Manoeuvring in the open banking era

The case of Nordea

Master thesis

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Abstract
The purpose of this study was to find out how an incumbent bank can become a leading player in the open banking era. The open banking era is characterised by new regulations (PSD2), technology, increased competition from new entrants in the market, and declining customer loyalty.

To best possible grasp the factors influencing the firm's abilities to innovate and develop the business, we conducted an exploratory analysis with a deductive approach. Using theories from the field of innovation and strategic management, a conceptual framework was constructed, which guided the thesis towards understanding how an incumbent bank can become a leading player in the open banking era. The data for our research was primarily collected by interviewing ten managers and employees from all the four Nordic countries working with Nordea's "Scandinavian open banking initiative", using a semi-structured interview technique.

Our research scope is limited to focusing on how Nordea can become a leading player in the open banking era through the use of open innovation. Through our sub questions, we found that Nordea have competitive advantages (position and size, preferred partner of choice, and compliance), are engaged in outside-in and coupled innovation process as well as internal programs for innovation, however they are lacking absorptive capacity and inherit organisational inertia due to their large size. Our main finding is that Nordea is a visionary and not a leader player in the open banking era. However, they could become a leading player in the future, by further developing their innovation activities and scope, as well as improve factors as absorptive capacity and organisational inertia.

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List of abbreviations

AISP Account Information Service Provider

API Application Programming Interface

CBS Core Banking System

CSC Common Secure Communication

EBA The European Banking Authority

EU The European Union

PISP Payment Initiation Service Provider

PSD Payment Service Directive (Council Directive, 2007/64/EC)

PSD2 Revised Payment Service Directive (Council Directive, (EU) 2015/2366)

PSP Payment Service Provider

RTS Regulatory Technical Standards

TPP Third Party Provider of Payment Services

Fintech Financial Technology company

BigTech Big Technology company

SAFe Scaled Agile Framework

SCA Secure Customer Access

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Introduction

In general, there have been little incentives for competition and transparency in the banking sector, this has handed the banks a monopoly over their customer's data, treating it as a proprietary asset. Additionally, the banking industry has not followed the same path as other industries, where innovation is used to create competitive advantages and remain competitive with new solutions or new products (Schueffel &Vanda, 2015). However, this is on the verge to change.

The financial sector is currently in a radical transformation triggered by developments in markets, economies, demographics, customers, technology, and regulations. The three most prominent trends found are increased competition, trust and elevated customer experiences. Regulations have placed increased pressure on the banks, the PSD2 is now forcing the banks to open up, giving the consumers control over their data. The PSD2 grants third-parties such as fintech's access to this previously exclusive industry by forcing the banks to give access to account data, this is going to foster innovation due to a whole new playing field, where the banks will face competition on a much larger scale then previously. In combination with regulation and shifting trends, it is creating an entirely changed industry structure, hereafter referred to as the open banking era.

These new transformations in the economic environment require the financial services sector to innovate and revitalise the trust of customers in financial institutions in order to achieve long-term sustainable growth. Thus, new means of differentiation and value addition must be implemented. As a reaction to the changed industry structure, the incumbent banks are creating new ways of capturing and creating value, grounded in collaboration and co-creation with fintech's and start-ups. These new strategies are commonly termed open banking initiatives. The open banking initiatives are compelling the banks to find new solutions to cope with the changing nature of development in the market while satisfying their existing customers.

Thus, many banks are starting to recognise the need for open innovation in order to increase competitiveness and gain a sustained competitive advantage in the open banking era (IBM, 2018). Open innovation theory is grounded in collaboration and 'openness', what can be seen in the banking industry today. Moreover, the definition of open banking stems from the concept of "open innovation coined by Henry Chesbrough" (IBM, 2018). The future of banking is about rethinking banking towards new models that are open, intelligent and based on collaborations. The banks need to establish new means to innovate in order to compete against the challenger banks, fintech's and bigtech's. In other words, the incumbent banks will need to open up and engage in open innovation if they want to become a leading player in the open banking era.

Problem statement

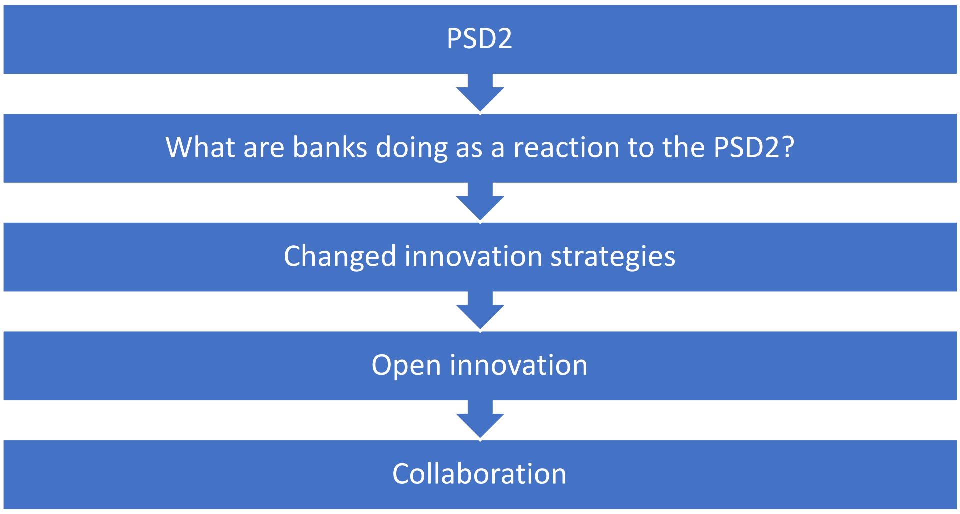

Figure 1: Problem statement, own contribution 2018

The above figure depicts the process of discovering our research problem. The PSD2 caused changed industry structures, with new players emerging and multiple banks establishing collaborative tools for enhanced innovation. This new ecosystem is currently evolving and has not been researched regarding the emerging cross-industry collaboration. Since collaboration is one of the cornerstones of open innovation, the problem statement is grounded in theory about open innovation. We are interested in how open innovation can be utilised in the banking industry, and especially the obstacles that can occur when actors of different calibre are collaborating

In this thesis, Nordea will be used as an example of how a large incumbent bank can become a leading player in the open banking era, in Scandinavia, and how open innovation can contribute to this. We have chosen Nordea as our case company due to their presence and good market position in the Nordic banking industry, as well as their current focus on open banking. This thesis will investigate how Nordea is using open innovation to compete in the new banking ecosystem and which hindrances that might be existing when undertaking collaboration as part of Nordea's value capturing strategy

Therefore, this thesis aims to understand whether open innovation will be one specific way the company can become a leading player in the open banking era. The bank's current competitive advantage and the organisational obstacles related will also be investigated. The following research question has been created to be able to answer this.

Research questions

The core research question is aiming to answer how an incumbent bank can become a leading player in the open banking era.

Core research question*:*

How can the incumbent bank become a leading player in the open banking era?

Through our three sub-research questions, the goal is to analyse factors of how the firm's current competitive advantage, external search abilities, organisation inertia and value creation through open innovation. The following sub-research questions have been established to determine the overall aspects of succeeding in becoming a leading player in the open banking era.

Sub-question 1:

The first sub-research questions attempt to answer the level of competitive advantage and experience the firm obtain, and if the firm's competitive advantage can contribute to the firm becoming a leading player in the open banking era.

What are the incumbent's banks current competitive advantages, and can the incumbent bank utilise these in the open banking era?

Sub-question 2:

In the second sub-research question, we focus on how the incumbent is utilising open innovation in the open banking era, and which open innovation processes the firm is engaged in.

How is the incumbent bank utilising open innovation in the open banking era?

Sub-question 3

In the third sub-research question, we focus on the company's ability to conduct external research, collaboration and partnerships by investigation the absorptive capacity and organisational inertia.

How and why are incumbent banks experiencing obstacles to open innovation?

Finally, the connection must be made between the three sub-research questions to determine the company's ability to become a leading player in the open banking era.

Motivation and purpose of thesis

We started the process of finding an interesting topic for our master thesis already about a year ago. The PSD2 was at the time anticipated to cripple the banks and shake up the industry with fintech's taking over the whole banking trade. After a few months, we saw that the consultancies started to shift the focus from industry shakedown to collaboration. A scenario of the giant banks collaborating with small fintech's was intriguing, and we decided on open banking as our topic.

The banking sector has been known for little competition and high customer loyalty. The PSD2 is expected to change this, due to regulations that aim to foster innovation. Given the scarcity of research conducted on the concept of open innovation in the financial sector, we aim to investigate it further using the case of Nordea. We will look at how Nordea can utilise the concept of open innovation to sustain a competitive advantage. Although the firms in the financial sector are starting to engage more in open innovation, there has not been conducted much research on the topic. The financial sector has been investigated regarding its importance for the economic growth in general, and there has been conducted research on collaboration, and co-creation between companies and their users to introduce innovative services (Poetz and Schreier, 2012). Despite this, there is comparably little insight into the significance of open innovation when developing new services and new products among banks (Schueffel and Vadana, 2015). The same goes for academic on search strategies when integrating open innovation in the financial sector, thus identification, integration and exploitation. Moreover, we found this intriguing due to the lack of research on which capabilities a bank need to have in order to engage in open innovation, and to collaborate successfully with external partners.

It is interesting to see how openness, including co-creating and collaboration, unfolds in the incumbent bank. How change occurs differently, and if structural obstacles are existing. The need to innovate has been inexistent due to lack of competition, and the market has been open mostly to large well-established players. Thus, innovation and transformation are needed to be competitive in the new era of banking. Third parties are granted access, and regulations are forcing banks to open up.

Disposition

This thesis is organised into eight parts. For a better understanding when reading the thesis, it is found beneficial to present the reader with an overview of the structure used in the thesis. The thesis will start with an introduction which aims to outline the problem statement including the research question, motivation and scope for undertaking the specific topic of research, and delimitation of theory. Next, the section will elaborate on the methodology explaining the methods of the study. The latter section will contain the conducted literature review, emphasising on open innovation. Followed by the context including information regarding the case company, the industry environment and a description of open banking. The case description and literature review create the context for the created framework which was used in the following analysis. The analysis aims to analyse the primary data found in the conducted interviews and is divided into three parts based upon the underlying supportive research questions. Subsequent the analysis is followed by a summary of findings and a discussion. Lastly, a final remark is given finishing the thesis with the conclusion.

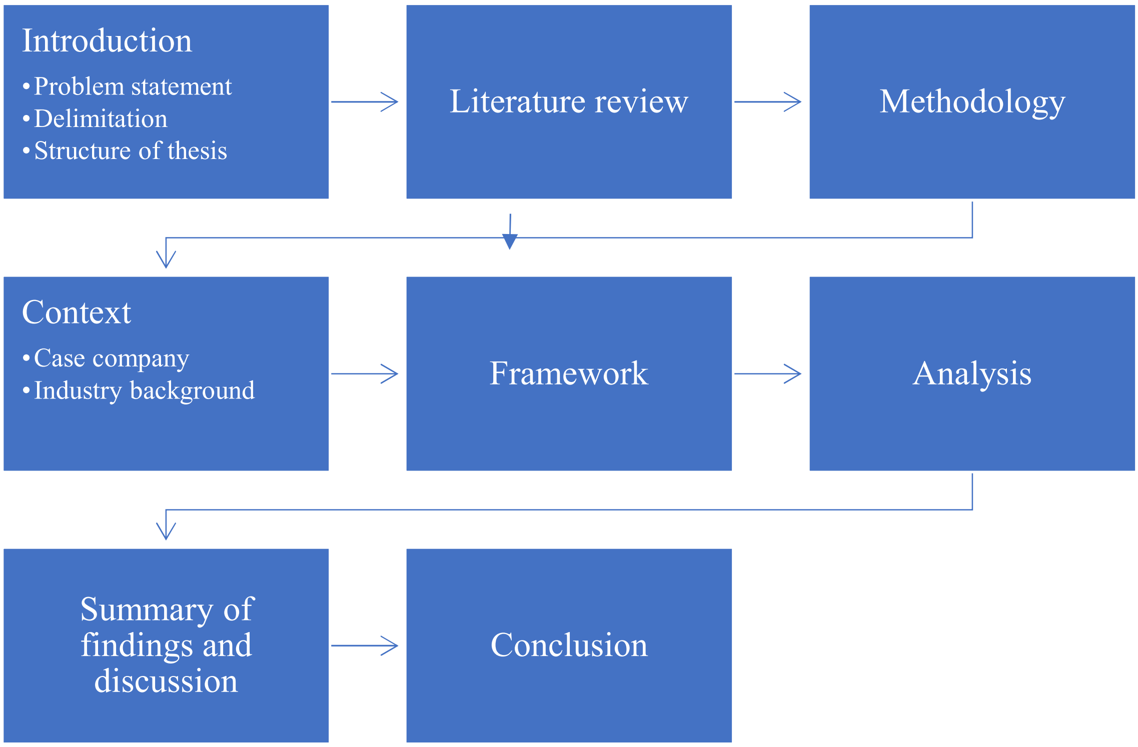

Figure 2: Thesis disposition, own contribution 2018

Delimitation of theory

The research scope is narrowed down to open innovation, and the company's absorptive capacity and organisational inertia related to this, thus excluding other recipients of open innovation. For instance, we could have included other concepts of and related to open innovation, like network theory, ambidextrous learning in organisation, appropriability, organisational structures relation to open innovation and collaboration among companies, and probably many more.

We have also introduced the concepts of inbound, outbound and coupled innovation processes, even though our case company is only engaged in inbound and coupled innovation processes. The reason behind including outbound processes in the literature was to give the reader a full overview and understanding of the different concepts.

Furthermore, a delimitation to this research is that we did not have the time to read all the articles about open innovation due to the high number of articles. When searching on google scholar, there are 3 650 000 number of hits when searching for open innovation. As a result of this, we focused on the articles most cited and most acknowledged.

Lastly, since open innovation in the financial sector is a relatively new topic within innovation theory, it has not been covered by many academic authors. Thus, it has been challenging finding an adequate number of reliable sources, and we have based our analysis on general findings of open innovation. Since the theories used, are based on research that uses examples from other sectors, one should keep in mind that those findings may not be fully applicable to the financial sector.

To conclude, the number of academic topics covered in this thesis might not be enough to give a full picture of our case companies position in the open banking era, but it will give a decent idea.

Literature review

The intention of the literature review is to describe and review the field of open innovation. The literature review can broadly be separated into four parts starting broad and narrowing down to the essence of the research question. Firstly, explaining the foundation of innovation, first-mover advantage, sustained competitive advantage and principles of closed innovation. Thus, laying the foundation for answering sub-research question one. Moving on to open innovation, and processes of open innovation with a brief interpretation of the differences between closed and open innovation, aiming to answer sub-research question two. Subsequent, the focus is aimed at the discovering utilisation and challenges related to external knowledge in open innovation, laying the foundation for sub-research question three. Lastly, the literature aspires to grasp the extent of usage of open innovation in the financial sector. The two latter parts, usage of external resources and open innovation in the financial sector purposely creates the frame for the further research, resulting in the established research question.

Characterising Innovation

When typing in innovation in Google Scholar, the search results in 3.8 million hits. This literature review will therefore just briefly touch upon the general idea of innovation before moving on to Henry Chesbrough's representation of what he describes as "closed innovation" (Chesbrough, 2003).

Innovation is the initial commercialisation of the invention by producing and marketing a new good or service or by using a new method of production (Grant, 2015). Innovation is a broadly used word, and the term innovation can be described, explained and used differently. The primary perception is that innovation is the adaption of a new idea in an organisation (Aiken & Hage, 1971). The concept of an idea can have a variety of attributes such as production, distribution or internal changes that in turn results in increased efficiency, lower costs or improvements in how to conduct innovation in the organisation (Kline & Rosenberg, 1986). There is also a collective recognition that innovation is vital to maintaining long-term growth and plays a crucial role in economic performance (Van Der Panne, van Beers & Kleinknecht, 2003), organisational competitiveness and success (McAdam & Keogh, 2004). Moreover, it creates better and cheaper products for society, and more efficient ways of producing and delivering these products and services, and thus contributes to a higher standard of living.

The first and, most influential scholar to study innovation was Joseph Schumpeter (Drejer, 2004; Hasan & Tucci, 2010). Schumpeter first brought up the subject of innovation in 1934, stating that "economic development is driven by the discontinuous emergence of new combinations (innovations) that are economically more viable than the old way of doing things" (Drejer, 2004, p.556). Schumpeter pointed out the significant connection to innovation with the comparison of the entrepreneur and the established firm. This research has made way for numerous articles and research on the topic of innovation. Porter (1996) explains that successful competition and achieving competitive advantage can manifest in the company by either build on the same or similar activities than rivals or build different activities. Schumpeter saw already in 1942 that both businesses and products must continuously evolve to the everchanging business environment, which in turn requires what Schumpeter calls 'creative destruction.'

Types and classification of innovations

Henderson and Clark (1990) defines innovations as either incremental, radical, architectural or modular. However, the two most common classifications are radical and incremental innovation. The difference between the types of innovation is measured by their impact on the established capabilities in the company. Moreover, they "divide the technological knowledge required to develop new products, and consequently to introduce innovation along two dimensions "knowledge of the components" and "knowledge of the linkage between them" (Henderson & Clark, 1990, p.3). "**Radical innovation** establishes a new dominant design, and hence a new set of core design concepts embodied in components that are linked together in a new architecture" (Henderson & Clark, 1990, p.3). It can be the basis for the successful entry of new firms or even the redefinition of an industry. **Incremental innovation** refines and extends an established design (ibid). Improvements occurs in individual components but the underlying core design concept and the link between them remain the same.

Moreover, Henderson and Clark (1990) noticed that it is not the industry leader, but small companies that find it easiest to disrupt industries. They argue that the smaller companies often can understand the necessity for change within an industry, or in an industry leader's product. More specifically, when the underlying motives of innovation are not understood, established companies usually rely on old habits and values to approach the innovation. Hence, adapting and understanding the necessity for change can be a rather difficult and time-consuming process. New market entrants often find it easier to introduce slack cultures which have a more prosperous environment for innovation (Henderson & Clark, 1990). Moreover, established companies do not see the necessity to innovate, if their current product is successfully targeting the customer. Innovative products are cheaper and simpler, implying that a company would dismantle its own products and profits by innovating versus keeping to the old products and status quo (Govindarajan & Kopalle, 2006).

First mover advantage

Researchers have stated that a first moving company does not have to triumph against the following companies (Christensen, 1997; Porter, 1996). On the other hand, research has shown that 'first movers' fail in 47 percent of the cases, while early market leaders (fast followers) only fail in 7 percent of the cases (Golder & Tellis, 1993). Thus, research on whether it is better to be a first mover, early follower or late entrant yields conflicting conclusions. Some of the studies contrasting early entrants (first movers and early followers) with late entrants find that early entrants have higher returns and survival rates, consistent with the first mover advantage (Schilling, M, 2017). The expression "first mover advantage" was first mentioned in 1988 paper by a David Montgomery and Marvin Lieberman, and business has a first-mover advantage if it is the first entrant and gains a competitive advantage through control of resources (Grant, 2015). Moreover, Lindegaard (2010) states that if a company make 'being the first mover' a strategic choice on open innovation in their associated industry the company will find that implementing is hard. Nevertheless, it will often result in a leadership position that is hard to copy.

Sustained competitive advantage

For an organisation to subsist in the market, the organisation it is necessary to develop an advanced position above its competitors. An organisation inherits a competitive advantage when following a value-creating strategy, not pursued or implemented by any other organisation that is operating in the same market (Barney, 1991). Moreover, the organisation needs to develop a sustained competitive advantage, to remain competitive. Which is a condition where other organisations are not capable of replicating the benefits that the organisation's strategy produces (Barney, 1991).

This establishes a resource-based perspective for competitive advantage where an organisation's resources, for example, its assets, knowledge, capabilities organisational processes, and so forth, represent the source of a sustained competitive advantage. An organisation´s ability to generate a sustained competitive advantage is dependent on the diversity and flexibility of strategic resources in the market as well as its characteristics (Barney, 1991).

If strategically essential resources are consistently distributed between competing organisations, each organisation can effortlessly implement strategies pursued by its competitors. Likewise, if the strategic resources are entirely mobile, then the competing organisations can easily access and terminate the competitive advantage of its opponent. Thus, to create a sustained competitive advantage, an organisation's strategic resources must be heterogeneous and stationary (Barney, 1991). However, a sustainable competitive advantage cannot be created for all the resources in an organisation. Therefore, Barney (1991) created a framework that aims to recognise which resources manages to obtain a sustained competitive advantage, the VRIN framework. The VRIN framework consists of four elements. Namely, Valuable, Rare, Imperfectly imitable and Non-substitutable via other resources (Barney, 1991).

Closed innovation

Until 2003 the common perception was that innovation was a closed process that unfolded internally, within the company and was not revealed before the product was finished. (Chesbrough, 2003).

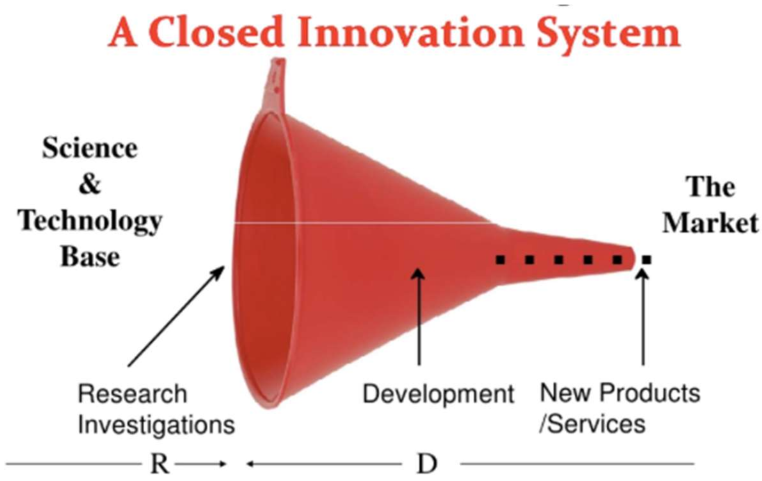

Figure 3: Closed Innovation Paradigm, Chesbrough, 2003

Figure 3 demonstrates how innovation acts in the closed system. Closed innovation is viewed as the traditional method of generating added value. New concepts emerge in a closed environment, such as a workshop or a laboratory. The underlying assumption in the closed innovation model is that our knowledge and experiences are our greatest assets and that they are a firm's exclusive property. Moreover, these assets are what drive the innovative processes and enable the firm to expand their business activities. In the closed innovation model, new ideas are subject to a gradual selection process. To determine which ideas that have the highest chances of success the selection criteria are based on the closed paradigm, which treats ideas as proprietary resources. Questions that arise in the diffusion process may include: "do we have the necessary knowledge, are our technologies up to the task and can we sell the product" (Chesbrough, 2003). The new concept or idea is fed through the narrow funnel that works as a filtering process which diffuses ideas throughout the innovation process. What remains after the diffusion is only the promising ideas that will reach the market. Chesbrough (2003) states that competition is limited in this model because ideas that are deemed invaluable to the firm may be valuable to others and can create profit in other terms than producing the service or good in-house.

Open innovation

Companies need to innovate to stay alive. However, innovation processes can be challenging to manage (Pisano, g.p. 2015). Today, innovation is mostly introduced by combining internal knowledge with external innovation sources (Von Hippel, 2006; Chesbrough;2003 Laursen and Salter 2006). Shorter innovation cycles, increased customer demands, and industrial R&D escalating cost has led to an economic pressure for more innovation, and new innovation strategies in the last decade (Von Hippel, 2006; Laursen and Salter, 2006). Furthermore, the availability and mobility of skilled workforces, the growth of venture capital markets, external options, and increased capability of external workers are additional reasons (Chesbrough, 2003).

Today firms are using open innovation as a way to gain and or sustain a competitive advantage. Meaning that the companies innovating externally (and less novel internally) have better chances of reducing risks and costs in developing a product from an idea (Chesbrough, 2009). More and more firms are successfully implementing open innovation, P&G, Siemens (Enkel, Gassmann & Chesbrough, 2009), IBM, Xeron, Intel (Chesbrough 2006), and LEGO (Antorini, Muñiz & Askildsen, 2012) have all successful open innovation strategies. The successful examples of these firms suggest that open innovation may be a sustainable trend that provides the basis for achieving competitive advantage (Huston & Sakkab, 2006). Altogether this has led to increased attention to open innovation, and it has been argued that innovation processes must be opened and externalised to gain access to new knowledge outside the organisation.

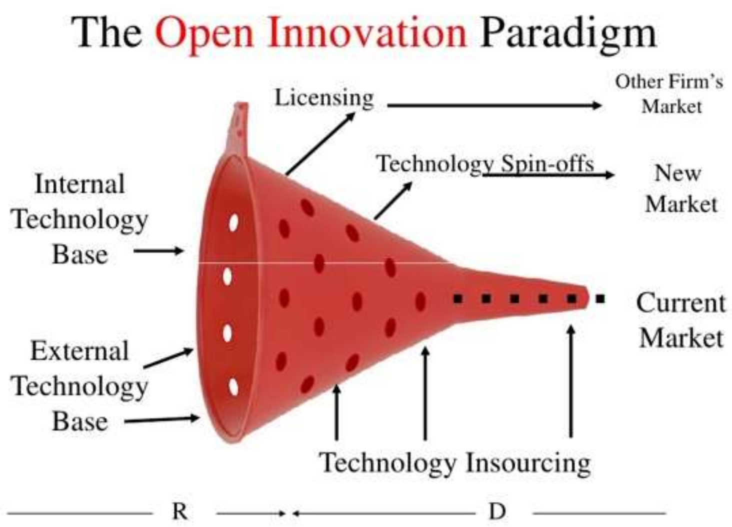

Figure 4: Open Innovation Paradigm, Chesbrough 2003

Figure 4 illustrates how the model of open innovation works. Chesbrough (2006) argues that companies should organise their innovation processes to become more open to external knowledge and ideas. Moreover, companies should let more of their internal ideas and knowledge flow to the outside when those ideas are not being used internally in the company. In the open innovation, paradigm “projects can be launched from either internal or external technology sources, and new technology can enter into the process at various stages” (Chesbrough, 2006, p.3). Furthermore, projects can go to market in many ways as well, such as throughout licensing or a spin-off venture company.

The term "Open Innovation" was coined by Chesbrough in his book “Open innovation: the new imperative (2003)”. Chesbrough’s most recent and preferred definition of open innovation is “Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively” (Chesbrough, 2006). As mentioned above open innovation assumes that internal ideas also can be taken to market through external channels, outside the current businesses of the organisation, to generate additional value. Chesbrough (2003) argues that organisations should use open innovation as a way to sustain their competitive advantage in the battle between companies that are more internally innovative. On the other hand, some researchers claim that the concept of open innovation is not entirely new since innovation has always been open to some degree (Lazzarotti & Manzini, 2009; Dahlander & Gann, 2010).

Closed versus open innovation

A traditional “closed” approach to innovation follows the philosophy that “successful innovation requires control, i.e. that companies need to generate ideas, develop, and finance them on their own” (Chesbrough 2003, p.20). On the other hand, in “the open innovation approach firms commercialise both external and internal ideas by deploying outside, as well as in-house pathways to the market” (Chesbrough 2003, p.21). The open innovation model emerged as companies realised that they needed to attain knowledge from external markets and that working with external partners can create a competitive advantage.

A significant difference between the open and closed innovation models is how the companies search for new ideas. Chesbrough uses the terms “false positives” and “false negatives” to describe this. “False positives” are bad ideas that initially look promising, while “false negatives” project that initially seems to lack potential but turn out to be valuable. Both, the closed and open innovation model can limit the “false positives”, but only the open innovation model can save “false negatives” (Chesbrough, 2003). When a company is “too focused on its internal processes, it is prone to miss out on a number of “false negatives" because many will fall outside the organisations current business model or will need to be combined with external technologies to reveal their potential" (Chesbrough, 2003, p.130). However, the concepts of closed and open innovation are not mutually exclusive, and innovation activities are situated on a continuum from closed to open innovation, and success of open innovation can differ across industries and technologies (Dahlander & Gann, 2010).

Open innovation processes

Firms may open up their innovation processes on two dimensions (Chesbrough, 2003) The first one is "outside-in", or "inbound", where a firm brings ideas and contributions from the external environment into the company's innovation process. And the latter being "inside-out", or "outbound", where unused ideas are brought outside of the firm to be incorporated into other businesses and their innovation processes (Chesbrough, 2011). Moreover, Gassmann and Enkel (2004) added a third classification, "Coupled process", which is a combination of both outside- in and inside-out flows of innovation by the firm to complement both.

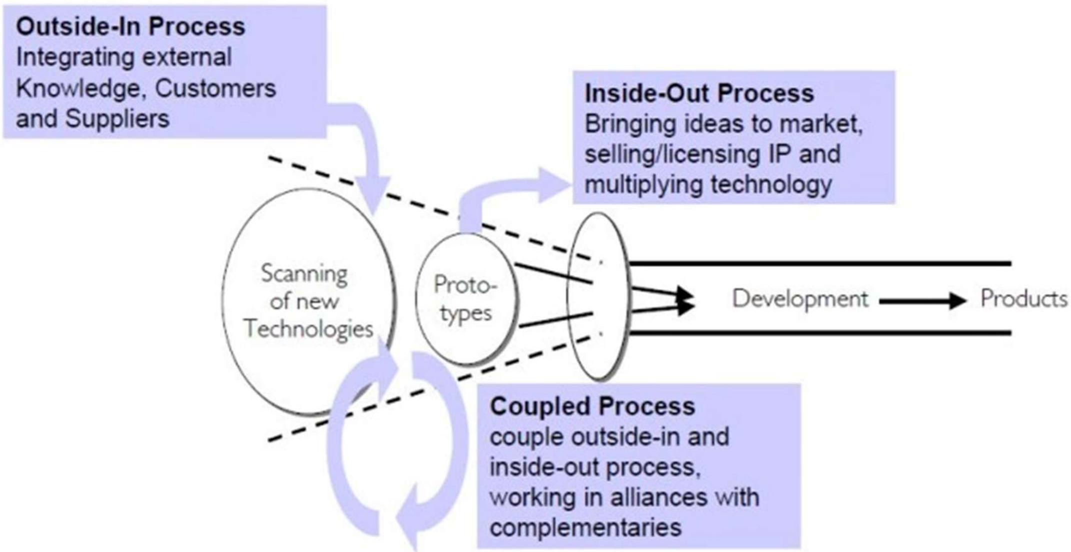

Figure 5: Open innovation processes, Gassmann and Enkel 2004

Inbound/outside in open innovation

Inbound open innovation is the use of external sources of innovation within the firm. For example, a firm may licence a technology developed elsewhere and integrating that component into its own technology solution, rather than seeking to develop an equivalent in-house. The different types of outside-in processes are employee involvement, customer involvement, external networking, external participation, outsourcing R&D and inward IP licensing (Gassman & Enkel, 2004). It is argued that inbound innovation is recognised as the primary contributor to the competitive advantage gained by utilising an open innovation approach, as the company does not have to rely solely on their own R&D (Chesbrough & Crowther, 2006).

Outbound/inside out open innovation

Outbound open innovation is the use of external pathways to develop and commercialise innovation (Chesbrough & Crowther, 2006). An example of outbound open innovation is if a firm licence out its product to another firm which can help further develop the product, for instance by obtaining necessary regulatory approvals. With the outbound open innovation, the firms can look for external organisations with business models that are better suited to commercialise a given technology, rather than relying entirely on internal paths to market (Chesbrough & Crowther, 2006). The primary takeaway from outbound open innovation is that a firm's ability to generate returns depends on the fit between the open innovation approach, IP management strategy and the firm's overall business model (Gassman & Enkel, 2004).

Coupled innovation process

The coupled innovation process combines the outside-in innovation (inbound) and the inside-out innovation (outbound) dimensions. Rather than sharing existing resources and expertise, firms work together to develop new knowledge and solutions (Gassman & Enkel, 2004). With a coupled process the firms inside-out and outside-in processes are connected in a strategic network or cooperation between specific partners, this could be other firms, universities or research institutions. This type of collaboration can involve close integration, for instance, a joint venture or a looser affiliation such as engagement through an innovation competition. The goal is a continuous exchange and development of knowledge based on the learning process that benefits both parties with an improved market position, increased competitive advantage and sharing of the risks (Gassman & Enkel, 2004).

Pecuniary and non-pecuniary benefits

Dahlander & Gann (2010) further divides inbound and outbound into pecuniary and non-pecuniary interactions and based their framework on the degree of openness. They provided an analytical framework of four different forms of open innovation activities. The two inbound activities are acquiring and sourcing. "**Acquiring** referrers to activities where companies acquire input to innovation processes through the marketplace, either by licence in or acquiring a company" (Dahlander & Gann 2010, p.705). The positive effect of acquiring is that it gives more control over the innovation process, but on the other hand it's hard to integrate a new organisation (Dahlander & Gann, 2010.) "**Sourcing** is when the firm uses external sources of innovation. If existing ideas are available, the firm might as well use them" (Dahlander & Gann 2010, p.705). The positive effect is that the company get access to more knowledge and creative ideas, but in contrary, this may be too many ideas for the company to handle, and this lead to a risk that they might miss out on the best ideas (ibid).

Furthermore, there are two outbound processes: revealing and selling. **Selling** refers to the commercialisation of internally developed knowledge for market prices (Dahlander & Gann 2010). This includes low risk, you sell the knowledge and then you don't have to further develop. Contrary, this might lead to transaction cost issues as it is hard to estimate the "real" value of the innovation, and potentially the company could have earned much more (Ibid, p.704). **Revealing** includes activities where companies reveal internal resources without direct financial rewards but aim at indirect benefits (Dahlander & Gann 2010). "Revealing information can lead to incremental innovation on the products and thus resulting in cumulative advantages for the whole industry" (Dahlander & Gann, 2010. P.703). On the other hand, it is tough to capture benefit and appropriate from the innovation (ibid).

The use of external resources in open innovation

The most important part open innovation compared to closed innovation is the facilitation of collaboration with external partners. Here external organisations are a source of discovering new ideas and business opportunities. The numbers of businesses that utilise external sources of knowledge for R&D projects internally is increasing (Sandulli & Chesbrough, 2009).

Also, Kratzer, Meissner & Roud (2017) found that companies who were successful in building an innovation culture where "internal capabilities are developed and maintained as the underlying basis for external relations in all forms", were more successful when engaging with external partners. Again, this explains the importance for a company to have a good innovation culture to succeed with open innovation through collaboration with external partners. Furthermore, Kratzer et al. (2017) found that companies who are engaged in a broad range of internal innovation activities are also more successful when collaborating with external partners. Those companies have a different kind of mindset and are more open to risk. However, it is important that management promote innovation activities from the top of the organisation to the bottom in order to create an innovation culture, as it should not just be top managers and external partners who are involved in innovation activities, rather it should be the whole organisation (Kratzer et al.,2017).

Another type of utilising external resources is crowdsourcing. Howe (2006) defines Crowdsourcing as "an act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call." This implies giving up some control, and not overseeing the direction of extradition of new ideas. According to Pisano & Verganti (2008) a key factor in crowdsourcing or other open collaboration is that everyone should be allowed to participate in the idea generation. "In totally open collaboration, everyone (suppliers, customers, designers, research institutions, students and even competitors can participate" (Pisano & Verganti, 2008, p.3).

However, these open modes also have their disadvantages. Notably, they are not as effective as a closed approach in identifying and attracting the best players. This is because "as the number of participants increase, the likelihood that a participant solution will be selected decrease" (Pisani & Verganti, 2008, p.4). Thus, the best solvers may rather choose to participate in closed collaborations. Moreover, if the solutions have to be experimented with, it can be very time- consuming and therefore also very costly. In this case, Pisano and Verganti (2008) argue that it is better to pursue fewer and better ideas.

Another solution can then be to have controlled environments of innovation, so that the firm has control over the ideas that are being sourced and the scopes of relationships, with for example innovation campuses or invitation-only to specific companies for development of ideas. Lastly, there has been an increased focus on working with external partners to validate and test new services or products, so that the firm can expand the scale and scope of their ideas and experiments so that resources and development time decreases (Pisano & Verganti (2008).

Challenges with the locating external resources

The most important challenges with the ability to utilise external resources internally are related to several obstacles with absorptive capacity and organisational inertia (Cohen & Lecinthal 1990, Foss, Laursen & Pedersen, 2011). Absorptive capacity was first mentioned by Cohen and Levinthal (1990) and describes the exchange of knowledge of amongst firms and is bounded by three capabilities: resource search, integration and exploitation. Absorptive capacity constitutes a crucial determinant of a firm's ability to innovate on the basis of externally sourced knowledge. In the context of open innovation, this implies that to be successful with utilising external resources the firm need to have capabilities to identify resources that may create value, integrate external and internal resources and exploit the external resources (Sandulli & Chesbrough, 2009).

Identify resources

In their search for innovation, organisations can either exploit their internal expertise and knowledge bases (i.e, local search) or systematically explore new knowledge located outside of their boundaries (i.e, distant search) (Poetz & Prugl, 2010). Local search or exploitative search describes how deeply firm reuses its existing knowledge. Thus, they have a higher degree of search depth (Katila & Ahuja, 2002, p.1183). Organisations that use "local search uses its pre-existing knowledge or closely related knowledge in order to achieve new knowledge on a subject" (Katila &Ahuja 2002, p.1183). Distant or explorative search describes "how widely a firm explores new knowledge, thus they have a higher degree of search scope" (Katila &Ahuja, 2002: P.1183). Explorative search behaviour involves a conscious effort to move away from current organisational routines and knowledge bases (Kathila & Ahuja, 2002. P.1184). Furthermore, Ahuja and Katila (2004) found that a comprehensive search for external resources does not recover better results in terms of better resources.

Furthermore, Laursen and Salter (2006) introduced the two values, search depth and search breadth, when describing the companies' degree of open innovation. Where "search breadth is the amount of external sources that a company uses in its innovation process, while search depth is how deep a firm uses or draw from the external sources" (Laursen & Salter, 2006, p.134) What they found is that open innovation strategies where companies search both deep and in a broad area will likely to be more innovative. If the market and technology is not in the first phase of the product lifecycle, but technology is starting to take shape, then a company will benefit from having a wide range of external sources as these can provide different relevant information. "As the technology and market mature and the network supporting innovation expands, more and more actors inside the innovation system retain specialist knowledge. In order to access the variety of knowledge sources in these networks, innovative firms need to scan across a wide number of search channels" (Laursen & Salter 2006, p.146). Moreover, Lou and de Rond (2006) found that development of internal resources could be affected by an excessive search for external resources. It is also argued that even though a company are opening up their innovation activities "they too often look only where they always look", and that won't get them anywhere, (Poetz & Prügl, 2010 p. 897). With this it can be argued that sometimes a company have to go even broader and maybe look at analogous markets. The search for partners should also extend beyond the scope of excess revenue or value of the resources. This means that aspects of trust, partner commitment, the complexity of managing the partnership, ability to integrate the external resources and so on should be considered when identifying resources (Shah & Swaminathan, 2008).

Integrate and exploit

Capabilities related to being able to integrate external resources is normally built over time through a trial and error process (Cohen & Levinthal, 1990). Though, large firms or firms with complex hierarchal structures will often be inefficient due to higher complexity in terms of managing the resource exchange (Roper, Love & Du, 2007). Thus, if a firm has a high complexity regarding resource integration, open innovation will be less appropriate. However, research suggests that synergies of implementation of external resources are larger in big firms and is, therefore, more likely to integrate external resources (Torkkeli, Kock & Salmi .2009).

However, there is some "cost" in relation to using a broad range of external partners. It takes time and resources for a company to learn how to appropriate from the use of external sources. Also, "using too many external resources can result in the creating of so many ideas that the company will not be able to filter and manage them, and thus they don't have the capabilities to absorb the ideas" (Laursen & Salter 2006, p.135). Moreover, performance will decrease when the company use more than 11 sources as shown on the graph below (Laursen & Salter, 2006).

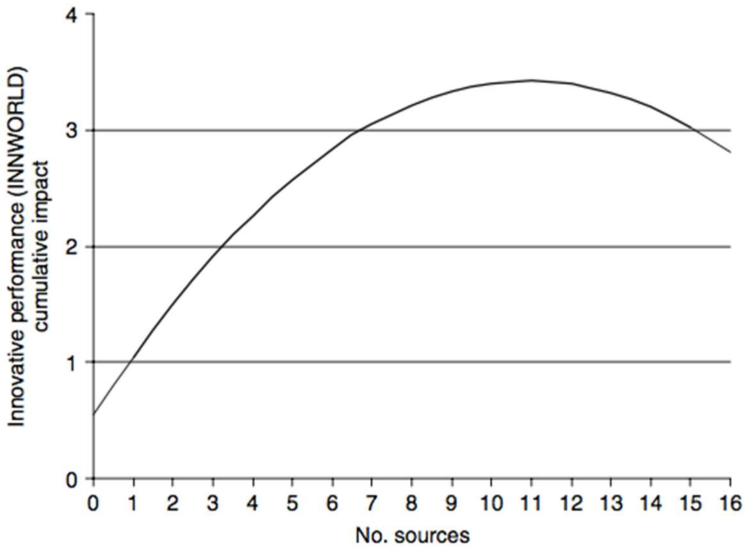

Figure 6: Innovation performance, Laursen and Salter 2006

The type of innovation that a company hopes for is also affected by the difference in the external sources. If a company's innovation is radical or closed to being radical, then having a large number of different external partners will have a smaller effect on the innovative performance. On the other hand, with incremental innovation, it is better to have fewer external sources, but higher search scope with these external partners. Moreover, research shows that "how widely a firm explores external knowledge strongly influences its performance in creating new products and services" (Poetz & Prügl, 2010, p.897).

Organisational inertia

Opening and integration of external resources likely require quite extensive organisational changes. Henderson and Clark (1990) found that a high level of organisational routines and standardisation can make a company reluctant to implement changes. Hence, difficult to integrate external resources. Moreover, there can be internal reluctances to integrate external resources because they are not developed internally which is called the 'the not invented here syndrome' (Chesbrough, 2006). Also, when tapping into open innovation, and acquiring external knowledge, it is important for companies to be able to handle the impact on their employees of doing so. This is important because the incentives to engage in internal innovation could be affected in a negative manner. Employees might think that their work is of less importance and therefor the effectiveness of incentives for innovation can decline (Fu, 2012. P.515.) It is therefore important to prepare an organisation for tapping into open innovation in order to maintain the level of internal innovation.

Moreover, according to the findings of Foss et al. (2011), a firm's absorptive capacity is affected by its internal organisation. More specifically, by emphasising organisational practices such as greater decision rights delegation, more intensive internal communication, and incentivising knowledge acquisition and knowledge sharing among its employees they will achieve an improved "absorptive capacity". (Foss et al., 2011)

The figure below depicts the attributions of organisational capabilities of the open and closed innovation.

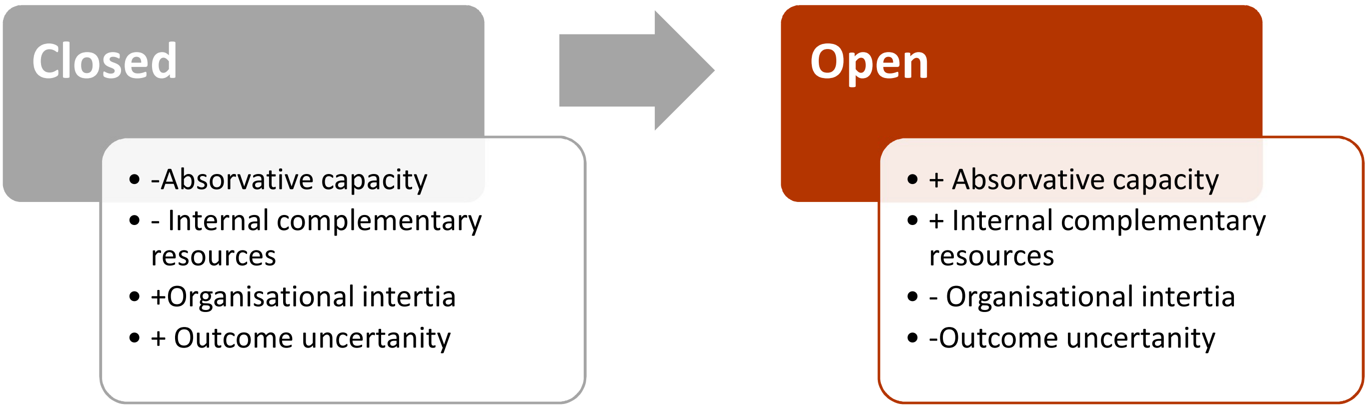

Figure 7: Determinants of open innovation, based on Sandulli and Chesbrough 2009

Open innovation in the financial sector

In a world of increased digitalisation and technological innovation, most sectors and industries have caught up to the rapid transformation technology contributes to. With fast transformation and technological innovation, competition increases (Bettis & Hitt, 1995). There has been written a lot about financial innovation, and the current period is described to be on with rapid financial innovation. The banking industry has however not followed the same path as other industries, where innovation is used to create competitive advantage and remain competitive in an industry with new solutions or new products. The financial industry has instead focused on sustaining or incremental innovations which are focusing on adapting to changing to market conditions and customer needs. The underlying concept of services remains the same (Martovoy et al., 2015). One might argue that is not the case, but the most complex financial products can generally be described as ´bundles´ of the standard products (Bettis & Hitt, 1995). The primary products have remained mostly unchanged.

Technology has been given increased attention over the past decade, particularly after the financial crisis in 2008, and disruptive technologies and regulations are known to be the most prominent drivers for change in the banking industry (Chesbrough, 2009). Thus, banks have to find solutions to cope with the changing nature of development in the market while satisfying their existing customers. These new transformations in the economic environment require the financial services sector to innovate, revise business models and revitalise the trust of customers in financial institutions to achieve long-term sustainable growth (Martovoy et al., 2015).

Milne (2016) explains the slow rate of technological innovation in banking as a result of network structures in the financial services sector. He explains that innovation in the financial sector requires coordination amongst competing institutions for the innovation to be beneficial. Furthermore, he states that in practice there will always be losers in joint coordination and that these parties will be reluctant to collaborate, which in turn results in market failure. Moreover, reaching an agreement with innovating payment schemes has been difficult because no individual bank will achieve competitive advantages from innovation when the bank is dependent on other participating banks.

In general, there is a lack of innovation in the financial sector, and this is associated with the conservationism of the financial sector, which again explains the lack of openness and the absence of an entrepreneurial orientation. Thus, there have not been many incentives for open innovation generally in the financial sector. On the other hand, the financial crisis helped to usher a shift from a closed to a more open innovation paradigm in the financial sector, and it has led to an increased focus on collaborative innovation for the banks to grow (Schueffel & Vadana, 2015). Many banks are now starting to recognise the need for open innovation not only to increase competitiveness but also to survive. Thus, “efficient, fast and productive, open innovation strategies are essential for the survival of the banks as the industry evolves” (Schueffel & Vadana, 2015. P.43)

Hindrances of open innovation in the financial sector

Even though there has been a shift towards more open innovation in the financial sector as a result of the financial crisis, it’s still scarily applied (Martovoy et al., 2015). The reasons being the bank's organisational structure, cultural inertia and cost related to the cooperation (money and time). Furthermore, “the lack of consistency among managers instructions and the manager's (consistent) failure to implement and support innovation are additional reasons” (Schueffel & Vadana, 2015, p.2). Moreover, there has been a lack of innovation strategies, which Pisano (2015) argue is crucial in order to succeed with innovation improvement. “Good innovation strategies should align diverse groups within the organisation while clarifying objectives and priorities and help effort focus around them (Pisano, 2015. p.1)” If you don’t have a clear innovation strategy different parts of an organisation can easily wind up pursuing conflicting priorities, even if there is a clear business strategy.

Also, many financial companies, especially the small financial institutions do not invite customers to participate in their innovation process. The reasons for this are that integrating clients in the innovation process is seen as complex and time-consuming undertaking. Another reason that mainly large firm provides is that they prefer to use the knowledge and experience possessed by other affiliates belonging to an identical corporate group. Thus they are not willing to look outside their “normal” scope when searching for partners (Schueffel & Vadana, 2015).

Further reasons for not embracing open innovation in the financial sector are legal and compliance constraints. The financial sector is heavily regulated, and some banks see this as an obstacle. On the other hand, legal and compliance should not deter any bank from implementing an open innovation strategy. The belief behind this is that other heavily regulated sectors like the pharmaceutical sector have successfully implemented an open innovation strategy (Schueffel & Vanda. 2015).

Positive effects of open innovation in the financial sector

When overcoming these constraints banks should use open innovation more widely. The positive effects of open innovation will be seen in various areas, such as speed and flexibility of operations and a broadening of distribution channels (Martovoy et al, 2015; Fasnach, 2009) However, the journey from closed to open innovation in the financial sector is not an easy one. It is argued that culture within the company, as well as creativity training programs, idea collection systems or other similar initiatives play an important role in innovation (Schilling, 2017). Moreover, Gassman and Enkel (2004) and Chesbrough (2010) states that creating a culture that values outside competences and know-hows is crucial for open innovation practices. Thus, innovating in an open system requires a different way of thinking, and that could be challenging, but with an open innovation culture you will avoid the "not invented here syndrome" (Chesbrough, 2006).

Moreover, "new relationships with a growing network of participants must be developed and managed" (Fasnach, 2009, p.1). A network of business partners is an essential intangible part of a company's asset. Such networks create knowledge and learning and have therefore become strategically imperative for many firms (Chesbrough in Fasnach, 2009). Firms that are embedded in rich networks are more likely to have greater innovation performance. "The company's openness to external environment can improve its ability to innovate, especially in industries with high level of technological opportunities" (Laursen & Salter 2006, p.133). Firms that are more open to external sources are more likely to have a higher level of innovative performance because by using external sources they "get access to capabilities and resources that they don't have in-house" (Laursen & Salter, 2006, p.146).

Furthermore, partnerships are considered as a source of knowledge required to develop and leverage the capability for innovation in a firm. Thus, open innovation in the financial sector occurs when solutions to address client's need are evolving openly and should be developed in collaboration. Also, the resulting products or services must be distributed through a flexible network of partners as they can contribute with complementary assets (Fasnach, 2009). The transformation from closed to open innovation also requires new competencies for the management as well as an open innovation attitude among both the managers and employees.

Sources of knowledge

Moreover, for a firm to successfully implement open innovation, the most critical internal sources of knowledge for open innovation in the financial sector are frontline employees, dedicated new service development teams, bank executives and backstage staff (Martovoy et al, 2015). Furthermore, cooperation with external partners is the most important external source of knowledge when implementing open innovation. "Cooperation with external partners lead to increased customer satisfaction, development of skills for the employees, access to a broader range of ideas, knowledge and expertise" (Martovoy et al., 2015, p.4). Moreover, cooperation with external partners lead to access to new technology, decreased costs and new approaches to problem-solving. When taking advantage of external partners such as suppliers, customers, and partner companies from different industries the banks will achieve better innovations.

Consequently, it has been found that organisations who leverage knowledge from multiple channels result in advantages as higher innovation performance, higher customer benefit and higher novelty (Schilling, 2017; Poetz & Schreier, 2012; Chesbrough, 2003). Summarised, the cooperation with external partners are gaining the banks both pecuniary and non-pecuniary benefits for open innovation (Dahlander & Gann, 2010). The disadvantage of cooperation in the financial sector is the cost related to collaboration (Martovoy et al., 2015), which also Dahlander and Gann (2010) found to be one of the pecuniary disadvantages of open innovation in general.

Altogether these strategic initiatives involve significant time, money and risk. Nevertheless, the alternative is much riskier. Constant reliance on a closed model forces the customers to accept less than the best financial products, incomplete advice and services (Manchov, 2016; Chesbrough, 2011). When the competition rises, and the customer gain increased knowledge about the different providers, they will have an increased number of options and financial service providers to turn to. Those who fail to meet the customer's expectations will fall behind and lose their competitive advantage (EVRY, 2016; Manchov 2016). Henry Chesbrough (2009) agrees and states that financial markets are too sophisticated, too liquid and too competitive to allow underperforming firms to thrive for very long.

Methodology

This section presents and explains the choice of methodology associated with the research approach, research design, data collection and data analysis. Reliability, validity, interviewer/interviewee biases and ethical considerations are also examined. The term methodology refers to the theory of how research should be undertaken (Saunders, Lewis & Thornhill, 2016), and discusses the underlying reasons why particular methods were used

Research approach

Due to the limited amount on pre-existing research on how open innovation can help a financial institution to adapt to changes in the industry, this research aims to test the applicability of the theory elaborated on in the literature review on the case of Nordea. When going from theory to data, and not the other way around the study will have a deductive approach. A deductive approach is when you develop a theory, hypothesis and design a research strategy to test the hypothesis, while an inductive approach is where you collect data and based on the data analysis develop a theory (Saunders et al., 2016).

Research design

A research design is a plan on how to answer the research question (Saunders et al., 2016) Moreover it is "the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions of the study. Articulating "theory" about what is being studied and what is to be learned helps to operationalise case study designs and make them more explicit" (Yin, 2009, p.25). The nature of the research question and with the insufficient amount of existing research on the topic, it follows that the design will be descriptive through its use of theory and qualitative data, by collecting data in a non-numerical form. The use of qualitative data enabled us to explore the essence, and the relationship between the data collected (Saunders et al., 2016). Since the purpose of our research is to gain an accurate profile of a situation, a descriptive study is the best fit (Saunders et al., 2016). Moreover, we had a clear picture of the phenomenon we wanted to collect data about before the collection of data, which also supports that this is a descriptive study.

The research design is a combination of primary and secondary data, in terms of a case study and a literature review. The primary source for the empirical study of the research is semi-structured interviews with different managers and employees from Nordea. The secondary data is information found on the internet about the company, whitepapers from consultancy firms and also information retrieved through different seminars (KPMG Open Banking seminar and Nordeas breakfast seminar at Copenhagen

Innovation Lab), which the case company contributed to. The secondary data will also be scientific literature, which will form the scientific and theoretical approach to the assignment. A weakness of using secondary data is that it might have been collected for a specific purpose contrasting the research question of this thesis (Yin, 2009). With this in mind, the secondary data has been carefully collected in order not to reflect a biased perspective (Yin, 2009).

Research strategy

"The research strategy is a plan of action to achieve a goal and is a defined plan of how researchers will go about answering the research question" (Saunders et al., 2016, p.177). The research strategy will be a single case study of Nordea about their open banking approach in Scandinavia. In this case study, the point of interest is how Nordea can become a leading player in the open banking era by engaging in open innovation, and the organisational obstacles related to this. Nordea's open banking strategy is providing us with an opportunity to observe and analyse a phenomenon that few if not none has considered before. Thus, the single case study approach was chosen due to the nature of the case, it is a unique case that has not been researched before. Nordea was mainly chosen as case company due to their high focus on innovation and their proactive approach in the open banking era. They claim to be the first mover in relation to open banking, and it is interesting to see if they also could become a leading player.

In a case study, the case is chosen for its unique characteristics, and the findings are not representative. The purpose of a case study is to gain in-depth understanding and insight into this particular case (Saunders et al., 2016). "A case study is an in-depth inquiry into a topic or phenomena within its real-life settings, leading to rich, empirical descriptions and the development of theory" (Dubois & Gadde 2002; Eisenhardt 1989; Eisenhardt and Graebner 2007; Ridder et al., 2014; Yin, 2009 in Saunders et al, 2016. P.212). Moreover, with a case study, Saunders et al. (2016) highlight the importance of context, adding that within a case study the boundaries between the phenomena being studied and the context which is being studied are not always apparent.

Figure 8 below outlines our research approach:

Figure 8: Research approach, own contribution 2018

Time horizon

Our case study collects data over a short period of time, respectively one semester. We are examining the phenomena at a specific point in time; hence our study is cross-sectional in nature (Saunders et al., 2016). Even though Nordea's strategy and business model are continually evolving, the time constraints of our master thesis make a cross-sectional study the most appropriate choice. Most master theses are cross-sectional studies, due to the scarcity of time, and Saunders et al. (2016) argue that there is rarely enough time for longitude studies when writing a master thesis.

Data collection

Semi-structured interviews are the primary technique for data collection, a technique generating mainly non-numerical data. The data collection was conducted by interviewing 10 different managers and employees from Nordea of whom we found relevant regarding our research question. With a non-probability sampling technique, the interview objects were mainly chosen on the basis of their knowledge and capability to help answer the research question. Semi-structured interviews provide the researcher with flexibility, as the interviews consist of both structured and unstructured sections (Saunders et al., 2016). Before conducting the interviews, an interview guide was prepared. The guide consisted of around 15 questions focused on the three areas of the open banking initiative, open innovation and collaboration with external partners. The interview guide was sent to the respondents who wanted it before conducting the interview, four of the interviewees preferred to see the interview guide in advance. The reason for choosing semi-structured interviews is to let the interviewers express themselves in their own words, allowing them to express their opinions, personal experience and thoughts on the themes related to open innovation in Nordea.

"In semi-structured interviews, the researcher has a list of topics and key questions to cover but is allowed to move away from the interview guide, add new questions and leave out previously formed questions" (Saunders et al., 2016, p.391). This flexible approach proved valuable, as we were able to ask to follow up questions which were not written in the interview guide. Moreover, this approach also enabled us to identify questions which we did not consider when preparing the interview guide. We aimed to ask open questions, which facilitated longer and extensive answers. The interview guide is attached in appendix 1.

Other information about the company was found on the web, from Nordea's web pages and different whitepapers from consultancy firms. Our approach results in a combination of both first-and second-hand sources about the case company, thus avoiding bias from the firm.

Interviews

Peter was chosen as a main contact person since we meet him several times at different seminars, and due to his position in the company. Peter introduced us to other 5 other employees in Nordea we could interview. Furthermore, around 10 managers with different positions were contacted by email, where 5 showed further interest for an interview. The managers and employees were chosen because of their position in Nordea and their areas of expertise. Furthermore, we wanted to interview someone from all of Nordea's three open banking departments and from group digital. Also, the interviews were chosen based on their geographical location. We wanted to interview managers from all the four Scandinavian countries, Denmark, Norway, Sweden and Finland since Nordea's open banking approach is a "Scandinavian approach".

Sampling

The sample size with semi-structured interviews varies according to the research question and research objective (Saunders et al., 2016). In general, semi-structured interviews should preferably have a sample-size between 5 and 25 (Saunders et al., 2016). Our sampling size is 10 interviews. It could be argued that one limitation of this thesis is the number of interviews. However, the focus has been to extract as much tacit knowledge about Open banking in Nordea from the interviews as possible. Therefore, the focus has been placed on the length of the interviews rather than the quantity. Also, ten interviews are enough based on the fact that the first interview gave a lot of new insight and new information, while the last ones did not contribute with any new knowledge the others had not talked about. Thus, it could have been enough with around 8 interviews as shown in graph 9 below.

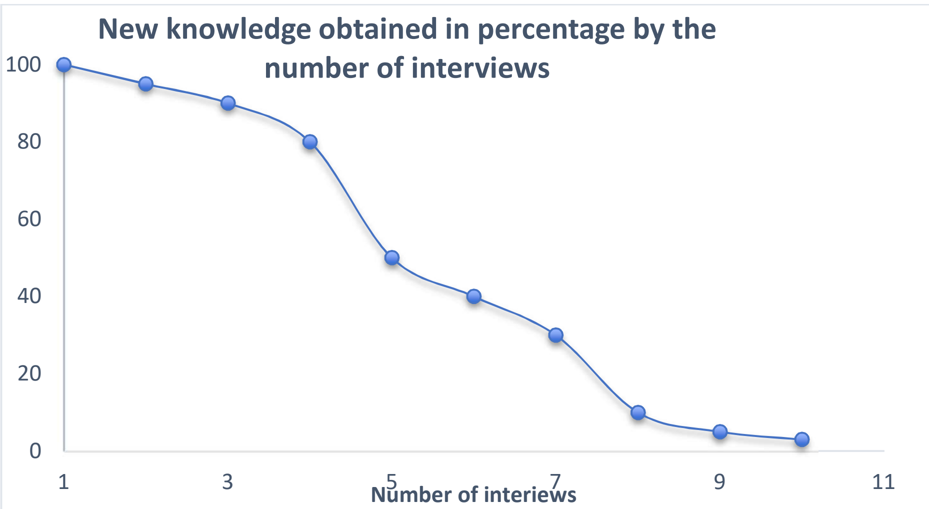

Figure 9: Interview saturation, own contribution 2018

Data preparation

After the interviews, our recordings were transcribed as quickly as possible. This provided us with the opportunity to become familiar with the data collected while at the same time gaining us an overview. Moreover, as mentioned above secondary data were collected during the whole research process.

Data analysis

The basis of the study was primary data collected through semi-structured, individual interviews with managers or employees working with Open Banking in Nordea. In relation to open banking Nordea has a line organisation called Open Banking where they have three teams. The three teams are open development, open banking partnerships and open banking community. Moreover, they have a Nordic focus with a team for each of the Nordic countries, Norway, Denmark, Sweden and Finland. We have talked to representatives from all the countries and all the open banking teams. Moreover, we also choose to speak to managers and employees from group digital as they work closely with the three open banking teams on open banking. In total have we collected data from 10 different employees, with interviews of different length and different ways of interviewing. Additionally, the majority of the informants requested anonymity, so their original name will not be included, and we have chosen to give them fake names. In the table 1 below, we have named the interviews, their position, department, length of interview and type of interview.

Interview	Position	Department	Length of interview	Type of interview
1: Peter	Strategic Business Developer	Open Banking Partnerships	1,5 Hour	Face to Face
2: Anne	Strategic Business Developer	Open Banking Development	1 Hour	Face to Face
3: Mads	Head of development	Open Banking Development	30 Minutes	Skype
4: Sandra	Strategic Partner	Group Digital	1 hour	Telephone
5: Fredrik	Professional	Group Digital	1 Hour	Telephone
6: Mathilde	Graduate	Group Digital	1,15 Hour	Face to Face

7: Julie	Partner Manger	Open Banking Partnerships	30 minutes	Telephone
8: Thomas	Head of Open banking	Open banking	30 minutes	Face to Face
9: Emma	Head of Open Banking Community	Open Banking Community	30 minutes	Telephone
10: Caroline	Open Banking Business Developer and Partner manager	Open Banking Partnerships	1 hour	Skype

Table 1: Interview respondents, own contribution 2018

All the interviews were recorded, as it gives thorough documentation of the interview. Recording the interviews also gave us freedom during the interview since not everything had to be written down. Thus, we could give our full focus to the person being interviewed. We started the interview with general, open-ended questions in order not to lead the interviewee into a specific track. The aim was to gain further insight into Nordea's open banking initiative, which capabilities they have to build, and knowledge about their partnerships and innovation activities.

Research quality

Reliability

Reliability refers to replication and consistency. "If a researcher is able to replicate an earlier research design and achieve the same findings, then that research would be seen as being reliable" (Saunders et al., 2016. P.202). However, this is not relevant in a case study, as a single case study at a set point in time is not meant to be repeated. A single case study shows the results at the time when the case study was performed. The same study conducted by different researchers at a different point in time may generate different results.

Validity

Validity referees to the appropriateness of the measures used, accuracy of the analysis of the result and generalisability of the findings (Saunders et al., 2016). The validity of qualitative interviews is based on how well the researcher is able to understand what the respondents really mean (Saunders et al., 2016). Validity was accomplished through follow-up questions, and clarification of questions if we did not understand something. Our interview objective can be considered a reliable source of information due to their work experience in the field and due to their position in the company.

Interviewer bias is when the appearance or behaviour of the interviewer may affect the interviewees' responses. Interviewee bias concerns interviewees attempting to present themselves in a certain way that may not reflect reality (Saunders et al., 2016). Interviewers may avoid negative topics. However, we felt that the interviewers were honest and willing to also talk about negative topics, and both negative and positive topics were discussed during interview sessions. However, to avoid any form of biases, we also tried to focus on our behaviour by avoiding negativity and asking questions in an objective way (Saunders et al., 2016). Moreover, we avoided asking leading questions and let the interview objectives speak freely.

Ethical considerations

Ethical considerations are most significant where research involves human participants, irrespective of whatever the research is conducted person to person (Saunders et al., 2016). We have mainly used traditional access in our research by conducting face-to-face and skype/telephone interviews. Furthermore, we used the web to gather secondary data. Thus, we had hybrid access, which combined traditional and internet-mediated approaches. Our research design involves humans and personal data, and therefore it is essential to take into account ethical considerations by protecting the rights, dignity and welfare of those who were participating (Saunders et al., 2016). Thus, we have been open and honest to all our interviewers about our objectives, and we have explained them their role in the study. Moreover, the data we have collected have been critically reviewed before conclusions were drawn. Regarding the accuracy of the data collected, we gave the participants sufficient amount of time to answer the questions and transcribed every single word recorded during the interview.

Moreover, it was essential for us to obtain research objectivity and not misrepresent the data collected in the analysis stage, and we strived to keep a high degree of integrity (Saunders et al., 2016). We also made sure that we got consent to conduct audio recording assuring the participants that the recording would not be made available to anyone else. By informing the interviewers that they were recorded, we wanted to be sure that the recordings did not limit them, and also the way they choose to respond to our questions. Furthermore, we made ethical considerations regarding the use of secondary data. Thus, assuring that the references we use are accurate and correctly cited in our bibliography (Saunders et al.,2016). Finally, we aimed to maintain objectivity in our research, and not selectively choosing the data to present in our analysis.

Weaknesses of this study

Limitations

First, since Open Innovation in the financial sector is a relatively new topic within innovation theory, not many academic authors have covered it. With a new research subject with a limited selection of academic papers, we had to use our best judgment to ensure that our secondary sources are of high quality. Another potential limitation is our research design, meaning that another type of research, e.g. including statistics as part of the analysis instead of only interviews could have yielded different results. Thus, the insights from this study are limited, but potentially helpful when trying to understand how large banks innovate and the obstacles related to collaborations with external partners. Moreover, the findings are not supposed to be generalised as this is a single case study at a specific time. However, a case study may serve as a foundation for further research, which can lead to generalisable findings of open innovation and the obstacles by collaboration with external partners in the financial sector. Finally, an interview is often biased on both sides, which affects its objectivism, and therefore the validity of our work. Also, in this qualitative study, the findings in the interviews could be interpreted differently by other researchers.

Delimitation

A delimitation is that having only interviewed 10 people from two departments in an organisation of over 30000 employees does not provide us with the ‘whole picture’. However, we choose to limit our scope to the two departments “open banking” and “group digital”, and further limit it to Scandinavia as Nordea has a Nordic focus on open banking. We could probably have talked to more employees working with open banking, but as explained above this did not give us any new information. Moreover, we had to limit the numbers of interviews due to the time constraint related to writing a master thesis.

Another delimitation is that we are only focusing on Nordea in Scandinavia, and their Scandinavian open banking approach. As a consequence of this we are focusing on their innovation activities related to open banking in Scandinavia. Off course they have other innovation activities on in the organisation, but that is out of the scope of our paper.

Context

The context aims to create a background for the analysis, both in Nordea and the industry environment. The first part of the context purposely elaborates on the outline that is changing the banking industry, summarised by an altered industry environment and regulatory changes. These two factors have in sum created the new era of open banking facilitating increased collaboration and co-creation in the industry. The attributes of open banking are explained, as well as the current open banking initiative in Nordea.

Banking

A bank is in general terms an institution that operates as a middleman or an agent for individuals and institutions. Traditionally the established bank has overseen the whole value-chain, producing and distributing their own products and services without outside interference. The bank is distributing its products through its own channels, such as mobile, web and branches.

Case company – Nordea AB

Nordea is the most extensive financial service group in the Nordic and Baltic region (Nordea, 2018a), and they are present in 17 countries, including their four Nordic markets, i.e., Denmark, Finland, Norway and Sweden. The Nordic markets together constitute the 10th largest economy in the world, and Nordea are the third largest cooperation in the Nordic region, thus making them one of the top 10 financial service companies in Europe based on market capitalisation (Nordea, 2018a).

The brand name comes from putting together the words "Nordic" and "Ideas". The purpose of the name is to signify how they share and develop good Nordic ideas to create high- quality solutions based on standard Nordic values such as openness, equality and caring for the environment (Nordea, 2018b). As of 2018 Nordea has 30,399 employees with a total of EUR 9.5 in operating income and total assets of EUR 581.6 billion. Furthermore, the bank has four different business areas, namely:

Personal banking which includes advisory and service staff, channels and product units under a common strategy, operating model and governance across markets (Nordea, 2017a).

***Commercial and business banking**,* which serves Nordea's corporate customers and includes transaction banking (Nordea, 2017a).

Wholesale banking that provides financial solutions to Nordea's large Nordic and international institutional customers. The offering includes a diverse range of financing, cash management and payments services, investment banking, and capital markets products and securities service (Nordea, 2017a).

Wealth management provides investment, savings, life insurance and risk management products. The customers are served through various channels including a pan-Nordic private banking platform. (Nordea, 2017a).
Moreover, Nordea has the most extensive customer base in the Nordic region with 10 million personal banking customers and 700 thousand corporate customers (Nordea, 2018c), and their vision is: “To be a trusted partner that is easy to deal with, using our broad expertise to offer you relevant services – anywhere and anytime you need us” (Nordea 2018e).

One of Nordea’s goals is to become a ‘truly digital bank’, their ambition is to obtain ‘state of the art’ distribution channels, IT infrastructure and operations. Thus, enabling efficient, agile and compliant operations (Nordea, 2018d). Moreover, Nordea is aiming to stay in the forefront as a digital relationship bank combining the two purposes, being digital and maintain customer relationships (Nordea, 2015).

Furthermore, Nordea believes that their future competitive advantage will be fueled by the way they integrate new and existing technology, to react to increasing customer expectations with the necessary speed (Nordea, 2018e). Nordea is stating that the reason for innovating is that the uncertain future requires an agile multi-option approach and that customers decide what the future technology landscape will look like. They are also confident that banks will continue to play a vital role in collaboration (Nordea, 2017c). Furthermore, Nordea is converging over 400 legacy platforms into their new core banking platform and a new payment platform, a customer and counterparty master solution and a common data warehouse (Nordea, 2018d). Additionally, Nordea has set a target to be best in class in terms of regulatory compliance Emphasising on

“*implementing new rules and regulations quickly and making it an integral part of their business model, in order to capture the benefit of compliance-driven investments also in the form of a deeper understanding of their customers and risks*” (Nordea, 2018d).

To achieve this Nordea has introduced a number of strategic initiatives such as cultural changes, customer first and digitalisation and distribution transformation. Lastly, Nordea wants to have a personal and digital relationship with their customers to maintain the safe and trusted partner they believe their customer value (Nordea, 2015).

Trends and conditions that are impacting the banking industry

The industry environment Nordea is operating in is complex and diverse. After the financial crisis, banks are trailing trust, while technology companies are gaining more trust, especially with young consumers of banking services.

Increased competition

Nordea sees increased competition in terms of new players like fintech's, bigtech's and challenger banks (Nordea, 2017b). Nordea sees increased competition especially in the payment industry, but also across the whole industry. The increased competition is caused by shifting market conditions, technology, and financial innovation. (Nordea, 2018f). Moreover, there is an increased awareness towards changing industry conditions in the banking industry, and multiple banks are starting to show external measures in the era of open banking to apprehend these challenges (Cognizant, 2017).

Competitors

The emergence of fin-techs and start-ups has drastically increased competition in the banking space (Accenture, 2016). The word fintech is an abbreviation of financial technology. In a narrow sense, the term refers to the small firms that deliver innovative financial solutions, but in a broader sense, it defines all financial innovations that are brought into the market by small and large organisations. A Fintech encompasses all new business models and solutions that are aimed at improving the efficiency of the financial services market. The popularity of FinTech is based on the assumption that new technologies may help the industry foster financial innovation. FinTech infuses all parts of the traditional bank's value chain by finding elements to improve or alter in the value chain, thus finding new functions to introduce in traditional banking. Although many FinTech start-ups and technologies are small, with narrow value propositions, they are collectively breaking up the banking system and revolutionising the industry. Exploring the status of the financial industry start-up scene increased investments are signalling increased attention and interest in the financial industry (Accenture, 2016a). It is evident that the increasing amount of venture capital dispensed to these companies is an indicator of growing interest in the FinTech industry, where digital payments are a central phenomenon (EY, 2017a).

Bigtech´s are large companies that operate in the technology sector such as Apple, Amazon and Alphabet (Google) they have over time come to be some of the largest companies in the world and can bring tremendous competition to the banking sector. Facebook acquired licenses for e-money and payment services in December 2016 (TechCrunch, 2017) and it is expected that the other large tech-giants will follow in this untapped market. For example, could Google combine financial data with spending patterns, location data and online behaviour to add increased context and relevance to banking, to offer even better and personalised banking services These companies have a significant presence in the world in terms of a large customer base and brand awareness. In November 2015 many of these technology leading companies, such as Amazon, Apple, Google and PayPal announced the establishment of Financial Innovation Now, a collaborative initiative that promotes fostering innovation in the financial services industry (Finextra, 2015). One of the founding principles of the initiative is that a customer should have complete access to their customer data for being able to leverage it for better interest rates and services.

New types of banks have spun out of changing market- and customer conditions and is changing how the consumer wishes to communicate and consume banking services. The term “challenger banks” covers a variety of entities with different target business models and target markets. Multiple papers have tried to categorise the different types, McKinsey (2016) mentions four different types of challenger banks, like Pseudo, Large, Small and Real while KPMG (2016) uses three different categories to describe the challenger banks: Larger, small and digitally-focused challengers. This thesis will combine these types under the umbrella of “digital challenger banks”. The digital bank is built with a vision of reaching their clients using solitary digital augmentation such as through online web-pages or mobile apps. Some of these banks are often close to the traditional bank’s business model and value-chain however, these banks tend to be more consumer-driven, thus, focusing on consumer credit.

Trust

Loyal customers are one of the most vital aspects of being a successful bank (Filip & Anghel, 2009). However, the big technology companies are also gaining trust, and according to Bain & Company (2017), some of the largest technology companies like PayPal and Amazon are almost at the same ‘level’ of trust as banks and credit unions. A recent report conducted by EPSI (2017) concludes with Nordic banks struggling with trust and image problems from customers. Moreover, EPSI (2016) believes that the low customer satisfaction with Nordic banks is related to lack of innovation, enhanced regulation and transparency in market communication.

Additionally, millennials are most prone to utilise services from large technology companies. The big technology companies are increasingly attractive to the customers due to their digital advancement, large customer base and good customer experiences (Bain & Company 2017). Thus, an increasing number of consumers are willing to devour financial services from technology companies especially if the experience of using these services are superior to what is offered by the traditional bank. The large technology companies are gaining increased trust due to their recognition and familiarity from the customer, who already use their services in other areas. However, it is not expected that fintech’s have the same level of trust as the large technology companies due to the above argument of recognition and familiarity.

Customer expectations

Customers can source services from many vendors, and they are becoming increasingly well educated in terms of prices and 'what is available in the market'. Customers are expecting immediate solutions regarding accessibility and everything to works seamlessly at all times, on all devices and platforms (Marous, J, 2016). The increasing customer expectations also place pressure on innovation for the banks since the customers demand new services, like for example, direct transfers, apps for transferring money between banks and utilisation of Apple Pay. Moreover, the customer interacts with their bank differently than before. After the increased accessibility of every platform direct communication in branches are decreasing, and communication on digital channels is increasing (Marous, J, 2016). However, a study conducted by EPSI (2017) state that retail banks, small and incumbent, must be local and personal to be the "future winners". Thus, even though banking services are offered digitally, there has to be a local, personal and trustworthy relationship with the bank.

Nordea is also aware that more customers are expecting customisation in services (Nordea, 2015). Thus, they are expected to know what the customer needs are based only on previous data. It is apparent that the increasing customer expectations can be seen in relation to the evolution of technology across all industries. Moreover, technology development is one of the most significant trends in the industry. Both in terms of customers preferably using digital solutions when accessing banking services, and that technology calls for a more rapid transformation that before. Thus, the increased technological development puts a pressure on the incumbent bank to be more agile in decision making, while also making new services and products available for the customer. Additionally, technology has also enabled the occurrence of open banking, which enables third-party providers to access to banking data through API technology. For the customers, the technological developments are associated with the digital experience through mobile banks, mobile applications, direct transfers and elegant user interfaces.

Regulation

The banking industry is heavily regulated, and after the financial crisis in 2008, the banking industry has been an object for increased regulations in all areas. Such as capital requirements, money laundering, privacy and personal data protection and the new payment systems directives. Most banks are now ahead with risk and compliance initiatives. It is foreseen that the regulatory initiatives will increase, and thus remain a significant and ongoing challenge. Seeing that the industry for a long time has been subject to an increasingly growing regulatory environment, the banks have built capabilities manoeuvring this setting.

Regulatory changes in the banking industry

Payment system directive 2

PSD2 aims to catch up with the fast-technological advances and to stimulate Europe's fintech industry further. The directive aims to level the 'playing field' for fintech's and banks, thus, opening the EU payments market by allowing third-parties access to customers' account information (EBA, 2016). The purpose of implementing can be summed up with three factors: Broaden the scope of the regulatory outline of PSD to cover new services and companies, repair the ambiguities in the existing legal framework of PSD to enhance customer protection and improve transparency and lastly, drive competition and foster innovation by reducing entry barriers for new payment service providers and online account information service providers (EBA, 2016). The changes introduced by PSD2 are extensive and will have significant implications for several parties including banks, payment service providers fintech companies, bigtech companies and customers.

The PSD2 directive elaborates on these companies and is categorised as Third-Party Payment Service Providers, which is the common term of the Third-Party Account Information Service Providers (AISP) and Third-Party Payment Initiation Service Providers (PISP). Amongst other requirements, the PSD2 obliges banks to allow authorised AISPs and PISPs access to customers account data, when the customer has given both the banks and the AISP or PISP permission for these companies to access their payment information. AISP are the service providers with access to the account information of bank customers. Those services could use transaction data to analyse users spending behaviour, or aggregating users account information from several banks into one overview (EVRY, 2016). Such services could use transaction data to analyse users spending behaviour or aggregate a user's account information from several banks into one overview. PISPs with PSD2 allows regulated third-party PISPs to initiate payments directly from customer payments accounts if they have the customers consent. A PISP service is provided by those that stand between the payer and his online payments account, by starting the payment to a third-party beneficiary (EVRY, 2016).

The regulatory part of PSD2 is one of the leading aspects of PSD2. The security component and regulations introduce new security requirements covering account access and electronic payments. For the incumbent bank, the regulations present itself as a double-edged sword. On the one hand, it protects the traditional bank's traditional business. On the other hand, it restricts the bank from excluding fintech's (The Economist, 2015). The security requirements build on the guidance issued by the EBA in the Guidelines for the Security of Internet Payments (EBA, 2014). The regulatory framework of the PSD2 are built upon regulatory technical standards (RTS) The RTS describes the technical framework for the implementation of PSD2 with a central focus on strong customer authentication (SCA) and on common and secure communication (CSC). Moreover, the PSD2 was enforced in January 2018, but the RTS's have an incubation time of 18 months, meaning that the RST's will not be enforced before September 2019 (EBA, 2015).

SCA, for PISPs to operate as a TPP of payment services there will be implemented standard two-factor authentication. PISPs will be expected to implement SCA whenever a customer accesses their payment accounts or initiates an electronic payment. The regulations for AISP´s will be somewhat softer since the AISP´s do not carry out transactions on behalf of other parties (EBA, 2015).
CSC, the RTS on CSC specifies requirements for communication between banks and third-party providers. Meaning that the banks must open a channel making it possible to access data for the TPP. This channel will also make it possible for banks and TPP to identify each other when accessing customer data. The banks are planning on opening API channels to enforce this RTS (EBA, 2015).

Open banking

The establishment of the open banking initiative derives from the PSD2 forcing the banks to open up, as well as the trends that are creating a changed business environment. These impacts on banks have made many traditional banks showing an increased focus on open banking. Multiple papers show that banks have shown increased attention to enter partnerships with fintech's, start incubators for FinTech development, or create venture funds to finance fintech's from the outside (Deza & Reyes, 2017).

API – Application Program interface

Most definitions of open banking revolve around standardisations of how bank´s share data with third parties and is going to do this by leveraging open API´s (Open Banking Limited, 2017). Quickly explained, an API is an interface used by programs to interact with an application (Jacobson, Woods & Brail, 2012). By providing open API´s other parties can take advantage of what others can build on them, rather than building it yourself. Since the interface is used by programs to communicate with an application there is no user interface, the API is invisible to the end user (Jacobson et al., 2012). An API is as an interface that revolves around the view that interfaces should be scalable, reusable and secure. API's, therefore, promises to reduce both cost and lead time of interfacing between systems. Thus, allowing faster, cheaper and better innovation on a larger scale (Jacobson et al., 2012). The term and how the API works are somewhat technical. But for business managers, the API represents itself as business opportunities, access to new revenue streams and maximisation of customer value, in this case leveraging customer data to create personalised banking services.

The standardised open API all banks are required to offer, in relation to the PSD2, is not going to incur any additional revenue because the bank is not allowed to charge a premium (Opinion Piece, 2017). The bank is only allowed to charge the customer the same price that has previously been charged. It is then easy to see that the implementation of an API platform is costly even though API´s are in general viewed cost-effective. The bank is required to maintain these API and create this data. As the content and interpretation of the PSD2 have been made more transparent as time has passed it has been apparent to banks that solely complying with the directive is not an option for incumbent banks (Accenture, 2016). As described earlier, the PSD2 regulations are only limited to payments accounts. Banks have vast amounts of data that is not covered by the PSD2 mandate, and this data can be delivered as premium products to (paying) customers. These products can, for example, be new or existing products in mortgages or pension. It is expected that the open API's is going to yield new combinations of services, functionality and innovative distribution channels (Accenture, 2016). Third parties can integrate banking functions, data and products into their own services, for example, payment initiation, personal finance management and credit card information (EBA, 2016).

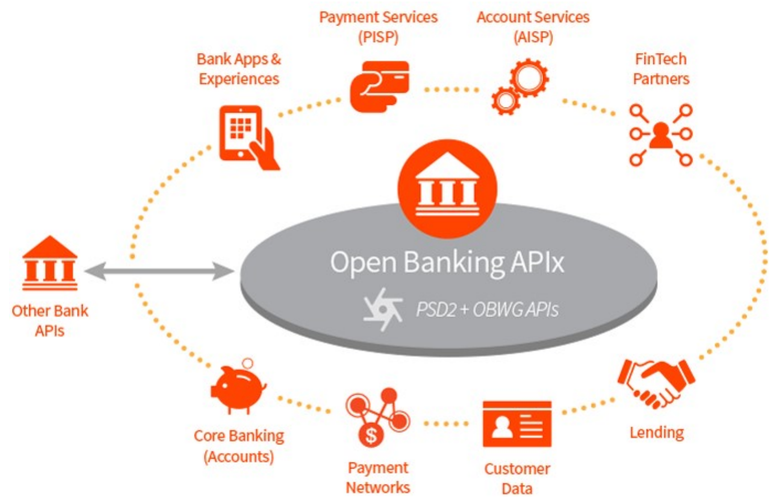

Figure 10: Open banking, Opinion Piece, 2017

There is no commonly agreed upon definition of open banking, and the definitions vary. Thus, some things all the definitions agree on. All the definitions state that open banking is a concept that allows banks to share customer data with third-party companies, through the use of APIs. Other extends the definition to define open banking as a **collaborative model**, where both the banks and the fin-techs need to collaborate in order to deliver enhanced capabilities to the marketplace (McKinsey 2017, Accenture 2016). Others see open banking as an emergent trend aimed at creating an API banking **ecosystem** with the help of Fintech companies (EVRY, 2017). The ecosystem means that by adding third-party services on top of internal capabilities and offerings, banks can situate themselves at the centre of an ecosystem where the bank's users can find services that are useful and engaging. This is achieved by combining internal capabilities with the services and digital experiences of third-parties through open APIs" (EVRY, 2017). Moreover, some believe that open banking means operating as a **platform** company, with a business model that connects people and processes with assets and technology infrastructure to manage internal and external interactions (Brear & Pascal, 2016). With Open Banking, banks will allow third-parties to "plug" into banks' data and infrastructure and to build applications. As the platform business, banks also manage the rules for how much third-parties can "play" and set the standards for acceptable business practices (EVRY, 2017).

The effects of open banking

Until recently there have been small incentives for competition and transparency in the banking industry, and again this has given banks a monopoly on customer's data. For most consumers, this has meant being loyal to one bank and instinctively entrusted their finances to the respective bank. Thus, there has been no reflection on whether the consumers are getting the best offers for their circumstances because of the lack of transparency in the market. This again has shaped the way people contemplate about banking. In a study conducted by Accenture, it was discovered that 53% of the consumers would never change their existing banking habits (Accenture, 2017). The traditional relationship bank might face difficulties time when the banks now have to open up as a result of the PSD2 directive (EVRY,2017). However, outlining the threats, the industry share views on worst-case scenarios not engaging in open banking. Such as the bank losing the customer facing position which in turn can lead to the banking being an infrastructure provider. Meaning that the bank will execute payments, maintain accounts and conduct fraud monitoring, in other words, "all the heavy lifting". This will not accumulate any revenue, and the bank will not benefit from cross-selling as the customer facing position is absent (McKinsey, 2018).

Moreover, new fintech's are getting ready to fight for these customers, and open banking will break down the barriers between consumer and their data. This will result in an improved customer position, the consumer is gaining more control over personal finances, and providing the customers more alternatives to choose from. Thus, competition will be better, and the customers will have an improved position (EVRY, 2016). The belief is that openness will lead to increased competition, due to higher innovation and ultimately better user experience. By opening up and inviting collaboration the banks can provide added value without significant additional IT spend, and they can better support different client segments (Johansen, 2018). Moreover, Open banking stresses a fundamental rethinking of the traditional banking business model, enabling banking to become even more customer-centric. In this development, regulators are seeking to drive increased competition and innovation by opening up customer banking data (Accenture, 2017).

Open banking in Nordea

Nordea embarked on their open banking initiative in August 2016. The initiative was created to exploit the possibilities emerging from the PSD2 and the changed business environment.
Open banking in Nordea is a new way of creating and capturing value in collaboration with external partners. As the figure below depicts, it is solely rooted in collaboration and co-creation. Thus, a large part of value-creation and capturing is going to occur in partnerships. Nordea sees it as essential to survive in the 'new' ecosystem of multiple new players. They aim to incorporate external partners into their core value propositions. For example, by co-creation, venture investing, a market-place and an app store. The aspect of open banking in Nordea that openness is created with enabling access to the underlying bank systems for external developers.

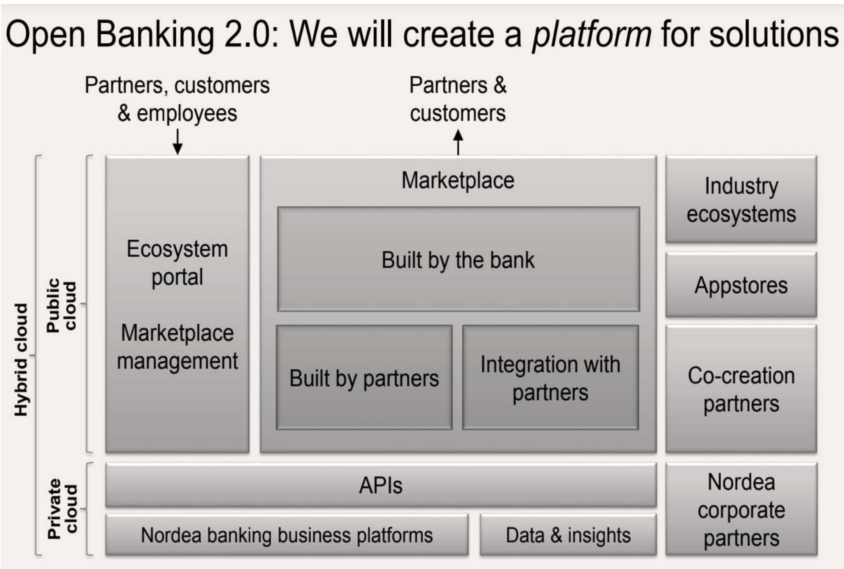

Figure 11: Open Banking 2.0, Nordea, KPMG seminar 2018

The open banking initiative is a designed as a technological platform, facilitating interactions for multiple actors, Nordea as the underlying provider, where customers and external partners can connect and operate. Thus, enabling a platform where collaboration and knowledge-sharing are crucial to producing new services and products. As the figure above depicts, most of the platform is open to the public. However, Nordea has a pilot program for co-creation of services that are listed as public but is found to be an "exclusive" event where only assessed and invited companies are included (Nordea, 2017c). Nordea is attempting to do this utilising what they explain as an "app store" where hundreds of fintech companies can market their products, which is also evident in the above figure.

Open Banking Department

As a strategic choice, Nordea has chosen to form a line department called open banking where there are three teams, namely open development, open banking partnerships and open banking community. All the three teams are present in the four Nordic countries (Denmark, Finland, Norway and Sweden) with several employees in each team. The Nordic teams are working tightly together and have a joint Scandinavian strategy for open banking. The open banking teams are working on both implementing the PSD2, but also beyond the PSD2 legislation. For example, they are working with partnerships, collaborations, innovation and business development across the bank.

Additionally, Nordea are trying to be present in the surrounding ecosystem for 'everyone' to know what Nordea's open banking project is about. Moreover, the open banking departments also work closely with group digital who is also a Nordic group represented in all the four Nordic countries. The group's primary focus is to ensure that Nordea is on the right path towards the digital future and to ensure that Nordea is prepared for all the digital transformations to come. Group digital do not have any operational responsibility, they are instead a unit that follows the trends, creating opportunities, identifies opportunities and does a 'matchmaking' of external partners on behalf of the bank and for the bank in various business areas. The group describes themselves as matchmakes between Nordea and external partners. Moreover, they are building the capabilities in the bank to partner with them. This can be everything from how these partnerships should be organised to how Nordea should leverage from the partnerships. Thus, they are influencing Nordea's absorptive capacity.

Current innovation initiatives at Nordea

In relation to the recent trends and focus on open banking, Nordea has initiated multiple innovative initiatives to foster creativity both internally and for collaboration purposes. The below table outlines these initiatives, these will be further evaluated in the analysis chapter of the thesis.

Internal innovation initiatives	
Nordea Runway	Nordea Runway is an **intrapreneur** program where Nordea invite the employees to form teams and come up with new ideas and suggestions for business opportunities. The teams with the best potential for new business opportunities will leave their daily work for three months to validate the idea. Thus, they will act like a start-up (Nordea, 2018). After those three months, the top 10 finalists will pitch their idea in from of Nordea's executive team who then chooses a winner.
Internal Platform	Nordea is currently enabling another initiative to nurture innovation and pursue more openness; they are building an internal platform for employees to participate in different innovation projects. This is going to be a platform where employees can submit ideas, give feedback and hopefully provide more transparency concerning innovation activities created in the bank. Nordea has an **innovation group** where all the employees can participate. The innovation group meets once every month where they discuss new ideas and suggestions across different departments. It is voluntarily to be a part of the group. Thus, all the employees who attend have a real interest in innovation which is thought to *"lead to involvement and exciting discussions across multiple departments and focus area in the bank."*
External innovation initiatives	
Open banking portal/ Ecosystem portal/ Sandbox	With the open banking portal, Nordea was the first Nordic bank to offer its pilots access to real customer data. Thus, regarding this, they are a first mover in the Nordic space of open banking. Nordea's open banking developer portal is a future-oriented platform that provides API's to third-party developers, customers and fintech's. Currently (2018) they have both AISP and PISP in the Sandbox. The competitors can utilise the same functions as other developers, namely test data, play with data and make dummy payments. One goal with the open banking platform is to develop innovations in a quicker phase and create more innovative products together with partners. Innopay (2018) classifies Nordea's open banking initiative to have a comprehensive experience regarding developer experience. However, Innopay regards the functional scope of the developer portal to be low.

Pilot program	The pilot program is an initiative related to the open banking portal, giving selected third-parties access to real customer data for creation of AIS and PIS services. Nordea was the first Nordic bank allowing "pilots" access to real customer data.
Accelerator	Nordea Accelerator program is a 12-week program where selected start-ups work alongside Nordea. The accelerator program is the largest of its kind in the Nordics. It is a program where FinTech's can apply to compete and then 13 companies are selected to compete in the program. During the 12 weeks, the aim is to further develop the ideas in collaboration. When the 12 weeks are gone, the start-ups will have the opportunity to present their ideas to hundreds of investors during a demo day in Helsinki. All the investments in the Accelerator program are made by VC Nestholma that is a partner of Nordea Accelerator.
Crowd-sourcing platform	Nordea is working on establishing a crowdsourcing platform. This platform would be a place where everyone who would like to could submit ideas, propositions and have discussions. The aim of the platform is to get access to new ideas, and contribution to solving existing problems for Nordea.
Innovation labs	In Scandinavia, Nordea is a member of different innovation labs in all the Scandinavian countries, like Copenhagen FintechLab and Stockholm FintechHub. The purpose of their involvement in the labs is to find new and existing fintech companies Nordea can collaborate with.
Summer of innovation	Summer of innovation is an initiative targeted to students. Nordea invites a chosen group of 5 students to create a pop-up innovation lab. In the innovation lab, the student as asked to solve six different cases during a period of six weeks. Each week the teams are tasked with researching, design and testing innovative solutions to existing customers. The aim of the rapid prototyping methodology and high customer involvement is to develop new innovative ideas that the groups can continue to develop
Fintech Roundtable	Fintech roundtable is an initiative Nordea has introduced where they bring both Nordea's management and 8-10 fintech's together. The aim of the meeting is to discuss trends and changes in the market and different structures of collaboration.

Table 2: Innovation initiatives at Nordea, own contribution 2018

Summary

The context aims to create a foundation for the analysis, elaborating on drivers in the industry as well for Nordea and especially ending up in the open banking initiative. The open banking era is rooted in collaboration and therefore closely linked to theories about open innovation the analysis will further analyse the open banking initiative in relation to theories about open innovation.

Framework

The framework creates an approach for evaluating the different position an incumbent bank can obtain in the era of open banking. It is purposely based on the context and the literature review. The framework creates three dimensions, ability to execute, competitive advantage and openness. The ability to execute is derived from the literature and absorptive capacity. The competitive advantage dimension is based on the context and literature review. The third dimension is based on openness as a summation of the two dimensions and the depicted openness regarding open innovation. The framework also describes the four different roles in detail.

The context and literature review has laid the foundation for the framework described below. There are four possible roles in the open banking era, and they emerge because of current competitive advantage and the ability to execute, and the degree of open innovation.

The ability to execute axis is based on the findings of absorptive capacity and organisational inertia (Cohen & Levindahl, 1990). Thus, high organisational inertia will lead to a low absorptive capacity and a low ability to execute. However, low organisational inertia will not inevitably lead to a high absorptive capacity due to internal processes of identification, integration and exploration. Moreover, absorptive capacity is one of the most essential factors in the open banking era, whether or not the bank is able to assimilate external knowledge and ideas is crucial when engaging in open innovation and partnerships.

The competitive advantage axis is chosen due to the importance of competitive advantages, and the sustained competitive advantage. A sustained competitive advantage provides a superior and favourable long-term position over competitors (Barney, 1991). The sustained competitive advantage is also an essential part of open innovation, where firms that utilise open innovation do it for the purpose of gaining or sustaining a competitive advantage. The competitive advantages relevant in the era of open banking is customer loyalty, size and position, open innovation and compliance. Moreover, the framework also based on the degree of openness and can thus be related to the degree of open innovation the banks undertake (Chesbrough, 2003). Open innovation is a way for the company to differentiate themselves in the open banking era. Open innovation theory is grounded in collaboration and 'openness', what can be seen in the banking industry today. Open banking is a collaborative model where the belief is that the incumbent banks need to partner with external partners to survive. Additionally, the banks need to establish new means to innovation in order to compete against the "challenger banks" and new competitors entering the market. In other words, the incumbent bank will need to open up and engage in open innovation in the open banking era.

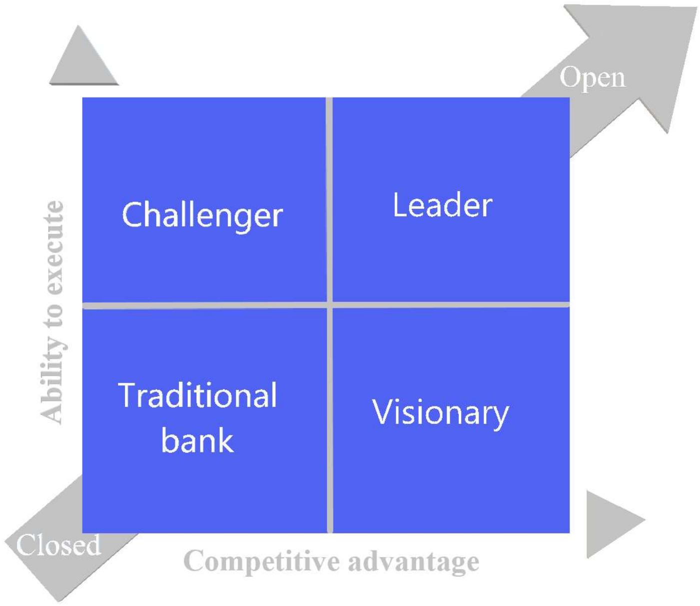

Figure 12: Open banking framework, own contribution 2018

Traditional bank

The traditional bank has been described in the context and is typically developing all products and services in-house and distributing these with its own distributing channels. This is typically closed innovation where the banks have only done incremental changes to their products and offerings only when the customers demand it. Thus, there has been little if not none radical innovation from the traditional bank (Chesbrough, 2003). The traditional bank is typically risk-averse and has few, if non-external partners, and in their innovation search, they would instead exploit their internal expertise and knowledge bases, i.e., local search (Katila & Ahuja, 2004). Moreover, if they were to search for partners, they would search within their already established relationships with new partners, hence no distant search.

Moreover, if they would like to partner with an external partner, it is beloved that the employees would be contained with the "not invented here" virus as the traditional bank does not have an innovation culture (Chesbrough, 2006; Gassmann & Enkel, 200). Moreover, it would be difficult for this type of bank to appropriate from external ideas as they do not have the absorptive capacity to sort and find the best ideas, and they are also not able to integrate these external ideas (Cohen & Levindahl, 1990).

Thus, the bank is controlling the whole value chain. This type of bank believes that size and muscles matter, regarding millions of customers and physical branches. Moreover, this bank is not showing openness more than the bare minimum which is opening API's to licensed third-parties, these are prescribed to have little functionality and thus offering customers limited flexibility regarding service offerings. In other words, not looking outside the organisation for external innovation or enhanced capabilities They see their most significant asset as being customer loyalty. This traditional bank believes that their customer's loyalty is strong and that this will be their sustained competitive advantage (Barney, 1991). Thus, they (may not) be following the market trends occurring now. Furthermore, the banks have completive advantages in relation to compliance, size and position.

It is expected that this bank will not survive due to changing customer needs and that these customers will instead use a third-party solution for account information services and integrate payment system provider API's thus, the bank will lose its customer facing position and become an infrastructure provider.

Challenger

New types of banks have spun out of changing market-and customer conditions. Thus, changing how the consumer wishes to communicate and consume banking services. The term "challenger banks" covers a variety of entities with different target business models and target markets. Multiple papers have tried to categorise the different types, Burnmark (2016) mentions four different types of challenger banks, like Pseudo, Large, Small and Real while KPMG (2016) uses three different categories to describe the challenger banks: Larger, small and digitally-focused challengers. This thesis will combine these types under the umbrella of "digital challenger banks". The digital bank is built with a vision of reaching their clients using solitary digital augmentation such as through online web-pages or mobile apps. Some of these banks are often close to the traditional bank's business model and value-chain however, these banks tend to be more consumer-driven.

The challenger is either a new entity in an old bank or a new challenger bank. The challenger banks are defined shortly in the context and are banks that are new to the market. They are defined by the willingness to succeed in the industry, but also by little experience in the emerging business environment. These are pursuing open innovation and follow customer and market trends closely to offer personalised and new banking solutions to the customer (Chesbrough, 2004). On the other hand, they do not have a large (loyal) customer base as their traditional bank, and thus their biggest challenge will be to attract new customers. Moreover, the challenger bank has a competitive advantage in relation to innovation and customer loyalty (Barney,1991).

The challenger does not have inherited values and habits that limit their ability to search for external partners. They have the absorptive capacity needed to gain value in integrating and exploiting knowledge from external partners (Cohen&Levindal,1990). Moreover, they are having an open innovation culture and are willing to take risks (Chesbrough, 2009; Gassman & Enkel, 2004; Kratzer et al. 2017). Some of the challenger banks are expected to move over to the leader facing position once getting more experience in the industry and some are expected to disappear when failing in executing beneficial innovations or attracting enough customers.

Visionary

A visionary is often a traditional bank that has succeeded in integrating external resources to some extent but is still struggling with the ability to execute due to bureaucracy or other internal obstacles like the "not invented here virus" (Chesbrough, 2003).

The bank may have some difficulties with absorptive capacity, regarding searching for new ideas and might not be willing to go broad enough (Laursen & Salter, 2005). Alternatively, having issues with managing to integrate and exploit external knowledge successfully (Cohen & Levindal, 1990). The inherent values and beliefs are affecting the degree of openness, due to a fear of losing customers or internal reluctance to include too many external competencies (Chesbrough, 2003).
The fear of becoming an infrastructure provider is forcing the bank to 'open up' but is limited by established culture and values (Chesbrough, 2004; Kratzeret al., 2017). It takes time, as adapting and understating the necessity for change is a rather time-consuming and complicated process in this Bank as old habits and values are rooted in the company (Henderson & Clark, 1990)

Moreover, the bank has competitive advantages regarding size and "muscles", and compliance. The potential of succeeding is high if internal resistance to openness is overcome. However, none of these competitive advantages is sustained competitive advantages (Barney, 1991)

The leader

The leading position has mastered the skill of openness. The leader is an experienced player in the environment and ability to execute good ideas (Cohen & Levindal, 1990; Chesbrough, 2003). The bank is mostly utilising external resources for development and leveraging external API's to its advantage where useful. This type of bank has a smooth organisational structure with little obstacles that enables the bank to be quick in the market when sought advantageous (Henderson & Clark 1990). Partnering with external resources is also easy since the bank is a leader the banks become preferred partners for fintech's and therefore incur low search costs. Regarding the search for external partners it is also easier to limit the search because they are aware of customer expectations and trends, thus know to some extent what they are searching for in the external environment. Moreover, when searching for a new partner, they use both local and distant search (Poetz & Prugl 2010; Katila & Ahuja, 2002).

Furthermore, this bank is a preferred partner to work with because of its superior innovation culture. Their internal innovation culture has a positive impact on external partners. The leader also has a high absorption capacity. There is no reluctance among the employees to innovation due to a good innovation culture (Chesbrough, 2004; Gassman & Enkel, 2004; Kratzer et al., 2017).The leader also has a sustained competitive advantage in relation to open innovation, trust and size and position (Barney, 1991). This is providing the bank with a superior long-term position over their competitors.

Analysis

The analysis chapter will utilise both the findings in the literature review, as well as findings in the context for analysing the aspect of open innovation in Nordea. The analysis will be conducted in the identical matter as the literature review and the empirical findings, having a broad scope that is narrowing down. The analysis will first answer the given sub-research questions in ascending order. In addition to the analysis, the three sub-sections will offer a short introduction. Moreover, the two first research questions will finalise with a short re-cap to create a better understanding and to generate a clear bridging paragraph to the next question, to underline the necessity of the narrowing scope of the sub-research questions.

Introduction

Given the scarcity of research conducted on the concept of open innovation in the financial sector, we aim to investigate it further. We will look at how Nordea can utilise open innovation in order to sustain a competitive advantage in the changing business environment. Furthermore, we will look at which capabilities they need to build in order to achieve this, and hindrances of value creation and capturing with an emphasis on open innovation.

As a response to PSD2 and Open Banking the banks can take two different approaches:

1. They can comply at a minimum, and thus not transform their business model
2. Or they can take a proactive response.

We already know from the secondary sources that Nordea has chosen a proactive response to open banking. The analysis will emphasise Nordea's current position concerning innovation initiatives, business partners and external innovation initiatives.

Positioning in the framework

Before open banking, it was simple to place Nordea's in the framework as a traditional bank. However, after establishing the open banking initiative, there have been numerous changes in Nordea's value creation and capturing strategies. Multiple innovation initiatives have been introduced to foster innovation and collaboration. Therefore, to determine where to place Nordea on the framework presented, we need to evaluate Nordea's innovation activities, innovation culture, innovation strategy and obstacles to innovation. Moreover, we need to evaluate Nordea's competitive advantages and how easy it is for Nordea to enforce collaboration and co-creation across the organisation, their absorptive capacity.

Sub-research question one

What are the incumbent's banks current competitive advantages, and can the incumbent bank utilise these in the open banking era?

Sustainable competitive advantages are providing a superior and favourable long-term position over competitors. Thus, a sustained competitive advantage is important to succeed, and crucial for Nordea to become a leading player, and remain competitive in the era of open banking. To investigate Nordea's current competitive advantage is we first analyse them based on the findings in the context and interviews. For the analysis, the VRIN model is used. which suggests that those resources that are valuable, rare, imperfectly imitable, and non-substitutable, can be sources of a sustained competitive advantage. This section will analyse the key resources that have a potential to generate such advantage for the firm.

Loyal trusting customers

Firstly, Nordea believes that loyal and trusting customers are gaining them a competitive advantage, with 10 million personal banking customers and 700 thousand corporate customers it is evident that maintaining this large customer base is essential to not lose their customer facing position. Many of the interviewees explain that trust is an essential aspect of operating a bank. And in this context, it is crucial to disclose that Nordea is scoring extraordinarily low on customer satisfaction, related to its peers, being, for example, Danske Bank and DnB (EPSI, 2016). Also, the big technology companies are experience riced levels of trust, closing in on the banks. According to Bain & Company (2017), some of the large technology companies have the same level of trust as banks. Moreover, customer behaviour is also changing and especially millennials are prone to utilize services from large technology companies. Thus, an increasing number of consumers are willing to devour financial services from technology companies instead. However, it could be argued that fintech's do not have the same level of trust as the large technology companies due to recognition and familiarity.

However, in conclusion, it is believed that Nordea's customers would rather choose a competitor in the open banking era based on Nordea's meagre score on customer satisfaction. Nordea scores low in all the Nordic countries, with a low -8 in Finland and the highest in Norway with a score of -1,6, for comparison, Danske bank score in the range of -5,4 to 6,4, where the scale is bound between -10 and 15. Furthermore, the report state that: "Overall, we see that larger banks tend to underperform relative to the competition in their home markets, and are mainly found in the lower end of the scale." (EPSI, 2016).

Thus, it can be concluded that Nordea does not have a competitive advantage in relation to loyal and trusting customers. Since argued that Nordea does not have a competitive advantage in relation to loyal trusting customers there is no need to analyse if they have a sustained competitive advantage (Barney, 1991). You need to have a competitive advantage to be able to have a sustained competitive advantage.

Size and position

Nordea has the largest customer base in the Nordic with their 10 million customers. Moreover, Nordea is also present in all the four Nordic countries. This is of enormous **value** to the organisation. Barney (1991) argues that a competitive advantage is valuable if it enables a firm to implement strategies for increasing effectiveness and efficiency, while also exploit opportunities and neutralizing threats (1991). With Nordea's 10 million customers they have the largest customer base in the Nordic, which is providing them with a significant portion of valuable customer data. Nordea's position in the Nordic banking industry could enhance the possibility of Nordea appearing as the most lucrative banking partner in relation to PSD2. This is because the licensed third-parties are not restricted to one country but is available for 'passporting'. Thus, the fintech is able to offer services across country lines with only one license. Also, this is seen as an advantage due to customer preferences, the bank has to be a local and personal (EPSI, 2017).

Barney (1991) defines rare resources as those that are not possessed by a large number of firms. Having a rare resource which enables a firm to improve its performance leads to competitive advantage (Barney, 1991). Thus, Nordea's size and position are also **rare.** Nordea is the bank with the best coverage in the Nordic countries, thus they see this as a tremendous competitive advantage to attract a larger base of potential partners. For comparison, the largest bank in Norway, DnB do not have a significant presence in any other Nordic countries than Norway. Even though Danske bank is also present in the other Nordic countries like Nordea, they have a smaller customer base in total.

Considering how much effort, time and cost companies would need to build the same position, thus, it can also be argued that it is hard to **imitate,** at least for the smaller companies (FinTech's) in the industry. It will take them a very long time to build the same customer base as Nordea. Barney (1991) argues that a resource is imperfectly imitable when the value of the particular resource would be governed by only one firm and others can't duplicate the resource for its use. However, it can be **substitutable** because another large bank like Danske bank who is also present in all the Nordic countries can build their own customer base covering the same number of customers, and same scope. This could help them exploit the same value-creating strategies as Nordea. Additionally, other banks and FinTech's present in the Nordic countries can create strategies to appeal to customers who are no longer loyal to Nordea**.** Barney (1991) argues that non-substitutable means that the resources can't be substituted by any other available resources.

Compliance

Additionally, most of the interviews also believe that Nordea has a competitive advantage in relation to compliance. This is **valuable** as Nordea is going to utilize the regulatory aspect to their advantage, seeing that the 'new' banking industry also contains players with limited experience on the regulatory setting in the banking industry. Nordea is thus going to dispense its compliance capabilities to fintech's and start-ups partners, and the relationship will utilise each other with complementary assets. As described, the traditional bank has a large customer base, lots of historical data, great capabilities with compliance, thus a traditional bank has many competitive strengths regarding offering bank services. This makes the bank an attractive partner to fintech's and other's looking for a collaborative partnership (Cognizant, 2017). Moreover, it is also **rare,** not many other banks have the same experience with compliance as Nordea. as years of manoeuvring the regulatory environment and implementing different regulations have provided Nordea with sufficient experience.PSD2 is only one of many regulations Nordea is constrained by. It is also hard to **imitate** as they have gained this thru years of experience, and thus hard to imitate. However, it can be **substitutable,** as other banks and fintech's could also be experienced in relation to compliance.

Preferred partner of choice

Nordea's goal for collaboration is to be the preferred company for fintech's and believe that this is one of their competitive advantages. This is **valuable** as Nordea will be able to choose and pick the best partners for collaboration. When interviewing the managers in charge of finding suitable partners, it is apparent that multiple fintech's are interested in collaborating with Nordea. A manager in the open banking team stated the following during an interview, asking if he attended meetings with fintech's:

"I have an endless pool of interested fintech's outside my door."

Moreover, it is **rare** since Nordea's competitors are not that outspoken and present in the growing financial innovation ecosystem as Nordea. Nordea is outspoken in the growing financial innovation ecosystem and is present both regarding being active and transparent. Nordea provides transparency by revealing and publishing their roadmap to open banking in the developer portal. The roadmap contains information about progress, product launches and when expected deliveries are happening. Thus, opening for the community to participate in Nordea's road to open banking. In the open banking platform, developers can also give feedback on existing API's and product launches from the bank. Nordea values this channel of communication as an essential tool for being the partner of choice. Moreover, Nordea appreciates, recognise and incorporate this knowledge into further review and product developments.

Nordea see themselves as a frontrunner in this space and see this position as an enabler for being the partner of choice

"We do see our self as the frontrunner in this space, and we will do our very best to maintain that position, we see that the position is an enabler for attracting the right partners, and this whole goal of being the partner of choice."

Moreover, it's hard to **imitate** since these relationships are built up over time. However, its **substitutable,** other incumbent banks can also be the preferred partner of choice. Also, since the conducted study is a single case study we have not questioned fintech's on their relationship or attitude towards Nordea, but it is plausible to state that Nordea has achieved being relevant and managing to attract interest from (local) fintech companies. The position of being the preferred partner choice might yield relation capabilities, that building and maintaining good relationships can create a competitive advantage (Gasman & Enkel, 2004).

Summary

Although Nordea does have three substantial competitive advantages, that is, its size and position, compliance and preferred partner of choice, these are not sources of sustained competitive advantage as they do not exhibit the characteristic of non-substitutability. Thus, the organisation cannot utilise these competitive advantages to compete in a market with declining customer loyalty, changing customer demands and strong competitive pressure. Thus, Nordea regards innovation and collaboration with external partners as the way forward in order to become a leading player in the open banking era. This is in line with open innovation theory which argues that firms should use open innovation to gain or sustain a competitive advantage (Chesbrough, 2003). Moreover, the most essential part of open innovation is the facilitation of collaboration with external partners (ibid).

Sub-research question two

How is the incumbent bank utilising open innovation in the open banking era?

Nordea aspires to become a leading player in the open banking era and believes that open innovation is central to achieve this objective. Hence, this section aims at determining Nordea's innovation efforts and also the sources of innovation Nordea utilise currently. Moreover, the section intends to analyse Nordea's innovation culture, and strategy as this also plays into the organisation's ability to extend its search and obtain innovation outputs.

Nordea's open banking approach has established them as one of the leading banks in terms of technological innovation, and in December 2017 Nordea won the banking technology award for the Top Digital Innovation (Nordea, 2017d). The banking technology award recognises innovation and excellence within banks and financial institutions.

This view is supported by their managers who states that Nordea is a first mover in the Nordic open banking era. Nordea started their open banking project in 2016 and have held various workshops with the different units of the bank (production unit, business unit and so on) to inform the employees what open banking will mean for Nordea, both internally and externally.

When Nordea is stating that their goal is to be a first mover, this could be positive since it shows involvement and a proactive approach, however being a first mover may not always be an advantage (Golder & Tellis, 1993). As found in the literature review, the research on whether it is better to be a first mover, early follower or late entrant yields conflicting conclusions. When Nordea is making being a first mover on open innovation a strategic choice they could find implementing hard, on the contrary, it could result in them becoming a leading player in the open banking era (Lindegaard, 2010)

"*We in Nordea believes that we are first movers, we will not have our Kodak moment.*"

Thus, explaining that Nordea is taking the proactive approach and not failing in following market trends and development of new technology. Aligned with this view Nordea has introduced multiple innovation activities, both internally and externally.

Nordea's innovation strategy

According to the interviewees, Nordea does not have a specific innovation strategy. This could be problematic when engaging in open innovation, as Pisano (2015) states, the problem with innovation improvement efforts is rooted in the lack of an innovation strategy. "Good strategies promote alignment among diverse groups within an organisation, clarifying objectives and priorities and help focus efforts around them. Innovation is something that has to come from the top and align all the employees". To utilise more open innovation, it is essential that the employees are known with how the organisation is going to do this and how they are going to achieve this. As mentioned above Nordea's managers have told all the employees what the goal of Nordea's open banking approach is, and how this is going to affect the employees working at Nordea. This is aligned with the findings of the literature review that management involvement is the most important driver for innovation in the financial sector (Chesbrough, 2009).

Also, Nordea might have an innovation strategy without clearly specifying that it is an innovation strategy. Nordea has changed their focus much more towards innovation, partnering, collaboration and changing their culture. In that sense, they have an innovation strategy because "Ultimately where you spend your money, time and effort is your strategy regardless of what you say." (Pisano, 2015), and Nordea has invested both time and resources into more innovation activities, both internal and external.

However, in sum it can be argued that Nordea does not have a clear innovation strategy. Without an innovation strategy, different parts of an organisation can easily wind up pursuing conflicting priorities, even if there is a clear business strategy (Pisano, 2015). Without a strategy to integrate and align the different perspective around common priorities from all the departments, this might lead to departments working against each other (Pisano, 2015). In order for Nordea to succeed with open innovation it is crucial to have an efficient, fast and productive open innovation strategy (Schueffel & Vanda, 2015).

Innovation culture

In order to be successful with open innovation, cultural changes need to take place, and this is a crucial part of opening up and engage with external partners (Chesbrough 2011; Schilling, 2017). The interviewers at Nordea states that there is a change in the culture and a different mindset within the organisation as a result of open banking. However, the degree of openness towards change varies within the different departments, and with the employees. Even though some employees are reluctant to change, Nordea is stating that it is not the dominant voice of the organisation.

Moreover, the employees that are resting the changes are either those who fear for their job or those who don’t see the necessity to change. Adapting and understanding the necessity for change is a rather time consuming and complicated process in large organisations where old habits and values are rooted in the company (Henderson & Clark, 1990). Moreover, banks are known to be very risk-averse. Thus, it can take time to change the mindset and become more open to external partners. Therefore, it is important to put continuous pressure on the organisational culture, to pushing eh employees mindsets away from “the not invented here” mindset (Chesbrough, 2003).

To create an (open) innovation culture, Nordea has introduced several internal innovation initiatives. This is an essential part of their potential success, as research has shown that the companies who are able to create a thriving innovation culture will be more successful when engaging with external partners (Kratzer et al., 2017). Moreover, having several internal innovation activities will help Nordea avoid the “not invented here syndrome” and, thus be more successful when collaborating with external partners (Chesbrough, 2006). This will also help to avoid the employees feeling like their work is less important when engaging with a large poll of external partners. If the employees feel like their internal innovation work is not as important as the focus on external innovation the effectiveness of internal innovation will decline (Fu, 2012). This is something the employees have noticed.

“*The openness towards using external partners has changed”*

The interviewers also pointed out creating an innovation culture is endeavoured across the whole organisation and that everyone from top managers to the employees is involved in this. When involving the entire organisation, they are more likely to be successful as this creates a common feeling of “community” (Kratzer et al., 2017). Also, when the entire organisation is involved in different innovation activities, it is found that the organisations are more likely to be successful when collaborating with external partners (Kratzer et al., 2017).

Hence, Nordea’s goal is to transform towards a more open innovation culture, but it will take time. Nordea’s old culture is well rooted in some of the employees, and they may not see the need to change. However, according to the employees, Nordea is on their way to achieving an open innovation culture

“..but it will definitely take time.”

Innovation processes

Internal Processes

Internal initiatives

When the interviewees were asked the about internal processes for innovation, they stated that Nordea Runway was the most crucial new initiative. Nordea wishes and hopes that the proceeds from Nordea Runway will result in "something bigger", thus evolve into new business opportunities and innovation (Sandulli & Chesbrough, 2009). Also, with the program, they intend to engage and encourage their employees to be involved in the development of the bank. At best this could lead to radical innovation or at least incremental innovation. As most radical innovation comes from small companies, and not the industry leader (Henderson & Clark, 1990). Thus, it is more likely that the initiative would result in incremental innovation. The employees working at Nordea have expert knowledge about Nordea and their products, and therefore they could be better suited to discover or invent new incremental improvements to existing products and services, compared to outsiders who have no information about Nordea internal processes (Henderson & Clark, 1990). Also, when utilising employee knowledge located in-house, the innovation process could be less costly (Chesbrough 2006). On the other hand, when talking about the Nordea Runway initiative, an employee stated that

"forcing innovation does not really work. You cannot put together this innovation club and then all of a sudden, we are innovative, it needs to be a change of mindset. But it will help give ownership to the idea, and that again will contribute to more of an innovation culture."

Thus, the transformation from closed to open innovation requires an open innovation attitude among both the managers and employees (Fasnach, 2009). As a step towards becoming more open, Nordea realised that they need to create 'room and time' where they free the employees from their daily tasks so that they can concentrate on innovation. The interviewers state that it has been hard to combine new and innovative thoughts with the work of everyday life for an employee or a department at Nordea. Nordea has previously not combined the two and stated that *"you either do this, or you do that",* and there has been no room for the combination of both earlier.

Furthermore, as described in the context, Nordea also have an innovation group where all the employees that would like to can participate. Nordea has an internal platform for communication, which can be seen as both an initiative to foster collaboration and innovation, and also as an initiative to reduce the organisational problems in relation to structure and organisational inertia. All these new initiatives are in line with Chesbrough in Fasnach (2009) views that the most crucial internal sources of knowledge when innovation in the financial sector are employees and new development teams.

However, if Nordea focuses their innovation search too much internally, it could mean they miss a large number of opportunities that lie outside the focus of the firm's business or miss potential combination possibilities with external technologies (Chesbrough, 2003). In the case of Nordea that would mean that the company is likely to miss crucial knowledge elements that could contribute to innovation, which, in turn, could result in value creation and market share gains, thus helping them become a leader in the open banking era. As found in the context, Nordea is engaged in a very competitive market, and their competitors are gaining more trust from the consumer.

Regulation effects on internal processes

Nordea explains that new legislation that affects the organisation requires employees to channel its focus on what is required by law. Thus, limiting the possibilities of 'think outside the box' and create innovative solutions. Furthermore, some of the employees pointed to regulation being a burden in the implementing phase due to little space for concentration on innovation as the employees must adhere the deadlines.

"Right now, things have been very focused on delivering the required by the law. So, the law right now has kind of dictated what we develop, and that is also a bit limiting".

However, the fact that Nordea operates in a heavily regulated sector should not deter them from implementing an open innovation strategy as other heavily regulated sectors have successfully implemented an open innovation strategy (Schueffel & Vanda, 2015)

Nordea also states that regulation previously has affected the rate of innovation in the bank and that legislation has stifled innovation. Moreover, the amount of legislation also stifled the possibilities to innovate due to a constant focus on adapting and complying with the regulatory environment. Thus, the banks have been able to contain customer data and utilise it as an asset. Regulations are still going to affect how innovation will occur since the banking industry have a legislative environment to comply with. Nordea is, however, going to utilise the regulatory aspect to their advantage, seeing that the 'new' banking industry also contains players with limited experience on the regulatory setting in the banking industry. Nordea is thus going to dispense its compliance capabilities to fintech's and start-ups partners, and the relationship will utilise each other with complementary assets.

Underlying core system for internal processes

Nordea's road to becoming a truly digital bank' is also rooted in the changing the underlying core banking systems (CBS) (Nordea, 2017e). The rollout is expected to take up to five years and will be staggered on a country by country basis. This is seen as a vital step towards becoming more innovative, with a new and better IT system it will be easier to build new and better solutions for the customers. Nordea thinks that their CBS will deliver four strategic capabilities. It will provide **agility,** and thus build the engine for faster reaction to changing customer needs. Moreover, it will contribute to **resilience** as the system will enable Nordea to respond to regulatory requirements quickly.

With a new and better system, external third parties easily can design and create new user faces on top of the new core-systems. Thus, leaving Nordea to focus on its core capabilities. Moreover, introducing the core banking platform could be viewed a strategy to face and compete against the digital-only challenger banks. In sum, the CBP is aiming at creating value for product development, and thus enhance innovation. It could also contribute to a competitive advantage as no other banks have the same system. Lastly, it should bring elevated product capabilities and be able to create new services and products more rapidly.

Summary

Thus, to become a leading player in the open banking era, it is crucial to successfully implement open innovation. According to Katila & Ahuja (2002), extending the firms search scope will enrich their knowledge pool through the addition of a new distinctive element. Additionally, if innovation is intended to help Nordea gain a competitive advantage, it is crucial to shift their balance between internal and external sources in favour of the latter (Chesbrough,2006). By doing so, the knowledge pool is extended, and thus, more variations can be used to solve problems or innovate. Nevertheless, these arguments do not suggest dropping internally focused R&D and replacing it by externally focused R&D. The two approaches are seen as complementary as the internally focused R&D helps develop absorptive capacity (Sandulli & Chesbrough, 2009).

External processes

Outside-in processes

When using external sources of innovation Nordea is engaged in Outside-in/inbound open innovation. Nordea is engaged in customer involvement, employee involvement and external participation. As found in the literature review it is argued that inbound open innovation is recognised as the primary contributor to the firm's competitive advantage gained by utilizing an open innovation approach, as the company does not have to rely solely on their own R&D (Chesbrough & Crowther, 2006) Moreover, "firms that are more open to external sources are more likely to have a higher level of innovation performance because by using external sources they get access to capabilities and resources that they don't have in-house" (Laursen & Salter, 2006, p.146). Bill Joy, the co-founder of Sun Microsystem, was famous for saying *"Not all smart people work for you",* and the employees at Nordea also support this view. An interviewee stated that

"We have 30 thousand smart employees, but there are even more smart people out there".

Another stated that:

"Some of the most creative people out there with the best innovative ideas do not really work in a bank".
This is also aligned with Chesbrough's (2003) view on open innovation, one of the steps towards becoming more open is to realise that "not all the smart people work for you". Therefore, Nordea has introduced several external programs for innovation in relation to open banking and thus attempting to attract talent and expertise from the outside on a much larger scale then they have previously done.
Nordea has partnerships with different **innovation labs** such as fintech hubs and incubators in Oslo, Stockholm, Helsinki and Copenhagen. This is a result of Nordea realising that they cannot develop the right technology and services to their customer quickly enough without outside impact. It is evident that this is an essential tool for Nordea's strategic direction in the open banking era. These teams have understood that

"we are not the only one who has a great idea."

Thus, Nordea seeks external knowledge to reach a higher number of successful innovations.

"*We realised that we don't have to do this alone, there is an emerging financial service ecosystem we can tap into."*

When being part of an innovation lab, it contributes to a broad range of possible external partners. It also helps to open their eyes to new technologies and partners, which they might not have gotten access to if it were not for their involvement in the different labs. Collaboration with competitors and customers provides Nordea with greater access to markets, which may lead to increased considerable commercial success of new products and enhance innovation efficiency through economies of scale (Gassman & Enkel, 2004).

Nordea is not sure what these sorts of partnerships will contribute to, but they see themselves as part of a new dynamic that will breathe fresh life into fixed ideas that are existing about banking. Also, the relationship with other companies and complementary companies is a significant asset and necessary with an open innovation strategy (Fu, 2012)

Moreover, Nordea has started another initiative, **Fintech Roundtable**, and it is an initiative where Nordea meet and talk to fintech's about new ideas and possible partnerships. The aim of the meeting is to discuss trends in the market and different structures of collaboration. When discussing the structures of collaborations, the intent is to gain knowledge about how Nordea can better extract knowledge from the collaboration, thus the absorptive capacity. This can be seen as **Acquiring** through informal and formal relationships (Dahlander & Gann, 2010). Nordea gains access to resources and knowledge of possible partners, however the drawback of this type of relationships is that it is difficult to maintain a large number of ties with different partners (Dahlander & Gann, 2010). Moreover, Nordea also invests in start-ups and fintech's with a venture fund, as a way of incorporating external knowledge, which is another form of acquiring.

Furthermore, another outside-in process Nordea is engaged in is ***working closely with students.*** Collaborating with students is a helpful for innovation, as the students often have a different and fresh mindset. The students often contribute with fresh out of the box thinking and have knowledge that is outside Nordea's common field of expertise, and thus they can contribute with broad knowledge (Chesbrough, 2006). Moreover, they can bring in capabilities that a firm lack (Fu, 2012).
When working closely with students this can be seen as **sourcing (**Dahlander & Gann, 2010). Thus, the benefits are non-pecuniary. However, Nordea gets access to a wide array of ideas and knowledge which could lead to discovering radical new solutions to problems (Dahlander & Gann, 2010). The difficulty can be choosing and combining between many good alternatives. Some of these students could also be customers of Nordea and then it is also co-creation with the customer. There are several benefits of

including customers in the innovation process, this can contribute to the firm gaining a richer understanding of what the customer really wants (Chesbrough, 2011)

As part of Nordea's strategy on "customer first," they are currently building a **crowdsourcing platform.** A manager states that the crowdsourcing platform would be a good tool to

"*get closer to their customer and their customer's ideas".*

Several studies has shown that crowdsourcing is a tool that could contribute to increased innovation (Poetz & Schreier 2012; Afhua & Tucci, 2012), and that the best ideas overall tend to be more heavily concentrated among user compared with a firm professional. This is also aligned with Nordea's realisation that the people with the most creative ideas probably don't work in a bank. Moreover, when the getting closer to their consumers Nordea can also obtain tacit knowledge from them. Tacit knowledge is information obtained from the customers' experience, e.g. about buying and consuming products (Chesbrough, 2011). According to Chesbrough (2011), the asymmetric distribution of tacit knowledge poses an obstacle to communication between customer and supplier. Thus, firms that can overcome this difficulty have an advantage, as they become more able to realise its customers' core needs with regards to their experiences. If the customers contribute with suggestions and idea for solutions this tacit knowledge could be minimised.

Summary

Nordea is engaged in multiple different types of outside-in processes, utilising external knowledge for value creation and capturing. Nordea is involved in both sourcing and acquiring.

Coupled processes

When using both internal and external developers, this can be recognised as coupled innovation, where the firms work together to develop new knowledge and solutions. When innovating together and maintaining a good relationship with their partners, Nordea could gain a competitive advantage (Gassman & Enkel, 2004). The interviewees stated that there is no formal way of sharing the promising ideas that Nordea, do not use. Thus, the ideas that deemed invaluable to Nordea could be promising for other companies, and Nordea could fail to benefit from on revenue following this approach. Hence, Nordea has no stand-alone initiatives for inside-out innovation.

The most comprehensive external open innovation initiative is that Nordea has introduced **the open banking developer portal**. Nordea built the platform with both external and internal developers in the interest of fostering innovation within the organisation and establish more collaboration with third parties, utilising inside-out and outside-in processes simultaneously. When building the platform with both internal and external developers, Nordea could get a better result as outside partners may be better equipped to commercialise inventions to the mutual interests of both organisations. However, a drawback of developing together is over-commitment to own product and technologies which makes it hard (Dahlander & Gann, 2010).

Moreover, opening the Sandbox to everyone was a strategic choice that Nordea took. The intention of open banking is openness in the financial sector. Nordea state that the open banking initiative is insignificant unless all interested parties are granted access. Therefore, it was a strategic choice to give access to their competitors, and for example, they have given access to DNB and Danske Bank. This is in line with open innovation theory, which states that in totally open innovation modes everyone can participate, even the competitor (Pisano, 2016). On the other hand, not "everyone" can participate as you need the skills and knowledge to utilize any value from the developer portal.

Another coupled innovation process is **Nordea's Accelerator** program, where they share engagement through an innovation competition with the venture capital Nestholma. Moreover, Nordea states that the idea behind the program is to learn together and find new business and partnership opportunities through collaboration. Thus, the process is aimed at benefit both parties with an increased competitive advantage while also sharing the risks (Gassman & Enkel, 2004). In sum, this makes innovation less costly, less risky and faster, which is benefiting both the firms and also the consumers (Chesbrough, 2011). Moreover, Nordea hopes that the program can help to identify opportunities for both incremental and radical business innovation, while also keeping them updated on the fin-techs innovations. The goal of the initiative is to provide additional value to its products and increase interaction between customers and the company enabling knowledge absorption.

Summary

To answer the second question, we analysed Nordea's different innovation initiatives and innovation processes. In sum, all the initiatives are helping Nordea becoming more open since the best way for open innovation is to become an integrator of both external and internal knowledge (Chesbrough, 2003). Moreover, it was found that Nordea are engaged in coupled and outside in innovation processes, but not in inside out. Since Nordea mostly are engaged in outside in innovation, the most critical factor is whether or not they are able to assimilate external knowledge and ideas. Thus, Nordea's absorptive capacity and organisational inertia will be evaluated in the next section.

Sub-research question three

How and why are the incumbent banks experiencing obstacles for open innovation?

It is relevant to consider Nordea's absorptive capacity, that is whether they are able to assimilate external knowledge and ideas, as this is crucial in order to succeed with open innovation. Moreover, scholars found that to increase innovation output, search breadth and depth must be extended, thus in this section, we will also investigate Nordea's search strategy.

Organisational inertia

This section of organisational inertia will be analysed using the theory based on Foss et al. (2011), thus how the firm's absorptive capacity is affected by internal organisation practices. Especially by emphasising how organisational practices such as greater decision rights delegation, more intensive internal communication, incentivising knowledge acquisition and knowledge sharing amongst employees can achieve a higher "absorptive capacity".

Nordea is, as noted earlier, a large and established organisation. Values and habits are inherited in the organisation and hard to alter (Henderson & Clark, 1990). All the interview objects pointed to organisational inertia when asked to outline the most significant issues when sourcing knowledge from fintech's and start-ups. Fintech's are deemed agile and lose, while Nordea is layered with structures in silos and bureaucracy

"Nordea is a big big tanker ship trying to move, it is not really easy to achieve that agility inside the bank. Outside of the bank fintech's might not have the muscles that we have, they might not have the number of customers that we have, but they have innovation, good ideas and agility."

Consequently, it is crucial that possibilities created by third parties are communicated out to the various departments. Moreover, it is crucial that processes for good internal communication are established to create an environment that enhances the possibilities for successful collaboration. The strategic business developer highlights these problems:

"You cannot know everything that's ongoing. Nobody does. That is a challenge."

Moreover, to create more agile and creative departments, Nordea has formed cross-functional teams which could better the ability to understand new possibilities generating a deeper business understanding when for example a business developer and a strategic developer work together. This is however not implemented across the organisation, but multiple employees have noticed increased transparency and

collaboration within the organisation, especially after open banking, this is in line with open innovation theory.
As mentioned above organisational inertia is an existing problem, as a consequence of this Nordea has introduced several new internal initiatives and multiple new ways to collaborate across departments.

Issues related to internal initiatives

The internal platform is established to minimise organisational inertia. The platform will contribute to the employees gaining a broader and richer network and contribute to collaboration across departments. Both broader networks and collaboration across departments driver of open innovation (Fasnach, 2009, Laursen & Salter, 2006). Preliminary it is going to be a funnel for sharing knowledge, coming up with new suggestions and asking questions for employees across both departments and countries.

"The first step in our innovation journey is to know what we know".

The managers stated that being able to share the knowledge with each other is very important to become more open and innovative. Moreover, internal communication and knowledge sharing among employees will contribute to a better absorptive capacity (Foss et al., 2011) The internal platform is also an initiative to mitigate the structural problems in Nordea, while simultaneously providing the employee's ownership and engagement with their ideas.

A term that arose quite frequently under the interviews was agile. The meaning of the word in a business context is that the organisation operates "quick and well-coordinated in movement". The interviewers mentioned agility when talking about Nordea being a large organisation with many layers. Nordea is not as agile as they want to be, however, agility is being introduced to more and more departments with the SAFe program. SAFe is short for Scaled Agile Framework and was introduced in 2014 when Nordea decided to become more agile. SAFe is an agile framework intended to increase efficiency in teams, foster creativity, provide decision-making privileges, and create an aligned management that is supportive of agile teams. Thus, emphasising on improved organisational practices, and succeeding will create a higher "absorptive capacity" (Foss et al., 2011).Furthermore, the employees are free to decide themselves, what they prefer to focus on.

Accepting that the employees need time for innovation is a good start, and Nordea believes that it is essential to create a space where both innovation and the employee's daily tasks can be combined. However, SAFe is not implemented in every department yet. Though, Nordea has decided that the framework is going to be implemented in all departments.

Although Nordea has introduced both internal and external initiatives to 'opening up', there are still organisational obstacles to innovation. All the respondents pointed out that the main issue is related to Nordea's size. Nordea is a large organisation where every department has their targets and own systems for measuring performance, that is not aligned across the organisation. The interviewers described this as Nordea being built by different companies within the company. Thus, seeing every department almost as an individual company. This structure is creating obstacles for cooperation internally. Two respondents pointed out that:

"*Another department could figure out something that is useful in this department, but because of the structural issues we don't know about it."*

Resistance to change

In excess to inadequate flow of communication within Nordea the employees explain that some employees resist the new era of open banking regarding *"giving up control"* Nordea has previously been responsible for all development and distribution of products and services in-house and external collaboration, and production is a challenge for some employees. Resistance to change is thus a significant challenge, both because many employees do not see the need for open banking, but also because employees are in fear of losing their job (Fu, 2012). Nordea has also started with down-sizing the workforce as an effect of the digitalisation of processes.

This in sum could further result in resistance amongst the employees for communicating possible new solutions or services by third-parties (Chesbrough, 2006). Moreover, it could also affects the process of locating suitable partners because the opportunities from some departments might not be communicated in fear of surrendering control (Foss et al., 2011). Initiatives are however ongoing, both regarding replacement of the core systems and implementation of new collaborative initiatives to create a more unionised organisation.

"The office365 is a platform that is much more collaborative in a large corporate like a Nordea, with all kinds of supporting tools to work in teams and cross functions."

Moreover, open banking makes collaboration more industrial and platform-based so that it is more productive and thus creating less friction when collaborating with external partners. This is partly due to the technology culture and opening the development portal, but a lot of it is also about creating ways of and patterns for collaborating (Foss et al., 2011). Moreover, the fear of implementing external products and services can come from the resistance of utilising products and services that are not produced in-house, what Chesbrough (2003) called the 'not invented here syndrome'.

Moreover, managers argue that projects and processes that previously occurred over an extended timeframe are not sustainable due to the rapid transformations in the business environment.

"Nordea is welcoming this new agile way of working, since the method promises to deliver in small steps and thus, obviously make smaller mistakes. If you make a mistake today, it is, of course, smaller now than it will be in one year's time, in one year it will have turned into a huge mistake."

Thus, Nordea is now going through a transformation process, and agile ways are being implemented in more and more parts of the bank, and this is also a priority from their top managers perspective. The interviewers believe that Nordea will be able to be more agile, but that they

"..will never be as agile as a start-up for example due to their size and since they are so heavily regulated and very risk-focused."

Organisational inertia related to partners

Fintech's and start-ups are in many ways the opposite of Nordea, and a tremendous complementary asset if utilised correctly (Sandulli & Chesbrough, 2009). However, if organisational inertia undermines the organisational characteristics of the fintech the purpose of Nordea utilising the competitiveness of the agile start-up is meaningless (Roper et al., 2007). A partner manager states that

"structural differences in collaborating with small companies are mostly created by Nordea."

As noted earlier the processes of establishing partnerships are substantial and based on agreements with large companies. The outcome is then that the process of acquiring a fintech or start-up takes a long time and would *"..kind of suffocates any small company."*

In Nordea, the process for locating an external partner is first a pitch, meeting, a further assessment and then if deemed relevant the fintech will have an arranged meeting with the appropriate manager from a specific department within Nordea. Moreover, Nordea state that the processes of becoming a partner are

"Very heavy and would kind of suffocate a small company."

The processes of partnering or acquiring a company are over-dimensioned regarding the small companies that Nordea now is targeting. An employee calls the procedures and processes of collaboration *"an* *overkill"* because these companies can have few employees with no previous track record to show or even customers yet. It is then evident that many of these procedures will fail, and thus failing to utilise the possible complementary advantages (Foss et al., 2011).

Moreover, the processes of acquiring partners can also be regarded as a risk-assessment it is impossible to vet these companies with no previous results or any other element that can be evaluated. Banks are typically very risk-averse and trained in compliance and regulation, so a desire to take risk has not been prevalent in the banking industry (Henderson and Clark, 1990). A partner manager explains that it can be difficult for the bank to move away from being risk-averse, and thus there is no 'big appetite' for moving into something uncertain. Outcome uncertainty is a 'side-effect' of pursuing openness and should be accepted regarding moving into the open banking era (Foss et al., 2011). Nevertheless, the partner manager states that

"So, if you have done several of them (risk assessed companies) and if you guard yourself well enough then one day you will hit the goal, but first you need to be willing to try something new and fail."

This points to an inherent resistance against changing. However, this is something that Nordea is working on, and are confident that they will figure out

"I am in no doubt that some barriers will have to move if we are going to succeed in partnering with fintech's. I am quite confident that we will break that one".

Collaboration and co-creation

Nordea has understood that trust in banks is uncertain as the barriers to offering banking services are down, and it is not possible for Nordea to solely rely on loyal customers. Thus, action is needed to maintain Nordea's leading position in the market. Working with external partners and attracting knowledge from outside of the firms is a large part of both open innovation and open banking (Chesbrough, 2003). Additionally, collaborating with external partners may be a way to remaining competitive in the new era of open banking. Nordea has dedicated employees to multiple teams for managing partner relationships, both in the open banking and in the Group digital team.

Nordea state that the purpose of collaborating with external partners is twofold, to create better services for the customer and distribute their products through partner channels. The intention of offering their services through other channels is to reach new customers. This can also be an effort of collaboration with competitors, with the intention of utilising synergies and offset the increased cost or reduced revenue from the sharing of resources (Torkkeli et al.2009). Moreover, this will hopefully award Nordea with an improved market position and yield an increased competitive advantage while sharing resources with their partners (Gassman and Enkel, 2014). For partnerships, Nordea is not solely searching for PSD2 compliant partners, but also for their 'premium API's' offerings. With co-creation and partnerships, Nordea will hopefully achieve competitive advantages regarding higher innovation performance, higher customer benefit and higher novelty (Schilling, 2017; Poetz & Schreier, 2012; Chesbrough, 2003)

As found in the literature review absorptive capacity is crucial to utilise external knowledge, how well Nordea is to absorb the capabilities of external knowledge (Sandulli and Chesbrough, 2009). The ability to identify resources and how well Nordea manages to integrate and exploit the external knowledge is two factors included in the absorptive capacity, the below section will elaborate on these topics. Moreover, organisational inertia is a vital factor for being able to integrate, exploit and identify resources correctly (Cohen & Lecinthal 1990, Laursen & Pedersen, 2011).

Identifying resources

Local versus Distant search

When attempting to identify the scope and strategy of the external source for partnerships, it is not precisely clear what Nordea are searching for in the space of locating external partners. Nordea does not have a specific strategy for what they are searching for in the external environment. It is more of a trial and error process, to see what is out there and what might be suitable for the different divisions of the bank.

"Nordea is looking for partners to fill some holes we have in our service offering."

And

"We really don't yet know what cooperation and partnerships will bring in terms of services and benefits for the customer, but that is what makes this exciting"

Nordea is searching in multiple areas for partners, both in own accelerator programs, presence in the start-up community and one-to-one meetings. The search for new ideas or relations has less certain outcomes, longer time horizons and more diffuse effects than does further development of existing ideas and relations.

The focus on finding relevant or interesting partners is however limited to local search, as Nordea is only seeking a partner among companies that already are familiar with open banking. Moreover, local search is associated with incremental innovating. This implies that Nordea is actively seeking resources in a broad scope, which is might to not result in better outcomes regarding successfully finding correct partners (Ahuja & Katila, 2004). Nordea is aware of this long process, and that it is resource consuming.

Breadth and depth

A broad search might be advantageous due to the early phase of financial technology, the PSD2 related services and products are still early in the maturity process. Thus, assessing a wide range of external partners can provide diverse and relevant information for a better decision foundation (Laursen & Salter, 2005).

Moreover, the search is considered to be deep due to the intention of integrating partner products in the value creation in Nordea. However, a search that is both broad and deep are more likely to be more innovative (Laursen & Salter, 2005). However, this is a learning process that takes time to understand which solutions and companies that are most relevant to the company.

"..and these people will learn to map out the relevant solutions, the best solutions that we can think of using an utilising in order to serve our customers better."

A drawback of searching for external partners in such a broad scope is that there is a possibility of losing out on the 'best' fintech because these players might not be present in the channels Nordea are searching for partners. Notably, searching for external partners in such a broad scope also have its disadvantages. Therefore, it is not as effective as a closed approach in identifying and attracting the best players. This is because when the number of participants increases, the likelihood that a participant solution will be selected will decrease (Pisani & Verganti 2008, p.4). Thus, the 'best' fintech would instead be willing to participate in a closed model of collaboration (Pisani & Verganti, 2008). In this case Pisano and Verganti, 2008) argues that it is better to pursue fewer and better ideas. One might think that this problem could be solved by the pilot program Nordea has, but these potential partners are also an outcome of an open model from collaboration.

Moreover, the local search for partners typically leads to cooperation with partners that are known to the firm from before, as previously mentioned the Nordic payment scene is said to be quite advanced compared to the rest of Europe, and thus a local search can be advantageous (Laursen and Salter, 2005). The extensive search of external knowledge can lead to inferior internal development both regarding resources spent on search and the belief that the organisation can find someone else to come up with a better solution to the 'problem' (Lou and Rond, 2006). By having multiple employees responsible for search, contact, initiation and maintaining these partnerships, it is apparent that the search costs are high.

The managers responsible for search and locating possible partners are attending fintech hubs, taking meetings on a request basis and have accelerator programs to enhance innovation, thus using channels of closely related knowledge (Katila & Ahuja, 2002). The developer portal, the sandbox is also an arena for locating partners, where Nordea can reach out to external parties, or the external parties can announce that they would like to join the pilot program Nordea have 'on top' of the sandbox.

"We are using the sandbox and pilot program opportunities to identify and collaborate with third parties that could provide innovative and value-adding services to our customers."

When conducting the broad search, Nordea encounters many start-ups that are not necessarily relevant to the organisation. Instead of ignoring these unrelated companies Nordea sees its presence in the start-up community as a 'social responsibility', giving advice and guiding in the right direction to other possible partners. One of the managers stated that

"..and we will also help to open the doors for these people. So, for us being present in these ecosystems we also have the responsibility to help develop these start-ups."

This states that the intention of discovering external sources of knowledge is not only for selfish purposes but for creating an environment of increased financial innovation, openness and growth in the industry in general (Chesbrough, 2009, Rodriguez et al. 2015). Lastly, the managers responsible for the search of partners are banking employees with inheriting banking habits and values. This can, in turn, lead to a fault in which partners that are accepted, only companies that are in-line with the traditional habits and beliefs in the bank will be accepted (Henderson & Clark, 1990). Thus, choosing the wrong partners related to the depicted strategy of

"Finding the most attractive partners and smarter solutions than other competitors."

If radical value proposition from start-ups or fintech's will be rejected, the bank will still miss out on 'false negatives' (Chesbrough, 2003), ideas that do not seem to be valuable might be valuable. In other words, ideas that don't fit the banks business model will be excluded. The bank will still focus on incremental innovation because they are not willing to take 'radical' choices regarding finding the right partners (Henderson & Clark, 1990).

Bigtech's

Multiple managers stated during interviews that bigtech's such as Amazon, Facebook and Google not are considered competitors, they

"wish to regard them as partners, rather than competitors".

The research found points to the large multinational company being superior to Nordea regarding search scope. The large multinational company has the means to conduct a more explorative search, thus a higher degree of distance (Laursen & Salter, 2005). Thus, being able to explore knowledge outside the natural boundaries of a bank, in new channels. Hence, possibilities of broadening research to areas that might not be available to Nordea. Additionally, the established findings depict an increased trust in bigtech's (Bain &Company, 2017). Therefore, in excess of regarding bigtech's as partners, Nordea should view them as competitors. It is worth to mention that Nordea has an active partnership with Apple, utilising their technology to offer customer opportunities to make payments with ApplePay this is in line with one of Nordea's focus area on new technologies.

Regulation

Regulation is also somewhat affecting the establishment of possible partnerships. The partner manager describes challenges with naïve start-ups that do not grasp the burdensome regulations that are enforced.

"..thanks to that nativity they believe that everything is possible and they are very positive, but they are some rules in society and also legal rules that are absolute."

The partner manager explains that this static regulatory framework has made some start-up companies avoid entering a partnership with Nordea due to impatience. Nordea state that the regulatory framework is a burden in discussions with small companies since it is so substantial in comparison to the small companies. However, Nordea does not believe the fintech's will benefit from only utilising the account data since it will not be lucrative. Thus, the fintech's will likewise benefit from a joint relationship due to Nordea's large and broad customer base. Also, all fintech's will have to the tedious legislative process no matter which bank they choose to partner with.

The process of integrating and exploiting external partners

Risk

The process of 'becoming' a partner is characterised by being a long and tedious process. Nordea view the most prominent challenge regarding working with these small and new companies being

"The need to learn how to operate with a kind of totally different type of company."

With this Nordea acknowledge that new partners of entirely different competencies require new capabilities in many different areas. Moreover, the processes that are enforced today are overwhelming and should be re-evaluated.

Nordea is not unfamiliar with partnerships and strategic alliances. Nordea has traditionally been engaged in partnerships with large companies like the insurance company Tryg AB or the Finnish invoice processing company Basware. These companies are somewhat of similar size, with layers of structure and regarding internal bureaucracy like Nordea. Thus, they can bear the risk together. The partner manager explains that the processes of partnering with fintech's and start-ups are based on the same structures as the big companies, thus a high focus on risk. However, when pursuing an open innovation path outcome uncertainty is one of the drawbacks, and should be accepted (Sandulli & Chesbrough, 2009). Moreover, Nordea is looking for companies that are willing to *"share the risk",* which is in line with one of the overall objects in open innovation (Gassman & Enkel, 2004). It is not clear what exactly the risk is. So, it depends what kind of risk, but if it is regarded on an overall level, it might not be plausible. Nordea is observed to have a lot more to lose compared to the small start-up or fintech. Especially regarding credibility.

"If a tech company's interface breaks for a while, you would probably don't be that scared. But if somebody who was taking care of your banking, if the systems do not work or break down it is a much bigger issue, and you do not get another chance to prove that you are reliable."

Moreover, regarding risk, the pilot programme is only open to selected third-parties due to security reasons. In the pilot program, Nordea gives selected third-parties access to real customer data. They do this for fear of losing trust with customers in case some information would be released (Shah & Swaminathan, 2008).

Nordea is pursuing multiple different partnerships. Nordea has outlined multiple scenarios like white-labelling, venture investing, revenue-sharing, co-branding and so forth. For example, the repercussions regarding risk from a white-labelling partnership will solely affect Nordea while revenue sharing will affect both the partner company and Nordea regarding sharing of risk. The way these partnerships are organised are "case-by-case". This sends positive signals to possible partner companies that Nordea is flexible regarding contractual agreements and open to suggestions and hopefully achieves partner commitment through being flexible (Shah & Swaminathan, 2008).

However, if thought about risk on a more general level Nordea wish to go all in with a new partner, and expect the new partner to do the same, in a way this shows that Nordea is serious about the partners they are committed to in the partnership. One of the advantages related to open innovation is risk and cost sharing (Gassman & Enkel, 2004), seeing that the targets are mostly small newly started companies it is uncertain if an attribute of collaborating with fintech's have that advantage. If partnering with larger corporations, this is more likely.

Moreover, Nordea state that they are valuing quality over quantity and invests substantially in one company, regarding time and resources. They jeopardise all on one company, instead of investing in three companies and hope for one to be beneficial. This implies that Nordea will be able to manage and utilise the external knowledge when strategically choosing few partners (Dahlander & Gann 2010). Moreover, it also shows the fintech that Nordea is both a serious and reliable collaboration partner. The negative aspect of being solely focused and invested in one company is the concern about a faulty outcome, and the relationship could cease to exist. Lastly, only choosing one partner might be a drawback because Nordea may miss out on other promising opportunities (Dahlander & Gann 2010).

Integrating external knowledge in new channels

Furthermore, Nordea is expecting to open an app store, within its own digital channels. The app store is going to offer products and services from a various selection of fintech's. The head of open banking is expecting that the store will offer services from at least one hundred different fintech companies by 2020. It is expected that these partnerships will be more superficial with little interference and impact regarding integration and exploitation, and thus an approach to offset increased costs and lost revenues. It would be difficult for Nordea to manage and utilise the benefits of increased internal innovation due to difficulties in managing that many 'close' relationships ideas (Laursen & Salter, 2005).

This thesis is as noted not 'private' and thus open to the public. Therefore, Nordea was not willing to share private information. Consequently, the employees were not willing to disclose how many partnerships that had come out of the search but stated *"more than ten"* regarding how many partnerships that were joined at the time of conducting interviews. As found in the literature review, researchers point to a beneficial number of eleven partners. Therefore, it is plausible that Nordea will accomplish to gain more than the suggested optimal eleven, which is discovered to result in diminished innovation performance (Laursen & Salter, 2005).

Product development

A significant amount of research suggests that exposing employees to a large variety of external partners can result in more innovation at the company (Chesbrough, 2006; Laursen & Salter, 2005; Von Hippel 2006). However, Dahlander and O´Mahonys recent 2017 study found that there are also high opportunity costs with exposing the employees to a broad range of external partners. When spending too much time outside the firm engaging with external partners, one will spend less time learning about the firm's innovation needs. Thus, a too high focus on external development has been found to lead to a decreased focus on internal development. Nevertheless, this is not considered a significant threat and might even lead Nordea to better product development with increased utilisation of external knowledge in the development process. Moreover, Dahlander and O´Mahonys (2017) found that the employees at IBM most common source of inspiration were their co-workers inside the firm, rather than outside inspiration. Based on these recent findings it may seem like a good idea that only some of the employees at Nordea are exposed to a broad range of partners, while others are situated in-house and developing the new ideas from the partners and other employees further.

An effect of increasing customer expectations is faster product development. Customers are expecting products to arrive faster in the market and this is thus pressuring Nordea to deliver more rapid innovations and embrace uncertainty (Von Hippel 2006; Laursen & Salter 2005).

Prior to the open banking approach, Nordea is costumed with certainty, for example, it has not been a habit of announcing something new before it was ready to launch. The strategic developer says that this has completely changed in the open banking initiative, related to the sandbox she states

"In open banking, we have totally switched around, so we have taken a lot into this sandboxing approach, so we put things out there to this sandbox, so people can check it out, and give us feedback."

This implies an entirely different mindset approach, thus embracing uncertainty and giving up some control when it comes to product development by including external knowledge in the value creation. The Sandbox is offering a very untraditional approach to innovation and development in the banking industry

and is deemed a positive process of implementation of more openness in the organisation (Chesbrough, 2003).
Moreover, the production pilot program mentioned above also serves the purpose of

"... to introduce better functionality, gather feedback, improve, and iterate until we achieve the quality we seek." (Nordea, 2017)

The above discussion can also be seen related to the factor of 'time-to-market', which is a decreased timeframe in the product development process. This factor is highlighted by multiple interview objects and is considered to be essential for acknowledging increased competition, rapid changes in technology and shortened in product life-cycles (Von Hippel, 2006; Laursen & Salter, 2006). When releasing products in the Sandbox, it is expected to shorten the development process in-house because validation and testing are done externally (Von Hippel, 2006; Laursen & Salter 2005). Thus, feedback is received from multiple parties, instead of the limited internal focus within the bank, receiving a more extensive range of feedback (Gassman & Enkel, 2004).

"We cannot compete with start-ups with time to market at all. So, it is definitely something we have to become even better at or at least acknowledge what we can produce our self, and what makes sense for others to produce for us."

Moreover, the aim of including third-parties in value creation can be seen in context with the discovered findings concerning large organisations inexistent ability to create radical innovations and apprehend necessary changes (Henderson & Clark, 1990). Large organisations are known to create incremental innovation while small companies are known to come up with radical ideas. Thus, integrating external knowledge could source the necessary capabilities to understand the necessity for change in the banking industry. However, it seems like Nordea has understood the necessity for change, with the open banking initiative (Govindarajan & Kopalle, 2006). And intend to overcome these challenges with integration of external knowledge.
Lastly, Nordea is also pursuing partnerships to obtain knowledge in areas where they lack expertise. For example, joining partnerships with companies that are specialising in artificial knowledge or distributed ledger technology. Nordea was one of the first banks in the Nordic to pioneer distributed ledger technology (Nordea, 2018), and they are also part of the international partnership distributor ledger group (DLG).

"The purpose of this partnership is to develop common standards and applications for using distributed ledger technology as the next financial service transaction network".

In this partnership, 25 international banks are collaborating with the company R3. They believe that collaboration is vital, and their goal in this partnership is to explore new technology to enhance customer experience. Grant (2015) states that the firm should concentrate on activities that create value, where they are superior. Thus, maintain a high focus on core capabilities and not services and products that are not adding value to the customer, thus the focus on attracting external knowledge for an increased competitive advantage.

Utilising API's

Nordea is going to facilitate access to external parties through open API's. The confusion concerning the PSD2 and the RTS on SCA has resulted in different solutions created by different initiative across Europe. Hence, creating difficulties for external third-parties being able to access customer data (Fasnach, 2009). Therefore, the TPP must create multiple solutions instead of one to be able to access customer data from several banks. This is expected to be an irritation for fintech's, creating friction in the banking industry, due to little flexibility in the network (Fasnach, 2009). However, this is not expected to be a grand problem due to possibilities of creating an abstraction layer on top of the different bank's open API's so that the abstraction layer would be the first contact point for external third-parties. Thus, creating a standard access point for fintech's this creates a standard network structure for payments and account information in the banking industry, diminishing the coordination issues previously seen as the denominator for the slow rate of innovation in the banking industry (Milne, 2016). Moreover, this can be seen in context with synergy effects in the banking sector, as well as possible increased revenues due to new sources of customers (Torkkeli et al.2009).

Nordea state that they have used an exploratory view on the PSD2 API's and therefore not have considered waiting for the legislation to be defined and explained so that the industry would conclude a common standard for the API's. Therefore, Nordea is following discussions within leading groups such as the Berlin Group and getting feedback from the sandbox in creating user-friendly API's for external developer's. Moreover, Nordea has stated that they will continue working on the API's to "*reach a satisfactory quality level*" This is viewed a critical factor regarding more openness in Nordea, considering external parties opinions for creating user-friendly API's. Thus, creating less friction and creating a beneficial network for collaboration (Laursen & Salter 2006).

Moreover, on the topic of API's Nordea is expecting to utilise the external partners for the creation of 'premium API's'. Nordea describes premium API's as offering services that are not regulated by the PSD2 scope, such as mortgages, pension and so forth. This is limiting the degree of openness because Nordea is not planning on offering such services in the development portal since the legislation does not oblige them. Thus, the model forces the customer to accept less than the best financial products (Manchov,2009; Chesbrough, 2009). For example, Nordea's most recent initiative in relation to this was partnering up with Tink. Tink's functionalities will be connected to Nordea's applications during 2018 and offered to customers. It is expected than Tink will be the only partner in this segment, thus limiting the customer's choice and creating a closed approach.

Summary

Issues related to organisational inertia is discovered, primarily related to size and agility. Organisational inertia creates a poor absorptive capacity which is a hindrance to successfully engaging in co-creation and collaboration. Thus, Nordea's absorptive capacity is not satisfying. Moreover, this section has found that Nordea has a broad, but not deep search, which reduces the chances of radical innovation. If radical value proposition from start-ups or fintech's will be rejected, the bank will still miss out on 'false negatives', which implies a closed approach (Chesbrough, 2003). Lastly, the employees responsible for search might be affected by inherit banking values and being risk-averse which might lead to a fault in which partners that are chosen.

Summary of findings

This section is divided into two parts. The first section produces a summary of findings from the analysis, aiming to answer the three supporting research questions. The first section establishes the foundation of being able to respond to the second part, answering the core research question.

Supporting research questions

Supporting research question number one:

What are the incumbent's banks current competitive advantages, and can the incumbent bank utilise these in the open banking era?

The first research question addresses the incumbent's banks current competitive advantages and evaluates if any of these are sustained competitive advantages, and how they can utilize this in the open banking era. It was found that Nordea does not have a competitive advantage in relation to loyal, trusting customers, as they score low in all the Nordic countries on customer satisfaction.

Moreover, as found in the analysis Nordea's current competitive advantage is related to their size and position in the industry. They have the largest customer base in Scandinavia, and they are also the bank with the best coverage in the Nordic countries. Additionally, Nordea has a competitive advantage in relation to compliance as they have years of experience with manoeuvring the regulatory framework. Nordea also have a competitive advantage by being the preferred partner of choice for fintech's looking for collaborations in the open banking era. Thus, Nordea is able to attract a broad range of multiple possible partners and thus being present in the external environment.

However, we concluded that the organisation could not utilise these competitive advantages to compete in a market with declining customer loyalty, changing customer demands and strong competitive pressure. None of these competitive advantages are sustained competitive advantages as they do not exhibit the characterising of non-substitutivity. (Barney, 1991), and in order to become a leading player in the open banking era, it can be argued that the incumbent bank need to have a sustained competitive advantage. Thus, Nordea regards innovation and collaboration with external partners as the way forward in order to achieve this. This is in line with open innovation theory which argues that firms should use open innovation as a way to gain or sustain a competitive advantage (Chesbrough, 2003; Huston & Sakkab, 2006). Moreover, the most important part of open innovation is the facilitation of collaboration with external partners (Chesbrough, 2003; Laursen & Salter, 2006).

Supporting research question number two:

How is the incumbent bank utilising open innovation in the open banking era?

As discussed in the literature review open innovation processes can be outbound, inbound and coupled. Based on the context and findings in the interviews Nordea is engaged in both coupled innovation processes and outside in innovation. However, Nordea has no individual initiatives for inside-out innovation as there is no organised way that Nordea is letting unused ideas flow from inside to outside the organisation. This may limit the overall openness because ideas that are deemed invaluable to the firm may be valuable to others and can create profits in other terms than producing the service or product in-house.

Moreover, Nordea is engaged in **outside in innovation,** thru their innovation lab, collaboration with students and crowdsourcing platform. This is a part of their realisation that they can not innovation alone, and Nordea is not the only ones with great ideas. Nordea is seeking to tap the potential of "open innovation" by encouraging some of their employees to search for new ideas among external partners as described in sub-question 3. Lastly, Nordea's developer portal and Accelerator program is found to be a tool of **coupled innovation,** which combines the outside-in innovation and the inside-out innovation. The developer portal facilitates collaboration with external third-parties regarding feedback, a platform for collaboration and an environment to find possible partners, while Nordea's Accelerator program is an innovation competition in collaboration with the venture capital Nestholma.

In sum, all the initiatives are helping Nordea becoming more open since the best way for open innovation is to become an integrator of both external and internal knowledge (Chesbrough,2009).

If Nordea and their employees are not able to change its mindset and take on a new stance towards business, customers, and the ability and willingness to open up the innovation – it will be difficult for the firm to benefit from it. Moreover, when aiming for a shift towards open innovation, conflicts may arise within the organisation due to employee's unwillingness to change (Chesbrough, 2003). However, it can be argued that Nordea is already geared towards open innovation due to the high number of internal and external innovation activities introduced in the company. On the other hand, it can be argued that they are not, they do not have an innovation strategy, and the bank, and the employees are risk-averse. Thus, the process of "opening up" is limited by established culture and values.

Supporting research question number three:

How and why are incumbent banks experiencing obstacles to open innovation?

The third sub-question addresses the scope of absorptive capability and organisational inertia, thus Nordea's ability to utilise external knowledge within the organisation. This is implicating Nordea's ability to execute new initiatives, and the ability to utilise knowledge input from implemented initiatives. The goal of successfully integrating and exploiting resources can be described by being able to utilise the complementary capabilities from the small company to achieve a competitive advantage.

However, Cohen and Levinthal (1990) explain that the capabilities to integrated and exploit resources are built over time. The new focus on external partners is perceived to take time for integrating and exploiting to a beneficial standard. Moreover, Nordea has a high focus on risk, both regarding partners and towards new products and services. This is in line with the traditional bank, limiting the organisation to take a risk when sought to be advantageous. Thus, limiting the ability to execute. The ability to execute is also perceived to correlate with the factor of time-to-market, where the developer portal is a tool for a more rapid development phase creating a valuable advantage regarding the ability to execute.

Nordea is currently undergoing multiple improvements across the organisation; the underlying core services are replaced as well as values and thoughts on organisational culture. Nordea is on the 'right path' but has a long way to go especially regarding silos and "old" banking habits and beliefs. Moreover, the organisational processes of becoming a partner are overwhelming and in line with Henderson and Clark's (1990) view on organisational inertia. Especially concerning routines creating obstacles for successfully implementing changes, as well as reluctance to change.

Nordea has the last couple of years introduced many new initiatives to foster collaboration and knowledge sharing between the different departments at Nordea. The initiatives are focusing on improving internal communication and investing in resources, intending to create a more agile organisation, pointing to a will to change and overcoming obstacles tied to organisational inertia. Moreover, when establishing partnerships with fintech's and start-ups the process is over-dimensioned to the small companies currently pursed in the open banking initiative and should thus be simplified to create a simplified entry for partners. Moreover, Nordea is burdened by organisational inertia for communicating opportunities and limitations which creates limitations in utilising the possibilities of open innovation. Obstacles with organisational inertia imply a diminished ability to execute.

Nordea achieves a more open approach by participating with coaching, mentors and financial advice not solely for own gain. Nordea is also utilising the developer portal for openness, inviting developers to participate in the development of Nordea´s products. They receive feedback on product launches and integrate changes. Thus, creating a more open approach which is a transformation from the traditional bank´s closed attitude. However, Nordea is holding back on releasing innovative products, before the PSD2 is enforced, depicting a withdrawn attitude to openness.

Answering the core research question

How can the incumbent bank become a leading player in the era of open banking?

Regarding competitive advantages Nordea has three; Size and position, compliance and being the preferred partner of choice. However, this is not enough to become a leading player in the open banking era, as the competitive landscape is changing. In order to become a leading player in the era off open banking, companies need to have a sustained competitive advantage. A sustained competitive advantage provides a superior and favourable long-term position over competitors (Barney, 1991). As mentioned earlier the market Nordea is operating in is experiencing declining customer loyalty and increased competition.

Thus, Nordea new means need to be addressed in order to become a leading player. The way forward is to collaborate with external partners and engage in open innovation. To achieve the leader position a bank needs to successfully integrate and exploit resources, thus being able to utilise the complementary capabilities of external partners. Nordea has not succeeded with this on a satisfactory level due to organisational inertia, internal resistance to change and lack of sufficient communication within the organisation. The above findings state issues regarding being able to execute efficiently due to organisational inertia, tedious processes and an inherit risk-averse mindset.

Moreover, Nordea is only engaged in coupled and outside in which can be seen as them not being entirely open. To achieve the leader position a bank needs to successfully integrate and exploit resources, thus being able to utilise the complementary capabilities of external partners. The above findings state issues regarding being able to execute efficiently due to organisational inertia, tedious processes and an inherit risk-averse mindset.

The above discovery enables us to place Nordea in the constructed framework. The analysis concludes that Nordea is obtaining a position in the visionary mount in the framework. Nordea is a traditional bank that has succeeded in integrating external resources to some extent, but they are still struggling with the ability to execute due to organisational inertia and lack of agility. Moreover, Nordea has not completely mastered the skill of openness as they are only engaged in outside in and coupled innovation, moreover they are trying to create an innovation culture "but they are not there yet". Nordea's organisational inertia and inherent risk-averse and the "closed" mindset place them in the visionary mount.

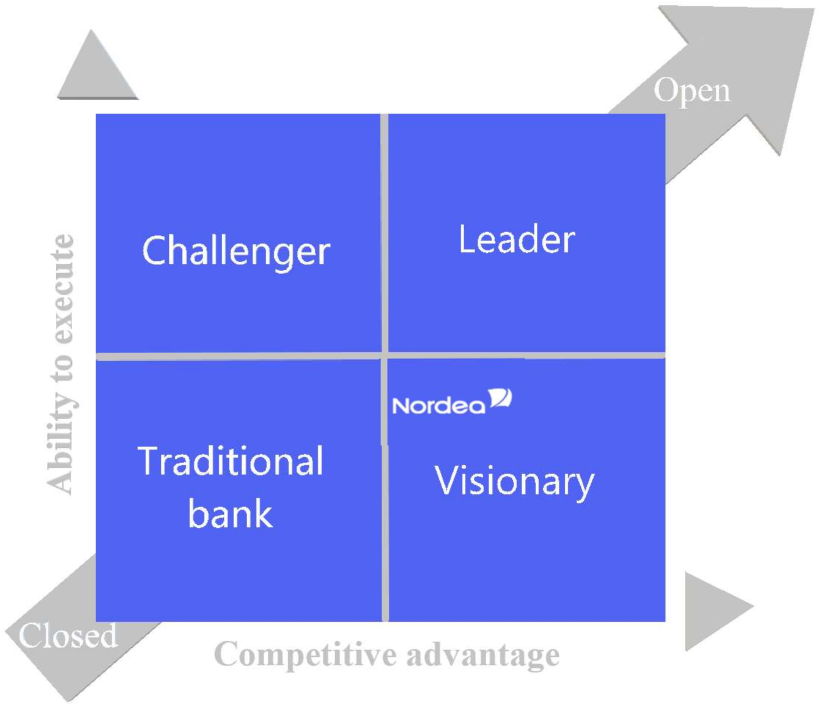

Figure 13: Open banking framework – post analysis, own contribution 2018

Discussion

The discussion aims to evaluate the research conducted. First, the results are interpreted and elaborating on the outcome of the thesis. Following, a section regarding further research, and clarification of limitations.

When answering the main research question "How can an incumbent bank become a leading player in the open banking era?" and analysing the three-sub question one can see that current competitive advantage, organisational inertia, absorptive capacity and open innovation-are all factors that can influence Nordea's ability to become a leading player in the open banking era (Development in markets, technology, PSD2 and increased competition).

Overall, the company's current competitive advantage will not be enough to become the leading player, as market trends and the competitive landscape is evolving. Thus, Nordea can e.g. become a leading player through open innovation. For this, they have introduced several initiatives (Accelerator, Sandbox and Fintech roundtable to mention some). By doing so they are involved in both outside in and coupled innovation processes. Thus, these initiatives aim at absorbing information from external sources. Through these initiatives and collaborations, customers need can be fulfilled more, accurately and Nordea will not lose their current competitive advantage (Size and position, compliance and preferred partner of choice). Moreover, as found in the thesis open innovation may give rise to numerous benefits such as fulfilling customers need, improve the market position and innovate faster and better (Chesbrough 2003). In other words, open innovation can potentially help the company be in front of competitors when responding to market changes, hence the open banking era

On the other hand, Nordea's utilisation of open innovation can be seen as quite successful as it fulfils two out of three innovation processes (outside-in, and coupled), but not inside-out (Gassman & Enkel, 2004). However, it could be argued that in order to become a leading player in the open banking era Nordea needs to have the capabilities in relation to outside in processes as well. Gassman and Enkel (2004) argues that for each of the core processes of open innovation a different capability is needs (Gassman & Enkel, 2004, p.13), and in order to be entirely open, Nordea needs to be involved in all the innovation processes (Chesbrough, 2003).

We expect that Nordea might be able to overcome their challenges related to the absorptive capacity by having a continuous focus on organisational obstacles such as communication and further implementing agile ways of working. More openness is expected to increase if taking a more substantial risk in collaborating with partners and also by engaging in inside-out innovation. Furthermore, creating an organisation open for innovation takes time, and Nordea has shown that they are working on this by introducing several internal (and external) programs for innovation to "create an innovation community", but they are not there yet. By continuously working on these aspects, they could become a leading player.

Thus, it can be argued that Nordea will be able to achieve the needed absorptive capacity in relation to the outside in process, which is the most crucial determinant for a firm's ability to innovate on the basis of externally sourced knowledge. However, in order to fully succeed with the open innovation approach companies also need multiplicative and relational capacity in complementation to the absorptive capacity (Gassman & Enkel, 2004).

Nordea has relational capacity to some extent, which is related to their coupled innovation processes. When having a relational capacity, Nordea is able to build and maintain good relationships with partners which is contributing to Nordea's competitive advantage. An argument for this is that Nordea are the preferred partner of choice for fintech's entering the open banking era. When companies have relational capacity "a company can be differentiated by the networks to which it is connected and the alliances and joint venture that it can undertake" (Gassman & Enkel, 2004 p.13). Thus, the relationship with other company's complementary companies and competitors can be a firm's major asset and a necessary pre-condition for the linked process with open innovation. On the other hand, it can be argued that Nordea might face troubles sustaining these relationships due to their lack of agility and the long and difficult process for decision making. As found the analysis Nordea will never be as agile as a start-up. Thus, a fintech might choose to partner with a more agile challenger bank instead.

Furthermore, Nordea does not have multiplicative capacity which relates to the inside-out process as they are not engaged in any inside-out innovation. The belief is that only the companies that are able to codify and share its knowledge with the external entity and/or external partners will have successful commercialisation of ideas. Thus, the fact that Nordea does not possess multiplicative capacity could hinder their open innovation opportunity and, thus be an enabler for why they will not become a leader in the open banking era. A suggestion for further research is how the incumbent bank can gain multiplicative and relation capacity in order to apply the open innovation approach most effectively, or how the missing these missing capacities will impact the ability to become a leader.

Another suggestion for further research could be on how the firm's organisational structure (centralised, decentralised and hybrid) impact the firm's ability to source and absorb external knowledge. The logic that a decentralised structure can be less flexible in terms of communication flows, and, hence an efficient idea exchange could be applied. Thus, flexibility is an important aspect for the company, when aiming for improvements to enhance innovation. Consequently, it can be argued that when implementing open innovation, structural rigidities should be lowered. Therefore, the organisation need to absorb external knowledge and ideas to successfully implement open innovation. However, to make any specific conclusion about how the incumbent bank's organisational structure impacts their open innovation efforts, more qualitative research needs to be conducted.

Moreover, open innovation requires ongoing interaction with external actors. This may lead to changes in the value chain as well as the firms business model (Chesbrough, 2009). This thesis was limited in its scope to analyse how a large incumbent bank (Nordea) can become a leading player in the open banking era, through open innovation. However, we left out two features that could be interesting to analyse, namely how the value chain and business model could change by implementing open innovation.

Delimitation

When reflecting upon the study conducted the main delimitation of this paper is that we are writing a substantial amount about organisational structure in the analysis, but this is not a part of the literature review. Literature about how the ambidextrous organisation and organisational structure impacts open innovation efforts should have been included. These theories are closely related to absorptive capacity and organisational inertia, thus in order to get the "full picture" on how to become a leading player in the open banking era.

One challenging aspect of innovation is how to integrate new innovations into the business without affecting the performance of core business operations negatively. Although the firm has agreed on the importance of innovation and has set up teams or departments to develop new innovative products and services, the result might be that these products are never being launched because nobody in the existing business units takes the risk and responsibility of launching them. This would have been very valuable to investigate since the banking sector, and its employees are typically known to be risk-averse. Also, the thesis is mostly focusing on external partners and collaboration in relation to open innovation, thus more theory about collaboration in the literature review could also have been presented.

Conclusion

"How can the incumbent bank become a leading player in the open banking era?

The aim of this thesis was to answer the research question by following a conceptual framework that was developed using existing theory, thereby to investigate how an incumbent bank can become a leading player in the open banking era, by using the case of Nordea. To be able to establish a base for understanding how the incumbent bank can become a leading player in the open banking era, three sub-questions were developed. These questions are applicable in strategic management and innovation literature when formulation innovation/development strategies in large incumbent banks.

Firstly, Nordea's current competitive advantage was analysed. It was found that Nordea has a competitive advantage in relation to size and position, compliance, and being the preferred partner of choice for the FinTech's. However, none of these competitive advantages are sustained competitive, thus the organisation cannot utilise these competitive advantages to compete in a market with declining customer loyalty, changing customer demands and strong competitive pressure.

Secondly, it was found that Nordea are engaged in inbound and coupled innovation processes, and that they have introduced several internal programs for innovation. In sum, the organisation is engaging more in open innovation and their degree of openness is increasing. However, it takes time to change an entire organisation and there is still some reluctance to change. Nordea does not have an innovation strategy, but they are trying to build an innovation culture. However, as one of the respondents stated, "you cannot just introduce several initiatives and then all of a sudden we are innovative", it takes time to change the mindset of an entire organisation.

Lastly, to answer of what factors, determine Nordea's ability to collaborate with external partners. We found that Nordea lacks absorptive capacity. The factors of identification, integration and exploitation were examined, and several deficiencies was found, especially related to inherit banking values and beliefs. Given the internal organisations inertia, large size and lack of agility the conclusion is that Nordea lack absorptive capacity was made.

Having reviewed company-specific factors such as culture, organisational obstacles, innovation, absorptive capacity and examples of open innovation initiated by the firm the main findings is that Nordea is a visionary in the open banking era. However, they could possibly become a leader in the future if overcoming the obstacles related to absorptive capacity, organisational inertia and continuously working with processes and initiatives for engaging more in open innovation, but it will take time and changes will have to be made.

Appendix

Interview guide

1. Motivation: Try to get an overview on the interviewee and their role at the Nordea
    a. What is your name?
    b. What is your position?
    c. What kind of trends and changes have you observed within the banking industry recently?
2. Motivation: Try to get an overview of how the interviewee's perspectives, views and opinions about the PSD2.
    a. What are your thoughts on the directive?
    b. What do you think is the reason for implementing the directive in general?
    c. Do you think the directive is a threat or opportunity for Nordea or banking sector in general?
    d. Do you think Nordea have competitive advantages relating to size and position in the market that can help in mitigating or exploit the threat/opportunity?
        i. Of all these things noted, what do you think is the most important aspect of staying competitive in the new banking industry? What is the main focus?
3. Motivation: Get an overview of Nordea’s open innovation
    a. How would you describe Nordea’s innovation strategy?
    b. Do you have any external innovation program to enhance innovation?
        i. If yes, is it a lot of activity going on? Do you see any positive results?
    c. How do you think the PSD2 directive has changed the innovation strategy at Nordea?
    d. What do you think are the organisational obstacles to open innovation in Nordea?
    e. Which benefits do you see Nordea gaining from open innovation?
    f. Why do you think *open innovation* so scarcely applied in the *banking sector*?
        i. Follow up: Do you think the financial services sector should use *open innovation* more widely? And why?
4. Motivation: Try to get an overview of the characteristics of Nordea’s collaborations/Partners
    a. What is the purpose of your collaborations and partnerships?
        i. Are there strategic targets for collaboration? What is the preferred way of collaboration?
    b. How are your collaborations/partnerships organized?
        i. What do they get out of it and what do you get out of it?
        ii. Is it standardised contracts/partnerships?
        iii. Is it necessary for your partners to have licensing in relation to PSD2, as TPP and therefore the rules and regulation that apply?
    c. How do you protect your IP/What is your IP protection strategy?
        i. If not, how do you plan/think of securing profits from retail payments?
    d. Has any of these collaborations contributed/resulted into innovation?
        i. If yes, what kind of innovation? Securing revenue?
    e. What are the obstacles when collaboration with different sources?

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