found the article published by Seetharaman (2020). Many of the challenges regarding the pandemic was discussed with a few different perspectives. The key theme that we found intriguing for further research was dynamic capabilities and the possible affects they had on digital transformation during a pandemic on the scale of covid-19. We recognized the themes of dynamic capabilities from several of our subjects from the master program and found it interesting to investigate their interaction with digital transformation. We started our theoretical approach to the thesis starting with the fundament for dynamic capabilities.

In our approach for literature review we started with the concept of dynamic capabilities. We tried to create a fundament of a few perspectives on the concept of dynamic capabilities and found that there was no clear definitions on the term. We tried to include and introduce a few noticeable perspectives within the literature that was noteworthy for our approach. With our research question in mind, we chose to utilize the Teece (2007) framework of dynamic capabilities (sensing, seizing and transforming) as a gateway to connect dynamic capabilities and digital transformation with. We also utilized this framework as our methodical approach to categorize different findings.

There was a need to include some theory foundations on digitalization, digital innovation and digital transformation. Our goal here was to identify both similarities and differences between

these concepts. We then included the supplementary literature of the dynamic capabilities framework by Warner & Wäger (2019). This article discussed how one should build dynamic capabilities for digital transformation and was very significant for our approach. Based on the theory presented and earlier mentioned literature gaps we started working towards constructing our methodical approach.

2.2 Dynamic Capabilities

The concept of dynamic capabilities and their purpose for organizations has been discussed ever since the publications by Teece & Pisano (1994) and Teece et al., (1997). These scholars argued that dynamic capabilities were an indication on a firm's potential on how they integrate and reconfigure both internal and external competencies in order to match the everchanging and volatile environment. The term "dynamic" is a reference to a firm's capacity to renew competencies in order to adapt to the changing business environment. "Capability" emphasizes the role of strategic implementation to properly adapt, integrate and reconfigure both internal and external skills, in order to keep up with the requirements set by the changing environment (Teece et al., 1997; Teece & Pisano, 1994).

Another takeaway from the publication of Teece et al., (1997) is the importance of firms organizational processes, positions and paths as the key to competitive advantage (Teece et al., 1997). Processes are the firms organizational routines, learning and current practice. Positions are their current possession of technology, intellectual capital, customer base and relations to their external stakeholders. Paths is a reference to the availability of new strategic approaches for the firm. Teece et al., (1997) clarifies that organizational paths are shaped by *path dependencies*. This is the notion that "history matters" indicating that the firms future path is greatly affected by their previous investments and position.

2.2.1 Resource-Based View and Environments

The definition of dynamic capabilities by Teece & Pisano (1994) and Teece et al., (1997) left room for different interpretations and has since fueled many debates between scholars with different perspectives and backgrounds. Easterby-Smith et al., (2009) notes that later discussions has been focused on how these capabilities are constituted, what attributes they possess, how they are recognized and where they derive from.

When discussing the earlier approaches on literature Teece et al., (1997) mentions the resource-based perspective (shortened to RBV) as a fundamental building block towards

dynamic capabilities. The resource-based perspective is the notion that firm-specific *capabilities* and assets, together with isolating and unique mechanisms are the fundament for a firm's performance (Teece et al., 1997; Wernerfelt, 1984). However, in literature discussing the RBV perspective there is little discussion in regard to the properly explaining the nature of these isolating mechanisms that is supporting and maintaining competitive advantage (Teece et al., 1997). Ambrosini et al., (2009) argues that when discussing RBV and dynamic capabilities one must first understand the notion of stable or dynamic environments. They explain that the RBV describe sources of sustained advantage in stable environments while the dynamic capability view offers guidance to achieve sustained resource-based advantage in dynamic environments. There are managerial implication towards identifying environmental dynamism, and they must consider if the changes is in their external environment and conclude that there is need for change (Ambrosini et al., 2009). One can define these dynamic environments as conditions where managers detect fast paced and unpredicted changes. Ambrosini et al., (2009) label key capabilities utilized by firms in these environments as *renewing and regenerative dynamic capabilities*. The purpose of renewing capabilities are to alter the existing resource stock in order to obtain or maintain sustained advantage within the dynamic environment. Regenerative capabilities are utilized to move from previously used change practices into new dynamic capabilities (Ambrosini et al., 2009). Especially regenerative capabilities are important when dealing with environments that are unsettled, volatile and uncertain. However, it must be noted that dynamic capabilities and performance does not automatically mean that a firm has or will obtain sustained advantage (Helfat et al., 2007; Ambrosini et al., 2009). Managers must be able to respond appropriately to the degree of dynamism and only firms with the required dynamic capabilities matching the degree of dynamism can expect a positive outcome (Ambrosini et al., 2009).

2.2.2 Routines and Innovative capabilities

While acknowledging earlier researchers Eisenhardt & Martin (2000) argues that dynamic capabilities must be evaluated based on the market conditions and the volatility of the environment. In moderately dynamic markets the perspective of organizational routines are essential for firms seeking to achieve competitive advantage. These routines include inspecting and continuously improving current knowledge and “rule of thumbs”, followed by implementation of improvements and efficiency. In other words, in stable markets dynamic capabilities are simple and repetitive processes that yields sustained advantage. If we move on to more volatile market conditions and changes other capabilities must be considered.

Eisenhardt & Martin (2000) notes that dynamic capabilities in these environments depend more on new knowledge created specific for situations that emerge. The nature of routines in these conditions are slightly changed into *capability* to adapt to changing circumstances (Eisenhardt & Martin, 2000). The idea of limiting dynamic capabilities to just organizational routines and rules is something that has narrowed the broader definitions given by Teece & Pisano (1994) and Teece et al., (1997). At the same time, the approach of Eisenhardt & Martin (2000) makes it easier to identify the nature of dynamic capabilities and how they can be managed.

Zollo & Winter (2002) continues the discussion in regard to the connection between dynamic capabilities and organizational routines. They characterize dynamic capabilities as the behavior of a firms actively aiming towards generating and adapting organizational routines. Dynamic capabilities are in this perspective learned and adapted systematically and modified in order to gain improved effective organizational processes and decisions. This approach generally focuses on three mechanisms : collection and review of past experiences, expressing and facilitate knowledge and knowledge codification (Zollo & Winter, 2002). The goal of this approach is to create innovative routines that can manage to prosper and overcome changes in environments and achieve “improved effectiveness”.

While somewhat ignoring the term *routines*, Lawson & Samson (2001) also approach dynamic capabilities with an innovative perspective. They label them as *innovative capabilities*. In this approach the authors introduces an integrated model of innovation which consists of : mainstream activities, innovation capability and newstream innovation. Mainstream activities is the generic operation of converting the raw resources into products that are offered to the customers. Over time these activities will decline because of market competition, product-cycle limit or other environment changes (Lawson & Samson, 2001). The mainstream will therefore be directed towards investing in innovative newstream in order to utilize new technologies or create new products for the future. In order to connect these two, the firm needs to develop and utilize *innovative capabilities*. Innovative capabilities are not a one-dimensional constructs and consist of seven key elements (see figure 1). Lawson &

Samson (2001) notes that one of these elements, management of technology, is especially important for managing innovative capabilities. Firms being able to link their core ideas into new technological solutions or development is crucial in order to obtain or maintain success and advantage (Lawson & Samson, 2001).

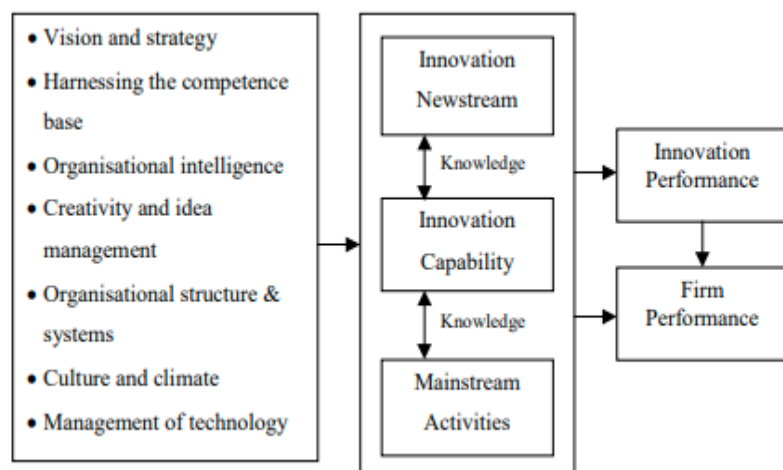


Figure 1: Model of Innovation Capability (Lawson & Samson, 2001)

2.2.3 Conceptualizing the dynamic capability framework

Dynamic capabilities can be perceived in different manners and perspectives. We have chosen in this chapter to include the analytical framework introduced by Teece (2007), later revisited and refined by Teece et al., (2016) and Teece (2018).

In this approach dynamic capabilities can be divided into three different processes: 1. Capacity to sense and conceptualize current opportunities and threats, 2. Ability to seize opportunities and 3. Being able to transform these opportunities by aligning existing capabilities or investing in additional ones (Teece, 2018; Teece et al., 2016; Teece, 2007).

Sensing

It can be argued that in fast paced and fierce competitive environments, customer demands and technological opportunities are in a constant state of unsettlement (Teece, 2007). Being able to *sense* (and *shape*) these opportunities is very much an analytical process of exploring and scanning. Teece et al., (2016) argues that it takes time and networking in order to fully comprehend the importance of the opportunity for both the market and competitors within the environment. In these processes they must assess how technologies will advance and how both competitors and customers respond to these opportunities. The concept of sensing is activities tied to evaluating and searching for what that is proceeding within their environment of shareholders and stakeholders (Teece, 2007).

Within the sensemaking process customers are among the first to recognize potential for new technology applications. The firm supplying the customers must quickly recognize the proper

needs for the customer in order for new application to succeed (Teece, 2007). In addition, firms must also be able to scan and research by tapping into the output of others (i.e., competitors, other industries) make sense of it and evaluate if it can be applicable for themselves. This processes must be done simultaneously as one identify the customer demands (Teece, 2007). This is reminiscent of the notion that firms needs to react with dynamic capabilities that can suit the degree of dynamism that is present (Ambrosini et al., 2009). If successful one can more likely push customers over into new products and services. Furthermore, managers conducting these sense procedures must be able to cut off sticking just to “known-rules”. Teece et al., (2016) argues that while the principle of decision rules based solely on deductive and inductive approaches are important, they create limitations and hurdles for firms that aspire to grow within dynamic and changing environments. Mangers must be able find new methods and approaches that allows them to navigate through uncertainty and this implies that firms must filter technological, market and competitive information and make sense of it (Teece, 2007).

Seizing

After completing the *sensing*, the opportunities must be *seized* through new products, services or processes (Teece, 2007). This process, most of the time, requires some kind of investment into development activity, until a dominant configuration emerges. An important aspect of *seizing* is the notion of being able to maintain and at the same time improve technological competencies and when the arising opportunity is suitable, being able to invest in the correct technologies and composition suited to achieving market successes (Teece, 2007). An interesting managerial aspect to consider is that that the *seizing* (to an extent also sensing) should not be excluded to just the top management team. Felin & Powell (2016) argues that responsibility for these processes should rest among all the employees within the firm. These authors take an example within the Valve cooperation, a company that utilize mechanisms to both encourage and navigate innovative forces from all employees. This however demands that businesses inherit an innovative hierarchical design in order to succeed (Felin & Powell, 2016). The views of Felin & Powell (2016) is supported by Teece et al., (2016) and they explain that sometimes in processes conducting *seizing* activities there may be changes needed within the organizational structure. Firms that operate with “need-to-know” baselines and highly hierarchical structure will struggle to move at a good enough pace to follow the rapid changes in the environment. Information flow between top to bottom may be distorted when reaching the “lower-end” of the organization (Teece et al., 2016). Moving through volatile environments

with a heavy heretical organization structure could be detrimental for firms keeping up with the new demands and expectations from customers, suppliers and other stakeholders. In this regard Teece (2007) criticize scholars narrowing their focus towards routines and rules (i.e., Eisenhardt & Martin, 2000). These ideas and firms focusing on that perspective is too *path dependent* and therefore unable to *seize* innovative solutions. To sum up, the processes of *seizing* require firms to conduct changes under uncertainty not only with concern against competitive forces but also in regard to pay-offs when investing into intangible assets (Teece, 2007).

Transforming

The transforming process consist of realigning existing capabilities while investing in additional ones (Teece, 2007; Teece, 2018). In the transforming phase it is important for the firm to be able to recombine and reconfigure both assets and organizational structure as the firm and environment grows (Teece, 2007). Relying to much of routines and rules in innovative processes could be detrimental, however it must also be noted that these activities are very important when stability is achieved in regard to operational efficiency. One must therefore carefully evaluate when these routines should be altered towards new routines and rulesets (Teece, 2007). Furthermore, managers must consider that changing of routines and rules also affects the organizational culture. Teece (2007) argues that within more hierarchical structures the changes of these activities are very costly and demands careful execution and precision. It often takes a critical change within the environment (i.e., a crisis) in order for these hierarchical organizations to make significant structural changes. The managerial implications to be able to express the need for change and, as noted by Teece et al., (2016), these changes are much easier to implement when the organizational culture welcomes changes.

Kump et al., (2019) notes that transforming also include the manifestations of new business models by implementing the desired changes to routines and organizational structure to ensure that the business inherit the required capabilities to execute the new practices and activities. This processes can be characterized as *strategic renewal* within the organization, with a reconfiguration of different processes within the firm (Kump et al., 2019). The concept of *strategic renewal* inherit much of the same characteristics as *renewing capabilities* where the goal also is to change the existing resource-base into the ones required for the new structure of the environment (Ambrosini et al., 2009).

We have included a figure of the framework by, (Teece, 2018), under to summarize the theoretical implications.

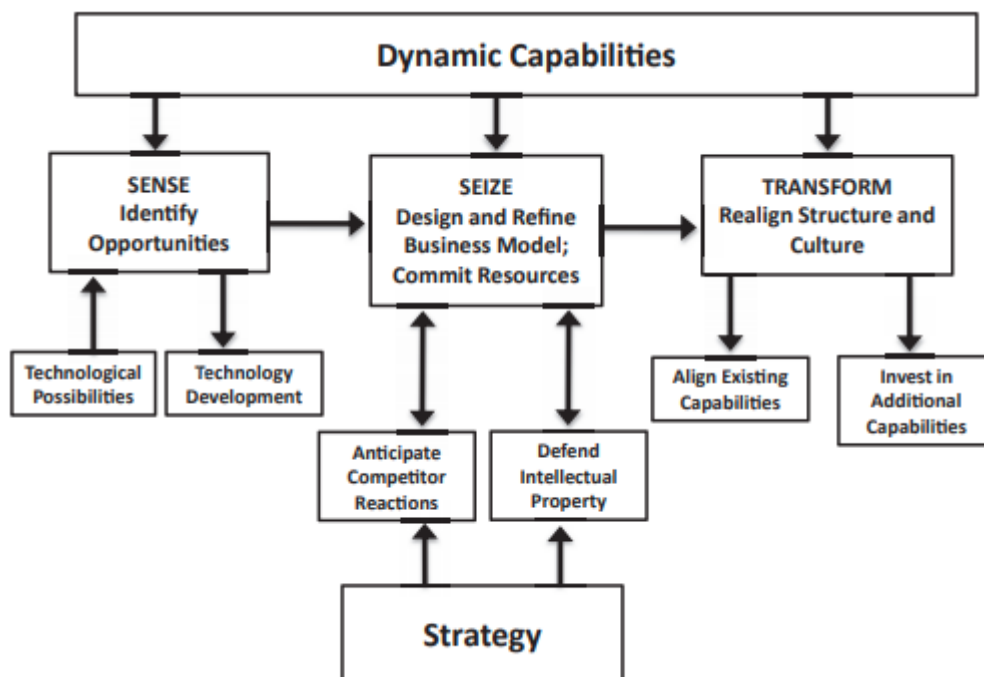


Figure 2 Teece (2018) Dynamic Capabilities Framework Summary

2.3 Digital Transformation

Digital transformation is a concept that is yet to be properly defined. Osmundsen et al., (2018) notes that in order to get a full grasp of the concept one must be able to understand the terms digitalization and digital innovation that is tightly connected to digital transformation.

Digitalization

Digitization is a reference to how firms are leveraging digital technology to modify their socio-technical construction (Osmundsen et al., 2018 ; Yoo et al., 2010). Furthermore, the process of digitalization goes further than just the mechanical encoding of previously manual and analog information work and format (better labeled as digitization) but is extended to the organization of the digital devices and modification on these when needed (Yoo et al., 2010).

When digitalization is in the process of being implemented it modifies business models and practices within the firm to fit the present and future technology (Andersen & Sannes, 2017). In continuation an organization that has gone through a process of digitalization processes can be label themselves as a digital organization. This implies that technology and business exists as one entity with common goals. Andersen & Sannes (2017) argues that it is technology that

drives innovation processes towards realization within these organizations. When organizations become digital, they also are included and can participate in digital platforms and ecosystems, which again can lead into new partnerships, innovation possibilities and reconfiguration (Yoo et al., 2010). We note that becoming a digitalized firm enables the firm to be applicable to activities that are echoing the same characteristics as the previously discussed *dynamic capabilities*. Rachinger et al., (2018) discusses the implications of new business models appearing as firm become more digitalized. They argue that when new and innovative processes get introduced new business models are needed to fit the new organizational processes. Teece (2018) notes that one of the objectives of a business model is to guide and provide pathways for technological innovation. This implies that the firms must be conscious of how they operate and approach their new business models so that they can complement the new innovations within the firm.

Digital Innovation

Yoo et al., (2010) defines digital innovation as innovation processes within firms that are empowered by digital technologies which guides a path for new possible forms of *digitalization*. A question frequently discussed by scholars is what digitalization offers that makes *digital innovations* different from non-digital ones. Since digital innovations are empowered by digital technology the firms needs access to various digital tools (Yoo et al., 2010). One can view this in the perspective of dynamic capabilities where in the of RBV firms assets and competencies (i.e., how they utilize digital tools towards innovation) are the most important factors towards a firms performance (Teece et al., 1997; Wernerfelt, 1984).

Osmundsen et al., (2018) describe digital innovation as processes and an outcome, and the processes include digital technology being combined in new ways to create values for adopters of the innovation. In continuation firms practicing digital innovation must consider and be prepared that these activities are disruptive to the organization and can initiate a transformation within the organization (Yoo et al., 2010). These disruptions share many of the same attributes as described earlier in the dynamic capability framework of transformation. How the organizations react to the transformation process is very much dependent on the organizational structure and culture (Teece et al., 2016).

Digital Transformation

Based on descriptions and characteristics of digitalization and digital innovation one can perceive digital transformation as a process over time, where digitalization and/or digital

innovation is involved, that enable major changes to how the business is conducted or directed that directly impacts and transform the organization or an entire industry (Osmundsen et al., 2018). This also indicates the increasingly important role of IS (information systems) within firms. As noted by Osmundsen et al., (2018) this has challenged the more traditional role of IS that before was viewed as supporting functions for the organization overall strategy. IS has become more of an integral part of the overall strategic approach of the firm, that has changed culture and leadership and forced firms to reconfigure the organizational composition and relations (Osmundsen et al., 2018).

Many scholars has tried to investigate why organizations choose to undertake digital transformations. In their literature study, Osmundsen et al., (2018) found many different approaches and drivers for digital transformation. For drivers they found that a common reason to why firms engage in digital transformation is to meet the customer expectations (i.e., adapting to the customers new behavior during a crisis), digital modifications and movement in the industry or changes to competitive forces.

Digital transformation share the same implications towards organizational structure and culture as dynamic capabilities. Hartl & Hess (2017) notes that when going through digital transformation processes one must be able to identify key of cultural values that can help in processing digital transformation. Their study showed that values and culture that emphasizes flexibility is significant for organizations conducting digital transformation and these changes will only be successful if the change is accepted. The study also showed that mutual trust between organizational leaders and the employees is key to develop such a digitalized organizational environments (Hartl & Hess, 2017).

Berghaus & Back (2017) mentions another significant factor in the landscape of digital transformation. One of the factors when studying digital transformation is the implications of rules, both external regulations but also internal governance. In their study three participants noted that the changes in regulation surrounding their industry forced them to rethink their service and deliverance landscape. The regulative changes invited new possible competitors into their environment which required them to conduct immediate action (Berghaus & Back, 2017).

2.4 Connecting dynamic capabilities and digital transformation

One can, based on definitions and different perspectives, create many parallels connecting dynamic capabilities and digital transformation. Kump et al. (2019) argues that the dynamic

capabilities perspective inherit an important role for modern firms and notes that digital technology has changed their nature slightly. Teece (2018) supplement this by noting that introduction of *new purpose technology* can radically impact the nature, structure and culture of a business and opens up for new business models to arrive.

Business models

The concept of business models has within the rapidly changing modern environments become very significant for a firms performance (Teece, 2018). The business model term has been researched and discussed for many years and is deeply connected to both dynamic capabilities and digital transformation. One approach looks at business models as the process of value creation, delivery and capturing. This perspective essentially view them as an asset that define how the firm is delivering value and how it is converted into profits (Teece, 2018 ; Teece, 2010). Other scholars view them as a simplified presentations of the significant procedures of the firm (Wirtz et al., 2016). In this aspect there are three important components to consider when evaluating and researching business models : conceptualizations and definitions, business model structure and management process of the business model. When connecting dynamic capabilities and digital transformation we feel that especially the component of structure is important to consider, since the structure of the organization and business models both are significant factors to consider within both of these aspects (Teece, 2007; Yoo et al., 2010; Teece et al., 2016, Teece, 2018).

Dynamic capabilities suited for digital transformation

Warner & Wäger (2019) argues that digital technology has changed the approach firms have towards strategizing. They note that many incumbent firms fears the idea of experimenting with their business models. This can be contextualized in the same manner as firms leaning towards *path dependence*. These firms are reliant on their history and past, where their strategic approach are being to persuasive towards old practices (Teece et al., 1997). In continuation Warner & Wäger (2019) present a modern approach to dynamic capabilities, utilizing the core of concept the dynamic framework that we presented earlier, supplemented with digital technological implications. These are presented as : digital sensing capabilities, digital seizing capabilities and digital transforming capabilities.

In digital sensing Warner & Wäger (2019) found that many incumbent firms underlined the importance of a *digital mindset*. Incumbent firms must be able to create long-term digital vision, where the entrepreneurial mindset is protected. When this mindset is shared among all

participants of the firm, the scanning processes is much easier, and then easier for firms to reveal digital trends and solutions and seize them (Warner & Wäger, 2019). Sensing capabilities are also utilized to tap into other industries output (Teece, 2007). With that in mind their focus when sensing digital transformation should be around building absorptive capabilities. Utilizing absorptive capabilities could help discover new possibilities and threats in the market, when discovered these could be used to gain competitive advantage (Weritz et al., 2020).

In regard to digital seizing capabilities many of the incumbent firms pointed out the importance of business model innovation (Warner & Wäger, 2019). In the aspect of business model innovation, many of the interviewees in this study identified the importance of *digital scenario planning* to ensure they strengthen the correct areas within the organization in order to be capable to seize the opportunity when it arises.

Another capability much in the framework of seizing digital capabilities is the aspect of implementing *strategic agility* into the organization. This term is not defined and has been a very discussed topic by scholars in the framework of digital capabilities and digital transformation (i.e., Warner & Wäger, 2019; Osmundsen et al., 2018; Teece et al., 2016; Doz & Kosonen, 2008). This is the capability of a firm to effectively and efficiently be able to redirect and configure the resource base in order to match the internal and external environments demands (Teece et al., 2016). All these scholars agree that the key element is to be efficient and time these changes correctly. In modern volatile environments there is not much time to react and redeploy the strategic approach. Warner & Wäger (2019) found that many of the consultants from their research emphasized the importance of utilizing the digital scenario capability as a tool to enforce strategic agility.

The third discussed capability in this study is the firm's ability to balance their digital portfolio, so that they are able to scale their business model innovations. This is important because when new business models are introduced one must be able to balance it with the other already existing business models (Warner & Wäger, 2019).

Transforming capabilities of the firms is related to organizational culture, organizational realigning and management of innovative processes (Kump et al., 2019; Teece, 2018; Teece, 2007). When discussing digital transformation capabilities consultants in Warner & Wäger (2019) research emphasized the importance of implementing leadership, strategic approach and business models that has a *digital focus*. This requires redesigning of organizational

internal structure in order to properly adapt. In continuation consultants highlighted the ability of firms “unlearning” present practices in order to be better suited to participate in digital ecosystems with new collaborations and partners (Warner & Wäger, 2019). Collaboration in the digital ecosystems is a very discussed theme in this framework. This is as one of the balancing factors that must be considered during transformation processes. Interaction and co-creation of new product and technology with ecosystem players can accelerate and strengthen the digital transformation processes (Warner & Wäger, 2019)

2.5 Literature gaps

In the literature available there has been many discussions and research studies on a various of different subjects and approaches. Most noticeable for our assignment is the framework presented by : (Teece, 2007; Teece et al., 2016 ; Teece, 2018) and the supplementary additions to the framework and study findings presented by Warner & Wäger (2019). We also want to investigate how these dynamic capabilities are utilized and used for opportunity to seize digitalization (Seetharaman, 2020).

Within this literature and research there is room for more exploration and investigation. Warner & Wäger (2019) impose for more research in regard to how dynamic capabilities affect the organizations efforts for digital transformation. Scholars also clarify that there is a need for more research and studies on how dynamic capabilities and digital transformation opportunities affect and supplement one another in the context of a crisis (Aramburu et al., 2021).

In this thesis we want to utilize the framework of sensing, seizing and transforming in order to answer our research question. We argue that this will help to answer and investigate the current research questions and hopefully fill literature gaps. This methodology has to some degree been tried out by Warner & Wäger’s (2019) study on “Building dynamic capabilities for digital transformation” and we want to build on further on this research area and raise questions in order to supplement and challenge the questions and findings in this study. This will also try to fill the future research question raised by Krzakiewicz & Cyfert (2017) in trying to utilize dynamic capabilities in a methodical framework in order to understand organizational strategic choices.

Furthermore, we will also open the possibility that some of the processes and action made during the pandemic may become unattached from the organization in the end of the pandemic, meaning choices made during this crisis may bear trivial impact on the future of the strategic approach of the organization.

3. Methodology

In this chapter there is first an explanation on the purpose of this thesis and the background on why we have chosen a qualitative approach. Next, we will explain and try to contextualize how we handled the data collection processes and how it was analyzed. We will also explain the evaluation process of the data that has been collected before we go into the next chapter for discussion and analysis.

3.1 Purpose of the thesis

The goal of this thesis is to explore and investigate whether and how dynamic capabilities has impacted strategic choices made during the pandemic with regard to digital transformation. In order to do so we have chosen to take findings from several in-depth interview with different banks, utilizing the framework of dynamic capabilities presented in the thesis. By utilizing this framework, we want to give insight and expand on the relationship between digital transformation and dynamic capabilities. This is an explorative territory of research and there are still many discussions towards how and why one can connect these themes and how they interact.

We want to clarify that this by no means will result in any conclusion or define a best solution for any business. This thesis is theory focused with the overall goal of becoming one of many contributions that can give a perspective into the relationship between dynamic capabilities and digital transformation.

3.1.1 Approach and research method

As introduced in the theoretical approach there are many perspectives and discussions and therefore no correct path forward. This means that we must explore and look for patterns in the findings. Because the overall goal is to understand how dynamic capabilities are being used to seize digital transformation, we concluded that qualitative research method was advantageous for us since it allows for a flexible research design (Taylor, Bogdan & DeVault, 2016, p.43). Qualitative research is concerned with how people understand and perceive concepts. This research method is inductive meaning that researchers develop insights and create understandings from patterns in the data, rather than utilizing models, hypothesis, or theories (Taylor et al., 2016, p.8).

In qualitative research there are several designs and approaches that could be utilized to understand a social or human problem. Cresswell (2014, p13) lists five different designs to conduct qualitative studies: narrative research, phenomenological research, grounded theory, ethnography, and case studies. Based on the research questions presented we found that there were two designs that would be more fitting for this thesis.

Case studies are concerned with the researcher performing an in-depth analysis of a certain case such as an activity, process, event on one or more individuals (Cresswell, 2014, p14). As the research question involves an event such as COVID-19 and activity such as digital transformation, this could be an optimal choice of design to answer the research question. However, a case study is best applied when using a broader range of data collection procedures over a sustained period of time (Cresswell, 2014; Stake, 1995; Yin, 2009, 2012) and simply by time constraints we were not able to conduct this design.

Phenomenological research is a design where the researcher describes the experiences of individuals about a certain phenomenon (Cresswell, 2014, p 14). This perspective is understanding people from their own frame of reference and experiencing reality as they experience it (Taylor et al., 2016 p7; Corbin & Strauss, 2008). Considering the research questions, we argue that dynamic capabilities, digital transformation and COVID 19 should be treated as phenomena that is interpreted by the individual as they experience it. As typical for phenomenological designs, interviews are the preferred data collection method (Cresswell, 2014, p14) and we chose to utilize semi-structured in-depth interviews, a research approach usually with a face-to-face encounter between the researcher and informant (Taylor et al., 2016, p102). A note here is that because of COVID-19 we had to conduct these interviews over a digital platform.

3.2 Information gathering process

3.2.1 Collection of data and informants

After constructing the theoretical fundament, we started the processes of data collection and finding the key informants for our research.

We utilized a non-probability stratified sampling approach for our data sampling. The goal of this method is to ensure that the studied cases are representative of the population of interest (Taylor et al., 2016, p31). The banks selected was based on their size, assets and revenue. The reasoning for this selection method was to find banks that had their own integrated

technological/innovation department. During our selection process we found that many of the smaller banks lacked a dedicated department or position in the firm with the knowledge of these processes. However, we ended up including two banks that did some development themselves, but that was mostly depended on partnerships and collaboration within their environment in order to seize digital transformation. These was included because it was an opportunity to investigate what capabilities that was important for these banks that may differ from the bigger sized ones. We ended up with a rough collection of ten banks that fitted our criteria which we then started contacting.

Among the ten banks, five banks agreed to be interviews. One bank declined to participate, and the remaining four banks did not respond to our request. Arguably we could have pursued the remaining banks to get an answer but choose not to do so both due to time constraints and put more effort to the respondents who already accepted. By focusing on the remaining five banks, we could focus to strengthen our relationship with these banks. If it was explored that we needed to interview other informants of the banks to give different perspectives on the same subject, we had the contacts and relations to do so opposed to establish contact with an entirely different bank.

As researchers it was important that we handled the data we collected in a proper manner with respect to the guidelines set by our institution. Before each interview we asked for permission to conduct recording of the interview. In addition, we sent a consent schema which explained the process of anonymization of the informant and that the data collected would be deleted when the thesis was done.

3.2.2 Ethical considerations

The choice of conducting qualitative research raises awareness on several topics that the researcher should consider. The first factor we considered in our research was the anonymity and confidentiality of the informants. We made sure to apply to Norwegian Centre for Research Data (NSD) to affirm that we could perform the interviews. With the application approved we ensured that the informants were given the information recommended by NSD and confirmation from the informant was acknowledged on recordings. Furthermore, we have not been collecting any personal information and we have anonymized the businesses for this assignment, with the reason being to avoid collecting any personal information.

The interviews were conducted in Norwegian and since the thesis is in English it was necessary to translate parts of the recordings. This may alter the intent or meaning of the

informant, so to ensure the accuracy of the statement we had the informants approve the quotes we used. We have also added the interview guide, an example of an interview transcript and a table of findings in our appendix to add most transparency to the procedures.

3.2.3 Interview guide and interview processes

The process of constructing the interview guide involves many different aspects that must be considered. The goal of the interview guide is generally to create open-ended questions that allows the informant to share their knowledge and information about the theme at hand (Taylor et al., 2016, p123). Furthermore, the interview guide is not a structured list of “things to do”, but rather an overview of general areas that should be covered during the interview sequence. According to Bryman (2012, p478) the main ingredient in the interview is listening and we aimed to formulate questions which were intended to enable the informant to give more elaborate answers and room for reflection. After the pilot guide was established, we conducted a revision of the interview guide with a lecturer to identify eventual issues that had to be corrected. This led to a finalized guide attached in the appendix to this thesis.

In our development of the interview guide we tried to tie in some of the theoretical aspects to its structure. As mentioned, we focused on the framework of sensing, seizing and transforming as the fundament for connecting dynamic capabilities and digital transformation. We created questions in a way that could reach all three of these areas within the theoretical framework. During interviews, we let the discussions lead the topic of the interview and rather wait until the end to ask questions of interest that was left out of the discussion. We had to be careful not to put too many “theoretical questions” that could confuse the informant with difficult terms irrelevant for their practical approach.

During the interview, there are several factors that throw the interviewer out of its comfort zone. A study conducted by Roulston et al., (2003) listed some challenges that we recognized during our interview process. One such challenge was the aspect of acknowledging how and when to probe (Taylor et al., 2016, p123). This implies that we as interviewers at all time during the discussion must be ready to ask for clarifications and elaborations from the informants. This aspect is very important in order to be sure that we understand and interpret their answers in a correct manner. Misunderstandings and poor interpretations could devalue and make much of the analysis and results later in the thesis insignificant. Another challenge listed by Roulston et al., (2003) was environmental problems, as the covid-19 pandemic affected our interviews in a way that forced all interviews to be conducted over a digital

platform. One of the issues of digital platforms can be the lack of means to observe certain things such as body language, certain behavior, or emotions. According to Bryman (2012, p478) it is also important to note these factors as its part of what the informant might not be telling us and this can arguably be missed out in a digital interview. Interview over digital platform meant that we had to record the audio from the speaker of the computer while interviewing. The quality of the interviews was therefore to some degree affected by this method. As mentioned by Taylor et al., (2016, p131), when recording interviews, one must always check that the all the equipment functions as they should, or else it could make the transcription process a nightmare or in worst case scenario make it impossible to transcribe. Luckily, the digital interview processes was successful and the quality of the recordings was good enough to transcribe in a proper manner.

Table 1 lists information on the interviews and in what manner they were conducted.

Table 1. List of interviews

| Interviews | Date | Duration | Note |
|-------------|----------------|--------------------|-----------------|
| Informant A | March 15, 2021 | 1 hour | Video interview |
| Informant B | March 18, 2021 | 1 hour 10 minutes | Video interview |
| Informant C | March 19, 2021 | 1 hour 24 minutes | Video interview |
| Informant D | March 24, 2021 | 1 hour | Video interview |
| Informant E | April 04, 2021 | 1 hours 19 minutes | Video interview |

The amount of data collected from each informant is somewhat arguably limited. We would have liked to gain insights from a larger number of informants. There are several factors that is the cause to a fewer number of informants. First the process of getting in contact and coordinating with relevant informants within the business is a time-consuming process. The managerial level of such an organization tends to have a busy work schedule and some even declined as they get many requests like this on a regular basis. Secondly, all the interviews were conducted over video interview due to the Covid-19 pandemic. Performing interviews on a digital platform proposes some challenges, such as the difficulty of observing non-verbal communication which can arguably challenge the ability of knowing when to probe or not. Furthermore, by not visiting the informants it is arguably harder to visualize the organization

and we are missing out the opportunity to perform other qualitative data research gathering methods such as observation and may also hamper the ability to explore other persons in the organization that we could interview.

With all these factors in mind, we took some measures to mitigate the limited data collected. During the analysis process we supplemented with the usage of secondary data such as yearly reports, official reports, etc. We also continually discussed if it was necessary to conduct a follow up interview or try to bring in additional informants. However, we believe that the data gathered is sufficient for our thesis. All our interviews lasted at least 1 hour or more and we were able to touch on all the different themes of interest.

3.3 Data analysis

When conducting qualitative studies, one does not always know in advance what type of data analysis procedures that fits for this study (Taylor et al., 2016, p44). For this study we sought to organize the data into the framework of Teece, (2007) by means of sensing, seizing, and transforming. We conducted the analysis into two steps.

Processing the data

The first step in the data analysis was to transcribe the interviews from our audio recording. As pointed out by Roulston et al., (2003), this is a time-consuming process which many students find more challenging than they imagined. We were no exception to this as we found the recordings difficult to transcribe. However, the transcribing process provided us with a great overview of the collected data and enabled us to identify key themes and identify similarities and differences between the different informants. Next, we tried to structure the data by connecting findings to our research questions, the method we applied was to categorize each theme into different colors (i.e., findings that revolved around seizing were coded into red and themes that regarded transforming were marked green etc.,).

Presenting the data

The next step of the data analysis was to structure a presentation of the findings in chapter 4. We found that the theoretical framework made a good base for categorization and presenting the findings from our transcript interviews. It quickly became apparent for us that we also had to categorize data into two different phases, first phase being before the outbreak of the pandemic and one during the pandemic. We also added color coding related to other interesting remarks that should be studied further.

Interpreting the data

The final step of the data analysis was to interpret of the presented findings and identifying what we learned from the informants. The researcher has its own personal interpretation and understanding of the informant, that comes in to play for the step of interpreting the data (Cresswell, 2014, p200). As many of the informants were not familiar with dynamic capabilities, we as researchers needed to connect the findings to this framework from our own personal interpretation of the findings. Further, we also saw that the findings prompted new themes and questions that could be asked in the future which we as researchers had not foreseen earlier in the study.

3.4 Evaluation of the research method

Reliability and replication

Reliability and replication are a criterion that is mainly concerned with the question whether the results of a study are repeatable (Bryman, 2012, p46-47). As stated by Taylor et.al. (2016, p10) these are criteria's that are mainly concerned to quantitative studies when qualitative studies emphasize the meaningfulness of its studies. This is to say that it is the validity of the research that is important to evaluate for this study.

Validity

The most important criteria of research is validity (Bryman, 2012, p47). Qualitative validity means that the researcher checks for the accuracy of the findings by employing certain procedures (Creswell, 2014, p201). There are three terms of validity in that is much discussed in qualitative research (Cresswell, 2014; Lincoln, Lynham & Guba, 2011) that address validity which is trustworthiness, authenticity, and credibility (Cresswell, 2014; Creswell & Miller, 2000). For this study we used these factors to validate our findings.

Trustworthiness

Trustworthiness is mainly revolved around whether the study is planned and executed in a credible fashion and if the results could be reproduced by others (Kvale, et al., 2015). However, it is challenging to reach the goal of reproduction in qualitative studies when the results are often a result of interaction between the researcher and informant in a certain environment. For this study we have tried to describe in detail both the structure of the thesis and the reasons for choosing various approaches in the research. This enables the study in its

various stages to be evaluated to achieve the trustworthiness of the study in accordance with Kvale et al, (2015).

Credibility

To ensure the credibility of the study we applied a member checking. This is a technique that the researcher tries to determine the accuracy of the qualitative findings by taking the final report or specific descriptions back to the participants (Creswell, 2012, p201-202). One important factor to note is not to bring only the transcription of the informant, but rather the researcher's analysis of the transcription. By applying this method, the participant can determine the accuracy of the interpretations made by the researcher. This also allows the participant to further comment on the findings. Furthermore, we have used our supervisor, other students, and lecturers from Inland Norway University for feedback, in discussions concerning theory, construction of interview guides and discussion of analytical findings. This is all to ensure credibility to the thesis.

Authenticity

The quality of the data gathered may affect the authenticity. We chose a method of collecting data through interview and since we are unexperienced in conducting interviews which may bring bias that may affect the interview. We have also highlighted discrepancies or negative information that may contradict our thesis as this lend credence to the accounts being more realistic and thus more valid.

The purpose of the study is to bring a greater understanding of how dynamic capabilities impacted the businesses strategic choices during the pandemic. The transferability into other qualitative research depends on similar findings in the same conditions (Mehmetoglu, 2004). Although this study has not been focused on transferability, we have tried to give a rich and thick description in accordance with of the findings to give transparency which adds to the validity of the findings (Cresswell, 2012, p202).

4. Findings

With considerations to the anonymity of the informants they are referred to as either informants or as Informant A, Informant B and so on. We categorize the informants perspectives and information into the dynamic capabilities framework. We will start with a general introduction and description of the saving banks industry. In continuation we will present the different findings from the banks.

4.1 An introduction to the Norwegian banking industry

This chapter is meant to provide the reader with some background information on the bank industry of Norway. Some information was given from the informants on factors that changed the competitive landscape in the bank industry.

There are mainly two different types of business models that are dominant in the Norwegian banking industry: commercial banks and savings banks. There is arguably little difference between the services they provide such as savings-, investment-, payment-, and lending services, it is the organization which is most distinguishable between the two. Commercial banks are owned by its shareholders, while savings banks are owned by its members. By the founding of savings banks, its purpose was initially to provide all levels of society within the banks geographical scope with options of banking services. As the savings banks are owned by its members, it has a social responsibility to develop its local areas in the form of investing the profit of the bank into local initiatives and businesses. For the thesis we have as earlier stated, chosen to only interview savings banks from the Norwegian bank market and the reason being as we see the savings banks obligation to serve and develop its local community as a unique feature within the industry that we wanted to study closer.

During the last 20 years the Norwegian banking market has undergone major changes in how it provides its services. The introduction of the internet and the shift into more digitalized businesses has caused that many of the services previously provided in physical bank branches is now partly or entirely moved over to digital platforms. With the introduction of a more digitalized platform the geographical sphere in which the savings banks reach expands and for the consumer it is no longer required to be physically present in the bank branch when performing certain services. The combination of these factors has led to an increase in customers who are not necessarily within the local community that savings bank stem from. The support in the local area is still a crucial cornerstone for the business, as stated by many

of the official yearly reports of the savings banks. However, with an increasing need to expand its geographical sphere, many of the banks has established daughter companies that provide the same services but on a national or international scope, often provided on an all-out digital platform with heavy emphasis on mobile banking aps.

Another change during these years is the reduction in the numbers of savings banks in Norway, which has been reduced from 130 in the 2000 to 94 as of last year and the trend has been slowly decreasing the last 10 years (Sparebankforeningen, 2020).

Amount of saving banks in Norway 1922 - 2019

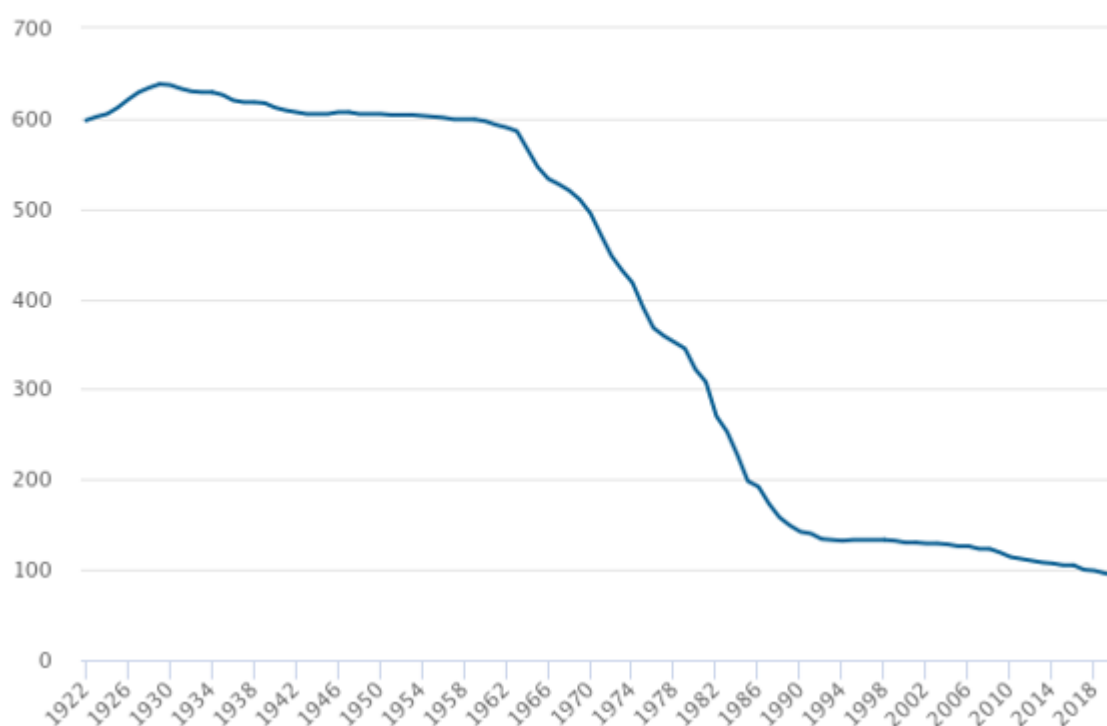


Figure 3: Amount of saving banks in Norway (Sparebankforeningen, 2020)

Despite the decrease in the numbers of saving banks, the financial supervisory authority of Norway authorities describes the banking market as unchanged and healthy for the consumer, with a low threshold for establishing new businesses in the market (Kredittilsynet, 2008, p 41). However, other institutions such as the Competition authority in Norway points out that despite the banking industry being profitable, there have been few startups in the period 2007 to 2014. This could indicate that there are obstacles preventing new businesses to establish

themselves, which the Competition authority underline factors such as the necessity for high irreversible costs in establishing and high regulatory demands (Konkurransetilsynet, 2015, p 22).

Lastly our findings indicate that the banking industry is under an increasing pressure to meet regulatory demands. It is expected an undeniable trust in the banking system to safeguard the savings and payments of consumers, but with this trust the banks must comply with all necessary rules and regulations. New EU directives such as Payment services directive 2(PSD2) has an aim to increase competition and transparency between payment markets in Europe. The same directive is experienced as a constriction for the innovation process within the business in the banking industry. The financial supervisory authority of Norway has the last two years handed out increasingly severe punishments to banks for not complying to the money laundering act. The regulatory factor actively affects the processes in the savings banks and require them to allocate more resources to satisfy compliance, which can be difficult for both small and large businesses within the banking industry. This factor will be further discussed in chapter six.

Summarized the development the last 20 years is that the services provided is unchanged, but the introduction of digital platforms has enabled new ways for customer to interact with the bank. Savings banks had to undergo a major change shifting from less focus on physical branches to new digital platforms. Factors such as increasing competition from international commercial banks, rules and regulations is forcing the savings banks to constantly adapt to achieve favorable and profitable business models.

4.2 Sensing Capabilities

Customers

Our informants were in agreement that the pandemic forced them to prioritize in their approach to digital transformation and innovation processes. Most of the informants argued that the main contributor for their sensing approach is customers and their input. The customer driver innovation is practiced by conducting customer surveys, understanding customer paths and getting the overall customer picture. In that regard little has changed from the practices utilized before the pandemic.

“We conduct frequent customer surveys where we search for insight and their evaluations of different solutions. Customers has a central role in the sensing process.” -Informant E

The argument for customer driven innovation is that the banking industry main focus is to satisfy and fill the need of their customers. It is therefore important to create solutions and platforms in which they can get the best possible feedback from their customers. Several informants underlined that with their current practices they still missed opportunities to interact and gather information from customers. Informant C argued that a more formal and active testing regime would be beneficial. This informant continued noting that there is lack of structure to how these processes is done at present time.

"...we are missing a systematic approach to testing and I miss a development strategy with a main focus on testing" - Informant C

Informant D highlights that their approach to customer driven innovation is group-based testing on different products. Based on the feedback, their solutions and products are adjusted and goes through an agile development phase. In this way the bank can get an overview and sense what innovation and digital solutions that the customers are interested in.

However, it must be noted that some informants was in disagreement with the idea of customer driven innovation as the sensing contributor towards digital transformation. These informants argued that the main contributor to digital transformation within the banking industry is employee driven innovation.

Employees

The main benefit of employee driven innovation, as argued by informant C, is that they understand the underlying processes of development and implementation of new solutions and ideas. Informants A and B also agreed that employees are important towards why and how the new innovation processes should be conducted. They argued with the idea that employees of different branches (i.e., development and customer consulting) together work out and evaluate new possibilities for innovation and digital transformation. All the informants was in the agreement of the significance of having interdisciplinary cooperation teams in which the sensing processes was discussed in detail.

"We collect resources from different specialization units, an interdisciplinary team, where we conduct workshops and brainstorming" – Informant B

Other Implications for sensing

An interesting aspect to consider in the sensing processes is the notion of strategic redirection and prioritization as a result of the pandemic. All the informants agreed that sensing the innovation processes towards digital transformation have changed little during the pandemic. What that has changed however is the prioritization being made and the process of identifying what is important in order to deal with the effects of the pandemic.

“We did an evaluation in relation to what our prioritization was, are there solutions that must be implemented quickly? They had to be weighted up against each other and some solutions had to be down prioritized” – Informant A

Informant A exemplified this by mentioning that the first priority was to create a good digital dialog and platform to communicate between the bank and the customers. With this established it was much easier to get a grasp on the current customer situation and what their main concerns was. Informant C argues that the pandemic has forced the banking industry to “buckle down” and secure its own infrastructure before anything else. The informant argues that this enables the banks to separate their infrastructure from their service layer, which create room for others to sense new innovation possibilities.

Another big impactful force when it comes to sensing, mentioned by all the informants, is the benefit of creating an overview over what other companies and industries are doing, in terms of innovation and digital transformation (i.e., Spotify onboarding, Amazon and Facebook). There is a perceived importance of understanding the processes of other industries and firms that drives the digital expectations from the customers. Informant C goes so far to say that for the last few years nothing innovative have happened within the banking industry. The informant continues saying that drivers outside of the banking industry are changing the digital “playing field” (i.e., other industries or the strict finance compliance rules) in which the banks just “follow along”. Informant B highlights the challenges of navigating through all the “nice to have” solutions being offered to them from third party suppliers.

“...are these solutions that the customers wants and are going to use? Or are they just “nice to have” alternatives.” -Informant B

Informant D notes their bank collectively work together in order to create an understanding of their environment and gather information that is relevant for their practices. The informant says this process is managed through in many different means (i.e., through applications,

newsletters, portals). The main purpose of this process is to identify the new services-curves of the customers and always stay updated on insight and overview to not fall behind.

One must also be aware of the importance of size, when utilizing sensing capabilities.

Informant E notes that for smaller banks the approach is usually to wait until new and modern solutions are mature and have enough funding among several banks for it to be implemented.

4.3 Seizing Capabilities

Processes and implementation

In the seizing approach of implementing new solutions or adjusting current ones the informants highlighted the important aspect of “quick decision making”. Informant A argues that making quick adjustment processes have been reinforced because of the pandemic. Informant B mentioned that they quickly facilitated more digital possibilities for their customers, so that they were able to do things more independently from home instead of physically going to the bank (i.e., for processes as applying for deductible). This indicates that the banks have developed solutions so that customers has gained more freedom to handle their financials processes more digitally and independently. Informant B argues that the customers already was ready for this change and that the bank were the ones that were a bit more detained towards making the customers more self-serviced. The pandemic has also allowed for more leeway terms of decision making. As noted by Informant E the pace of which solutions are introduced is increased and one can implement otherwise “non-popular” decisions because of the increased leeway. In addition, as noted by most of the informants, the pandemic has forced most banks to change their practices and processes towards implementing more self-serviced and digital options for the customers.

In the seizing phase several of the informants emphasize the importance of working in interdisciplinary teams when implementing changes to current processes and adjustments to new potential solutions. When the opportunity is sensed and started to be implemented, several informants notes the significance of directing the correct questions and adjustments throughout the implementation phase. This again highlights the importance of interdisciplinary teams in order to cover all the potential perspectives and areas of importance. Informant A notes that these interdisciplinary teams discusses the solutions and different themes with each other, which again leads to improvements for the overall customer experience. This also allows the teams to work in an agile setting without having to report to the top management for every improvement or adjustment decision.

Strategy and scenario planning

As noted earlier the strategic direction has changed because of the pandemic. Informant A highlighted that they had to shorten their strategic horizon down to short prioritization periods spread over several stages throughout the pandemic. The informant pointed out that the bank collectively agreed on strategic themes important for the given period during the pandemic.

Informant D notes that their bank, as a result of the pandemic, has started implementing scenario planning as an important part of the strategic approach moving forward. The argument for implementing scenario planning is that the pandemic has shown how quickly and disruptive things change around the world. Being able to plan for shorter periods, thus being able to adapt to the dynamic environment has become more important than before.

“... I think we are dependent on revisiting the scenarios more often than we did before. Earlier we could predict a direction which stabilized itself for five-year period. Now it can be changed in a span of two weeks as we saw last year” – Informant D

Many informants also highlighted the changes for their strategic approach to customer meetings and counseling. Since the pandemic has forced both the banks and the customers to be more digital interactive, the informants underlined the importance of a good digital meeting platform. Informant D notes that their bank introduced a solution for digital customer meetings before covid-19 was present. Even though they introduced this solution most of the customers were most comfortable with using Teams for digital meetings. This made them scratch their digital meeting solution and utilize Teams as most others. This is an example on how, even with foresight and pre-implemented solution, the customer behavior is still hard to grasp fully, and developing in-house solutions is difficult when competing with world-wide utilized programs and applications.

Other Implications for seizing

A few informants argue that partnership with third-party collaborators has become much more challenging and important during the pandemic. As noted by both informant A and B, collaborations with third-party actors has always been important for saving banks. They both argue that, because of the pandemic, the importance of strategic alliances and partnerships has been strengthened. Informant D argues that relations and trust is harder to build up and maintain during the digital meetings. This again prolongs the development and adjustment periods and it is becoming a challenge for both the banks and the third-party collaborators. Informant E underline the same challenges as informant D when it comes to trust and relations. However,

the informant argues that accessibility for cooperation has become much simpler and efficient during COVID-19. Informant D and E highlight the possibility of negative long-term of the effects that could sprout out from only digital interaction.

It must be stated that the informants have clarified the difficulty of knowing whether the pandemic has affected some of the processes or not. They argue that many of the decisions towards innovation and digital transformation would have been made even without the pandemic. They do however state that the pandemic clearly has had a significant reinforcing effect on several parts of the implementing and adjusting processes. One example of such processes is the notion of building competencies for the digital worker. Informant B notes that these are processes that was set in motion long before COVID-19, but it has accelerated and made the banks perceive significant aspect surrounding digitalization in a much more accelerated fashion. Informant C argues that some of the effects caused of COVID-19 in terms of becoming more digital, would have taken years without COVID-19.

4.4 Transforming Capabilities

Realigning capabilities and solutions

Many of the informants argues that one of the processes in realignment of capabilities and solutions is to understand when and what to cut out. Informant B argues that an important part of this process is to get an overview of all existing solutions in order to negate having a big backlog of old and dusted solutions that devour necessary resources. Informant C notes that it is difficult knowing whether to scratch a solution or not. The pandemic has according to this informant helped the bank becoming more proficient to cut-out the unnecessary options for the customers and gather the resources towards what is important to their current situation. Informant E highlights that much of the current solutions is based on old technology and infrastructure. When new solutions are introduced, there is a challenge when trying fit them together under the same platform. There is also difficulty being able to measure the usefulness of the new introduced solutions.

“One increase the cost of the system portfolio by introducing new ones but fail to see the actual optimization. It is difficult to properly calculate the actual benefit from the new solution versus the old” – Informant E

Continuing in the theme of realignment, informant A goes back to their several strategic stages throughout the pandemic. It was through these stages that some of the realignment of

capabilities took place. The bank consultants got introduced to new toolkits used to make their digital workday more efficient. This also indicates a change for the customers, as more and more solutions are guided towards utilization of digital applications and toolkits. All the informants are in agreement that the digital customer is the future and will become more dominant as time passes. Building up the competencies of the digital workers to engage and manage the new expectations of the customers is a concept that has been important before and has been strongly reinforced by the pandemic.

Another interesting aspect in terms of realigning capabilities is the aspect of realigning the recruitment process. Informant E states that a more cross functional recruitment processes would be beneficial, which would lead to more ideas and questions. These processes are ones that may need adjustment if one want to conduct more innovative development within the banks.

“There are instances where new employees are trained by workers that have been there for ten-twenty years and that is probably not that ideal if change and transformation is the goal”
– Informant E

Organizational structure, routines and rules

When solutions are sensed and seized one have to look on how they are realigned and affect the overall organization. In terms of working assignments and processes, all the informants are in agreement that there have been little adjustments done in their division. With the introduction of new working practices (i.e., home-office and digital meeting rooms) most of the departments within development and innovation adapted quite well. However, as noted by many of the informants, other parts and divisions of the banks somewhat struggled with the properly adapting to the digital interactive practices. Informant C argues their development environment, that was unshackled from the traditional bank work approach before COVID-19 was present, has acted as role models for the other parts and divisions. This again helped the bank as a whole to handle the pandemic much better and adaptation to home office became much more manageable.

“...we have managed to operate in the same direction as before the pandemic, much because we have conducted and believed in new ways of operating a bank than just on paper and physical meetings” – Informant C

Informant B highlights the fact that the digital solutions for the employees in the bank has gone from being voluntary, to becoming mandatory. Becoming more digital as workers and serving more digital solutions out to the customers, one would think that the organizational structure, routines and rules has been affected. However as noted earlier, several of the informants argue that at least in their department of development, there has only been minor changes done during the pandemic. Informants D argues that one aspect of the organization that has seen a more significant change is the organizational culture, both internal and external. Informant B highlight the dangers of becoming “too digital” and losing the informal talks with each other as employees and between the bank consultant and the customer. Looking towards the future informant B expect a hybrid solution of both physical office and digital home office.

“... without the physical office you loose a social factor that could be part of the glue for the team that is important to keep intact, therefore I would expect a hybrid model of both in the future” – Informant B

Informant D notes that this social factor also is significant when working with external third-party collaborators. The digital setting has shown the difficulty of building proper relations between different collaboration parties which could have negative effects long-term. This are the indirect effects of being too digital (i.e., meeting new people, building new networks, relations).

Informant C argues that many of the employees and the customers never would want to go back to the old physical approach of doing thing. The informant notes that for the customers the bank often acts like a hurdle or a friction for a goal (i.e., buying a house, car etc.). So as a customer having the possibility to talk to the consultant and sign papers over a digital platform would be beneficial because it decreases the friction between the application and the goal. Communication over digital platforms will also be beneficial for the consultant because of the time saving of doing it digital, instead of setting up physical customer meetings. However, informant E argues for the idea that the banks must find new ways of maintaining the social relations with customers within the environment that at an accelerating pace becomes more digital. Keeping these relations are important for maintaining the identity and cultural aspects of the bank.

Other implications for transforming

Another theme brought up by Informant C is the aspect of how innovation is understood and conducted. The informant notes that in recent years no new technology is being implemented or utilized. An example is the biometry technology that is utilized in the mobile bank application and across many other different industries. The argument is that even though it has only been utilized in recent years, the technology itself is thirty-forty years old. The informant argues that technology just is a toolkit for the user to utilize in different manners. Informant B notes that this process can be demanding because even though the technology exists, being able to navigate and utilize the technology in a new and innovative manner is a difficult task. The informant continues arguing that the solutions presented when experimenting with the different technologies is to be able to satisfy what customers want and expect.

4.5 Other noticeable factors for innovation and digital transformation

Compliance

Throughout the chapter so far, we have categorized the findings into our theoretical framework of dynamic capabilities. We did however struggle to fit the theme of compliance into any of the specific categories. This is because it arguably affects all the parts of the dynamic framework and it was highlighted by most of the informants as an extremely influential part of everything the bank does.

Informant B notes that understanding and following the rules set by the compliance regime (PSD-2) takes up much of the time for developers. It is a focus point of great importance that all banks has to follow. Informant C notes that compliance is the most substantial driver and influential force for innovation. In continuation the informant argues that this possibly effect the development process negative for most banks because it acts like a hurdle for the banks to conduct internal innovation.

“...it makes it difficult to conduct internal innovation development because we have to utilize most resources and our most skilled workers towards compliance” -C

Informant D argues that even though compliance is a resource-hungry framework one must also try to identify possibilities within the compliance policy. The informant utilize an example of a recent regulation that demands that customers should gain access to accounts across different banks. This does not give much customer value, but then it is up to the bank

to be able to take another step and create something that can offer more customer value with baseline of the solution created for the regulation.

The increased demands of the regulative framework makes it especially difficult for smaller sized banks to comply properly. Informant E claim that there is a great challenge to be able to release solutions and adjustments early enough to be relevant for the customer and at the same time comply to the regulations.

5. Discussion

In this chapter our findings are put into a broader perspective and discussed in consideration to the theory presented in order to evaluate and answer our research question. In addition, the practical implications of digital innovation and digital transformation is discussed.

5.1 How dynamic capabilities are being utilized

There is no doubt that we can tie many of the dynamic capabilities concepts into how the banks has handled COVID-19. In a broader overview it seems like the approach and actions being made during COVID-19 is reminiscent of Teece et al., (1997) definition of dynamic capabilities. The notion of being able to conduct integration and reconfiguration of both internal and external competencies to match a volatile environment is very applicable to the banks practices. Reconfiguration and integration of internal competencies can be exemplified by the effort of creating the digital worker and build competencies to manage the digital work and platforms. External competencies can be exemplified by the reinforced focus on alliances and collaboration with the environment around the bank and the external compliance regime (PSD-2) that the bank must adjust for.

Utilization of sensing

In the sensing approach there is divided opinions towards how the banks thinks their capabilities should be utilized. Most of the informants argued that the most important aspect is to understand customers and develop solutions tailored to their demands. This approach is similar to how the sensing approach is understood theoretically in the framework, where customers are the first to acknowledge the potential for new technology usage and application possibilities (Teece, 2007). Within the theory presented there was arguably a lack of mentioning the employees role within the sensing process. As stated by one of the informants, employee-driven innovation is a very significant capability when sensing adjustments and new possibilities for innovation and digital transformation. While they are included at later stages within the framework (seizing and transformation) their role in the sensing phase is not mentioned in much detail.

An aspect that goes into the theme of COVID-19 is the redirection and adjustment being made in the sensing process. Being able to find the most vital prioritizations, reevaluation of the “known rules” and creating a digital mindset are all significant processes within the

sensing aspect (Teece et al., 2016 ; Warner & Wäger, 2019). This is a process that all the informants agreed was very significant in order to handle COVID-19 in a proper manner.

The informants also included the notion of peeking into other industries and companies across the world and their approach to innovation and digital transformation. The argument for peeking into other industries and companies was that customers often gain demands and expectations from other industries and application solutions. This aspect is very similar to the notion of being able to tap into the output of others and make sense of it (Teece et al., 2016) and utilizing absorptive capabilities to their advantage (Weritz et al., 2020). By doing this, the banks can gain knowledge to understand what opportunities are fitting and sought after. How this is conducted seems to vary depending on the informant, but several informants argued for the idea of collectively working together to make sense of the environment surrounding them. It seems like the process of sensemaking is quite demanding. As mentioned by one informant, COVID-19 has forced the banking industry to secure their own infrastructure, which again left room for others to conduct innovation. The number of different solutions and gadget innovation available must be navigated and evaluated up against what the customers' expectations and demands are.

Utilization of seizing

Within seizing, the reinforcement and acceleration effect of the pandemic was mentioned by all the banks. Facilitating good work conditions from home and creating more digital freedom for the customers was an example of this. In the theoretical aspect one can see this as an opportunity for change within the banks. The banks locates an opportunity to give their customers freedom in terms of digital solutions and accessibility which again can lead to market success (Teece, 2007).

Working together in interdisciplinary teams seems like a standardized working approach within the banks. This is an innovative hierarchical working design where several parts of the organization together with different perspectives are responsible for innovative development and digital transformation within the organization (Felin & Powell, 2016; Teece et al., 2016). This way of working also lowers the distance between the lower and top end of the organization. As mentioned by some of the banks, working in these teams enables them to make decisions without having to report to the top management. Information becomes more free flowing within the organization and less distorted, which again allows for a smoother seizing process (Teece et al., 2016).

Strategy and scenario planning and redirection has also been important for some of the banks during the pandemic. The aspect of being able to redirect themselves to match and seize the internal and external environmental demands can be a very significant process as noted in the study from Werner and Wäger (2019). The focus area of conducting more scenario planning seems to be caused directly from COVID-19. The pandemic has arguably shorten the strategic horizon and forced banks to plan for short-term scenarios. The environment has arguably become more dynamic requiring fast paced changes under uncertain conditions (Ambrosini et al., 2009).

In the seizing approach there are also considerations toward collaboration and alliances. There was agreement that the importance of these processes has been reinforced during the pandemic. These capabilities was seemingly vital even before COVID-19 for most of the banks. As noted in the literature, collaborations within the ecosystem are one of the balancing factors that must be considered during digital transformation processes (Werner and Wäger, 2019). Our findings do suggest that collaboration and partnership has increased in significance for most banks and the threshold to start these processes has been lowered.

Utilization of transforming

In terms of transforming capabilities, the banks highlighted the importance of selection and having a rational approach when evaluating whether or not to drop an existing solution within the processes of realignment. This capability is arguably a very significant part of the organizations path to market success. If the realignment is conducted in a proper manner the organizations can avoid becoming to *path dependent* which can lead to negative effects on the performance of the banks (Teece et al., 1997). According to several of the banks, these processes is demanding and finding methods of doing this efficiently requires a lot of resources. The increased dynamism of the environment caused by COVID-19 seems to have helped the banks becoming proficient to cut the unnecessary processes and solutions. One can argue that utilization of both *regenerative and renewing capabilities* has helped the banks to navigate through the increased dynamic environment to realign with matching degree of dynamism (Ambrosini et al., 2009).

The banks emphasized that there were just minor changes done to their division in terms of working conditions and processes during the pandemic. The employees were used to work, have meetings and conduct workshops digitally. This is arguably because the development divisions that worked with digital innovation and digital transformation required developers to

constantly work with various different digital tools (Yoo et al., 2010). In the broader picture of the entire organization, these processes took some time getting used to because other divisions had a more physical approach to their workday.

One must be aware of the downsides of the new digital setting. The banks stated that the social factor of interacting with other was lost. As noted by Teece (2007) when routines and rules are changed it also has effect on the cultural aspect of both the organization and its partners. Several of the banks noted that this could have negative long-term effects on both relations and network building.

Presented below a figure with a summarization of the dynamic capabilities utilized among the banks based on our findings and discussion.

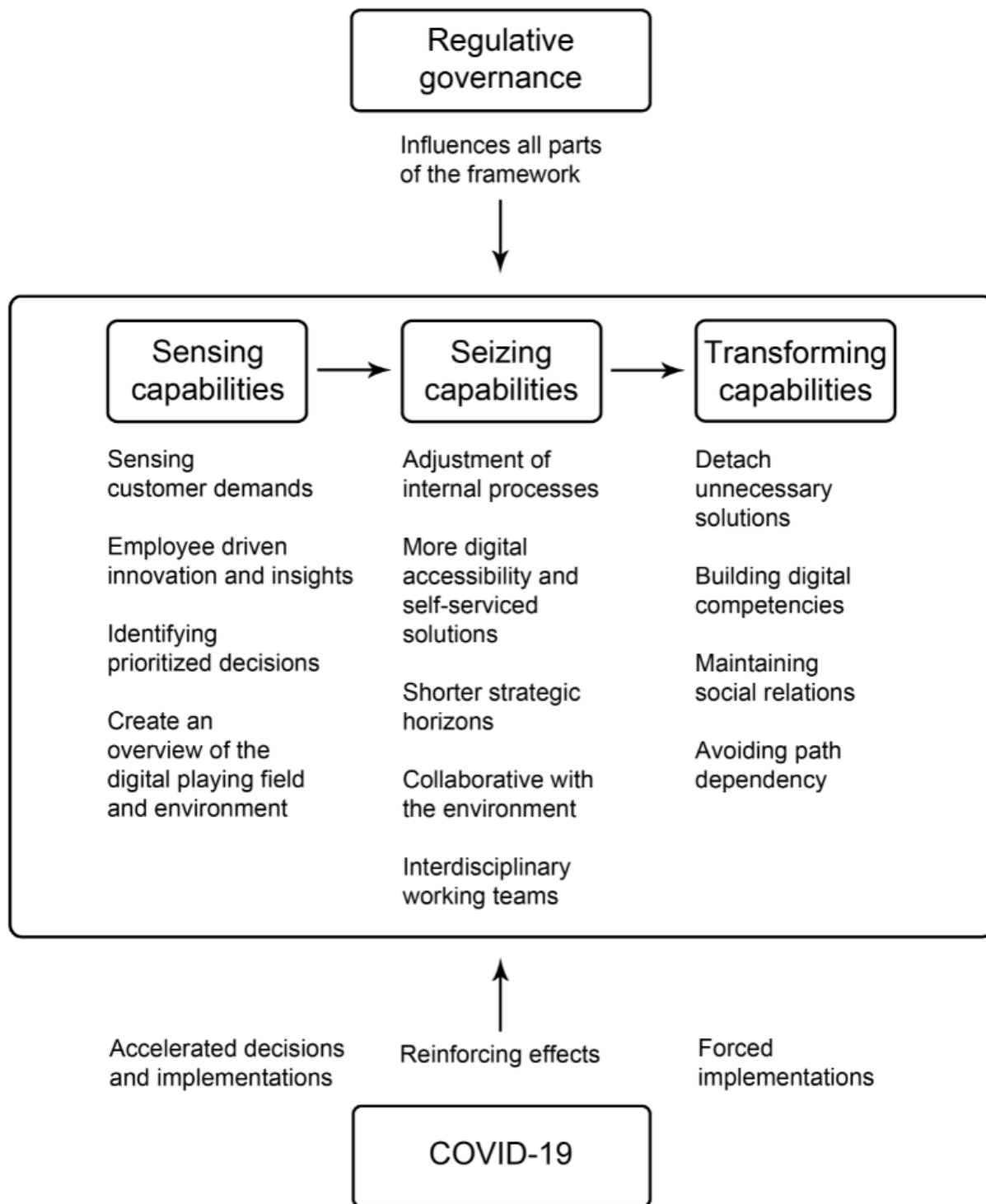


Figure 4, Source : The authors

5.2 How is digital transformation seized through dynamic capabilities?

We have until now discussed which kind of dynamic capabilities the banks has utilized throughout the pandemic. We will now discuss how digital transformation processes has been conducted during the pandemic through these capabilities. In order to do so we also have to discuss how digital innovation and digital transformation is understood by the banks.

Practical implications for digital innovation and digital transformation

It is mentioned in the literature that digital innovation includes usage of technology in order to create new values for innovation, these processes can over time change how business is conducted and act like digital transformation for the firm (Yoo et al., 2010). The banks also perceive the innovation and transformation process in similar terms to the literature. As noted by the informants from the banks much of the innovative processes is focused on utilizing existing technology in new manners in order to optimize solutions for the customers. Another noticeable implication that cannot be ignored is the effects of the compliance regime. Their adjustments and innovations processes are most of the time driven and controlled by compliance of the financial guidelines. As noted in their study, Berghaus & Back (2017) found that some companies have their innovation and digital transformation processes driven by external regulative governance. This is exemplified in the banking industry with the compliance regulations introduced with PSD2 and the national pandemic guidelines. Following these regulations is quite demanding and require significant number of resources.

An aspect that became quite apparent in our interviews is how the metric of size of the banks plays in on these processes. In the interviews two of the banks utilized a large portion of third-party suppliers to develop their solutions. This goes back to RBV where firm specific assets and capabilities together with other internal isolation mechanics is a driving performance metric (Teece et al., 1997; Wernerfelt, 1984). The banks of a lesser seize simply do not have the resources available to conduct digital innovation and digital transformation processes on their own. These banks should arguably strengthen the capabilities surrounding alliances and partnerships. As noted by most of the informants, the importance of these collaborations and partnerships has increased during the pandemic, not just for the smaller banks, but in general for everyone in the industry.

There is a practical challenge when evaluating the digital playing field for solutions (i.e., sensing other industries, gaining input from suppliers/alliances and customer demands). Being able to navigate through solutions and identify which that are applicable to their industry and

service field requires a lot of resources and research. Being able to discuss this among interdisciplinary teams within the banks and with potential collaboration partners appears to be a good approach for evaluating the digital playing field.

There are indications of practical implications in the process of realignment among the banks. These appear when there are introduced new systems and adjustment into the system portfolio, but actual practical optimization fail to manifest itself. Even though the pandemic has helped the banks to prioritize their actions, there is still difficulty to measure their actual benefits and contributions.

Seizing digital transformation during the pandemic

Looking at the banking organizations themselves, one of the most noticeable digital transformation processes during the pandemic is home-offices. As noted in the interviews this change is not limited to the banks, but arguably to most industries that has ability to work digitally. During the pandemic, as per national guidelines, the banks had to start working in home offices. One could argue that the organizational structure, routines and rules helped the bank seize this digital transformation. Their existing capabilities helped them easily rework and conduct these changes in an efficient and well-organized manners. As the environment of both customers and other ecosystem actors become more digital, the aspect of building the digital worker is a process that is seemingly more significant. As suggested in our findings, most banks has been working with the digital mindset and building digital competencies among the employees. One implication and challenge with this process during COVID-19 was noticeably connected to the organizational culture. The working practices had gone from being a hybrid form between voluntary digital and physical working practices into forced digital work practice. Some of the employees sticking to the old “pen and paper” approach somewhat struggled to properly adapt to the new working practices.

Facilitating more digital access and freedom for customers has been an important part of the banks strategic roadmap during the pandemic. This transformation processes was arguably accelerated because of the pandemic. The prospect of the digital customer was a heavily focus area already before pandemic for most of the banks. Most of the customers was already leaning towards digital tools and solutions. The customer expectations seems to be a vital driver for digital transformation and the banks sought after transformations and modifications to fulfill these expectations (Osmundsen et al., 2018). These new introduced digital adjustments and solutions are seemingly being introduced as long-term strategic

implementations. These processes includes much more digital interactions both for customers and employees. The argument for seizing and maintaining these processes is heavily influenced by customer expectations and demands. As argued by the banks, the customers' expectations is painted by what other industries offer their customers. With customers becoming more digitally capable and aware, there is no doubt that these solutions and adjustments are here to stay even after the pandemic. Judging from this it does indicate that the banks strive to sway away from *path dependency* and create new rules and practices to follow, more suited for the new environment.

Presented below is a figure of the practical implications for seizing digital transformation.

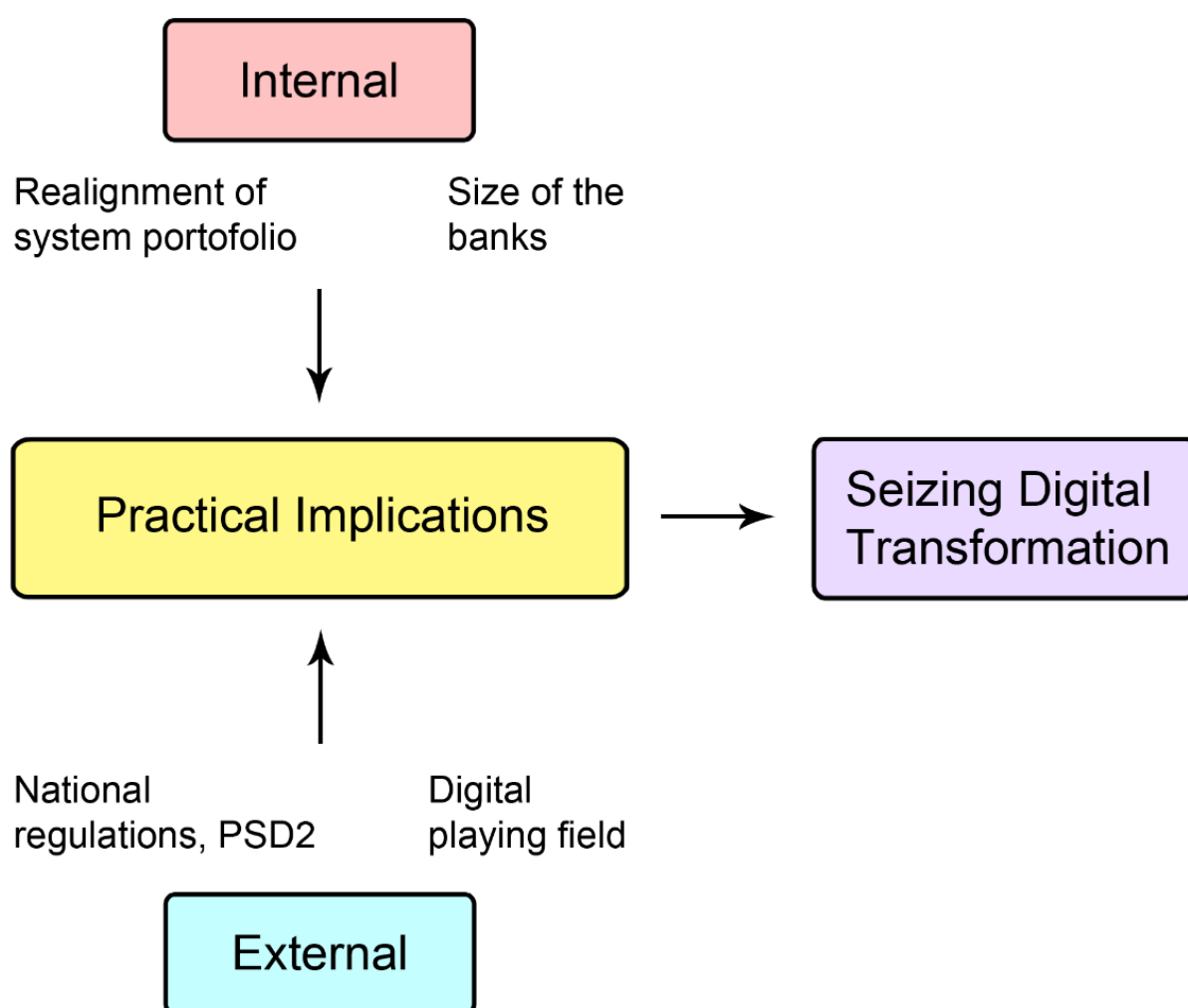


Figure 5, Source : The authors

5.3 Future ramifications and new environments

Ramifications for the future

Looking forwards, what awaits the banks in the future in terms of digital innovation and digital transformation? As discussed, these implementations will alter how the landscape for the banking industry will look like after COVID-19. COVID-19 has arguably not affected the banks in any significant way in terms actual planned digital transformation processes. Most of the implementations, bar home-offices, was pre-planned as future decisions within their strategic roadmap. As stated by Seetharaman (2020) the banks has benefited by being early adopters of technology which has safeguarded them from negative consequences of the pandemic. However, the environmental ramifications in their ecosystems due to the pandemic has affected their practices. An important on-going process is to continue working towards building more digital competencies among the employees. As the customers and the environment becomes more digital it is important that the banks do not fall behind, this is a focus point that during COVID-19 has been reinforced. As customers becomes more digital there will arguably be an increased demand for more accessible digital platforms for customers driven innovation processes.

Collaborations and alliances will arguably establish themselves as important area of interest especially in regard to innovation and digital transformation processes. Meetings and network building should, based on our findings, be conducted in a hybrid form of digital and physical means. The dangers of becoming too digital and loosing social contact and network building both with customers and collaborators could have unfavorable effects in the long run. These collaborations and alliances are also capabilities that can be utilized to create possibilities within the compliance regulative. Finding the correct partners within the environment could be a key in order to find the best solutions and decisions to both comply to the regulative framework and find possibilities that could lead to sustained advantage.

A challenge for most banks lays with the changing environment caused primarily of the digital customer. The idea of more digitalized accessibility and meetings has seemingly many advantages. The banks and the customers utilize time in a much more efficient manner. Instead of physically planning meetings with customers or utilizing worktime for travel to conferences, these processes can now done on the digital platforms. With the forced effects of the pandemic every participant in the environment are prepared and able to use the digital platforms to interact. The customers are now the ones that can start the interaction with the

banks from either the mobile bank application or from the computer. The challenge appears when customers becomes what the informants labels as “too digital”. Of course, this is a concern which is difficult to resolve. As mentioned, most of these implementations are here to stay and there is not much indicating that the customers will revert back to *path dependency* or decrease their usages of digital interaction platforms. When almost all interactions is conducted in the digital sphere one could argue that the social aspect is lost. This alludes to the reasoning behind the idea of a hybrid form, where both digital platforms and physical interaction should be utilized. It is up to each individual bank to make judgment on how this hybrid form should be setup, in order to both gain the efficiency and benefits of the digital solutions while maintaining the social relations with their customers and the other participants of their environment.

Capabilities for the new environment

In order to resolve some of the potential threats and challenges in the environment, there are some capabilities that appear more significant than others. Their capabilities should be focused around being able to respond with the correct amount of dynamism that matches the dynamism of the environment (Ambrosini et al., 2009). Based on our findings this would indicate an increased focus point on interactions and relations within the environment. As the environmental playing field becomes more digital and the regulative aspects becomes stricter, it is apparent that collaboration and alliances is of great importance. This implies that one could see a switch where the external capabilities becomes much more significant.

In recent times one could argue that the banks has had stable environments with predictable conditions. Even if the pandemic had an arguably minor impact on the banks themselves, their environment and its participants was greatly affected. Nobody can with certainty predict the nature of the environment in the aftermath of COVID-19. As mentioned, some banks has implemented shorter strategic horizons during COVID-19 in order to create prioritization areas and to negate the seemingly increased amount of uncertainty. COVID-19 has made it evident that environmental conditions can become very volatile and the strategic horizon and scenario planning are arguably capabilities of increased importance within new environments.

In our findings there are indications of an increased complexity within the sensing process. As technology usage has improved, so has the number of solutions. Both the banks themselves and the potential third party development collaborators must be able navigate through these solutions and be able to identify the correct implementation. The increased complexity

demands an increased uses of resources on sensing capabilities. Constructing a more systematic approach to customer testing, where customers can give more practical feedback than through surveys, is a practical example of this in our findings.

5.4 Theoretical implications

The goal of this research was to answer the call from Seetharaman (2020) and had its focus point on investigating dynamic capabilities and their relation to seizing digital transformation. We utilized a methodical framework (Teece, 2007), in order to categorize the dynamic capabilities utilized by the banks in order to answer the call from Krzakiewicz & Cyfert (2017) of utilizing a methodological approach of dynamic capabilities to understand the organizational strategic choices of firms.

With this research approach we managed to contribute and create a context on how dynamic capabilities and digital transformation processes supplement and affect each other during a crisis (Aramburu et al., 2021). An important point here is the arguably the increased importance and reinforcing effects of external capabilities in times of a crisis.

Another goal of this research was to further investigate how dynamic capabilities affect a firms effort for digital transformation (Werner and Wäger, 2019). This research has shown the importance of being able to sense the possible opportunities and being able to seize and transform them through environmental awareness and proper realignment through dynamic capabilities.

Seetharaman (2020) questioned if some of the arguably rash decisions potentially could be reverted in the aftermath of the pandemic. Based on our findings there is indicating factors that suggest the actions and efforts made during the pandemic are here to stay (i.e., more digital accessibility and freedom for customers, more interaction on digital platforms with the environmental participants and a more digital work form for the employees). However, they will presumably be adjusted in order to preserve the social, relational and culture aspects of the banks.

This research has given a unique insight into how the banking industry has been affected by the pandemic. Our findings has confirmed the statements from Seetharaman (2020) in that the banking industry has mostly been sheltered of the negative consequences of the pandemic. Our research do suggest that there has been an accelerated and reinforcing effect on decision making and implementation processes.

6. Limitations and future research

Limitations and weaknesses

Throughout the process of working on the thesis a few weaknesses and limitations has become apparent. We had very limited experience has interviewers which restricted the amount of information we were able to collect. During and after the conducted interviews we realized that we were a bit ambitious thinking we could fit all the answers straight into the framework we had chosen. During the interview we also saw that some of the questions was “too theoretical” where it confused the informants which lead to them not properly answering the questions. The informants also had different understandings and perception on different themes which made it difficult to properly categorize their information.

It was especially tough to properly separate seizing and transforming capabilities. We felt that our understanding of the concepts and the literature we presented lacked a clear separating definition of these terms. Because of this we felt that some of the themes and processes in within the capability framework “melted together” which made it difficult to separate them from each other.

Future research

Based on the remarks in this thesis it opens up for a few possibilities of future research. First and foremost, the regulation framework (PSD-2) is arguably one of the most significant factor and driver for innovation within the banking industry. Even though we did not ask about it directly in the interviews, all of the informants underlined the importance and significance of the govern regulation and its direct effect on digital innovation and digital transformation. An example of this could be a study with focus points on digital transformation processes under the regulative governance of financial institutions.

We have argued in our thesis that the banks during and after the pandemic must be able to balance the physical and digital interaction with its environment. An interesting research area would be to investigate how this should be approached by the banks. In what way can banks continue their digital transformation processes and simultaneously keep the social, relational and cultural aspects intact?

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Appendix

Appendix 1

Vil du delta i forskningsprosjektet

«Hvordan dynamiske kapabiliteter har hjulpet bedrifter til å gripe digital transformasjon gjennom Covid-19 pandemien»

-

«How dynamic capabilities has helped firms seize digital transformation during the covid-19 pandemic»

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å se hvordan bedrifter har gjennomgått digital transformasjon under Covid-19 pandemien. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Utgangspunktet for oppgaven er at vi ønsker å se nærmere på hvordan *bedrifter* omstilt seg digitalt som følge av Covid-19. Vi ønsker å forske på og intervju flere bedrifter innenfor samme bransje for å finne sammenhenger og forskjeller.

Hvem er ansvarlig for forskningsprosjektet?

Høgskolen i Innlandet er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?

Basert på våres utvalg av bedrifter av samme bransje og størrelse er deres bedrift av interesse for intervju.

Hva innebærer det for deg å delta?

Forespørselen er ett intervju med daglig leder eller personell tilknyttet strategisk digital ledelse, der intervjuets varighet er estimert til 60-90 minutter. Intervjuet vil bli utført med lydopptak og vil være spørsmål som omhandler bedriftens digitale omstillinger før, under og etter Covid-19 pandemien.

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.

- Det vil kun være prosjektgruppen i masteroppgaven som vil ha tilgang til lydopptakene som blir tatt opp i under intervjuet.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Opplysningene anonymiseres når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er **30.06.2021**. Alle lydopptak vil være slettet når masteroppgaven er publisert og sluttrapport er levert til NSD.

Dine rettigheter

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

- innsyn i hvilke personopplysninger som er registrert om deg, og å få utlevert en kopi av opplysningene,
- å få rettet personopplysninger om deg,
- å få slettet personopplysninger om deg, og
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Høgskolen i Innlandet har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

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

- Ansvarlig for masteroppgaven:
 - Ole Erik Skotterud Rasmussen og Krister Sveen Solheim
 - Mail: 238373@stud.inn.no og 238355@stud.inn.no
 - Tlf: 984 53 714 / 934 02 754
- Veileder for masteroppgaven:

- Xianwen Chen
- Xianwen.chen@inn.no
- Tlf: 984 21 622
- Høgskolen i Innlandets personvernombud:
 - Usman Asghar
 - Mail: Usman.asgar@inn.no / tlf: 61 28 74 83

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.

Med vennlig hilsen

Xianwen Chen
Forsker

Ole Erik Skotterud Rasmussen og Krister Sveen Solheim

Appendix 2

Interview guide

Before the interview

1. Is it ok if we utilize direct quotes in the thesis?
2. Can we record this interview?

Starting question

3. Can you clarify your position in the firm and how long you have been at the current position?
4. Can you tell us a little bit about the overall innovation and digital strategy of the bank?

Sensing

5. How has the processes of investigating innovation possibilities and identifying new technological opportunities been affected?
 - i) How was these processes affected by COVID-19? (e.g., was the processes accelerated by COVID-19)
6. When evaluating innovation and digitalization opportunities,
 - i) What are the customers roles in these processes?
 - ii) What are the employees roles in these processes?
 - iii) Has these roles been changed during COVID-19?
7. Are there any specific approaches used when the firm are in the process of identifying possibilities for innovation and digital transformation?
 - i) If not, is that something that could be beneficial?

Seizing

8. What has been the most vital capabilities for the Bank in order to conduct innovation and digitalization processes during the pandemic?
 - i) Does the organizational structure of the bank affect these processes?
 - ii) Has the organizational rules and routines been affected by these changes?

9. Has there been any changes towards how the Bank has approached business model innovation during this pandemic?

i) Has there been new collaborations during this time?

ii) Does the Bank utilize digital scenario planning or similar methods when approaching business innovation?

Transforming

10. How is the digital portfolio being balanced when new business model solutions are introduced? (i.e., how are these new business models being aligned with existing ones?)

11. How have the employees responded to the changes being made during this pandemic?

12. What are the benefits and value that the new innovation and digital solutions has offer the Bank?

i) Was some these of these change pre-planned implementations?

ii) Focusing on the implementations during COVID-19, will some of the these be cut-off in the aftermath of COIVD-19?

End thoughts

13. Is there anything else that you want to clarify or talk about that has not been asked?