



SCHOOL OF
ECONOMICS AND
MANAGEMENT

The emergence of FinTech

*How do established banks in the Nordics react to the threat of FinTech
disruption?*

by

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ABSTRACT

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Five keywords: FinTech, Banking, Technology, Innovation, Digitalisation

Purpose: The purpose of this paper is to detect reactions of established Nordic banks to the emergence of FinTechs.

Methodology: The sample banks' annual reports of the years 2014 and 2018 were qualitatively analysed and the disclosed actions were clustered according to a developed framework, furthermore a software-assisted quantitative analysis of specific search terms was performed for all years from 2014 to 2018 to detect trends in the amounts of total mentions.

Theoretical Perspective: The theoretical perspective of this thesis covers a comprehensive overview of the FinTech industry and the Nordic Banking market, as well as possible reactions to market disruption derived from literature.

Empirical foundation: The data was collected from the sample banks' annual reports, which were gathered from corporate websites.

Conclusion: It was found that all banks of the sample have realised the threat and disruption that originate from FinTechs and have reacted by adapting their business model in a way, some rather drastic than others. With regards to the categories of the developed framework, the focus of the sample banks was detected to be on the in-house development of technology, collaborations with FinTechs, and investing in FinTech, whereas the importance of a digitally educated workforce is still neglected in large parts.

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1. INTRODUCTION

“Science and technology revolutionize our lives, but memory, tradition and myth frame our response.”

- Arthur M. Schlesinger -

1.1 Background to the research question

Financial Technology (FinTech) is a recent development that is described by the Financial Stability Board (2017) as financial innovation brought about by technology. This emergence of technology-enabled innovation initiated by startups, financial institutions and BigTech firms, has the ability to create new business models, processes, applications or products, and can significantly change the way financial services are provided. This technology-enabled innovation aims at drastically improving the delivery of services to customers in a more convenient and inexpensive manner. In addition, it has the potential to improve integrated processes and operations within financial institutions and financial markets, such as payment services, customer relationships, retail and commercial banking, wholesale banking among other things (Carney, 2017).

This wave of innovation is arguably the result of an assemblage of drivers, including changing customer preferences, economic development, evolving technology and business opportunities (Financial Stability Board, 2017). Even though FinTech companies (FinTechs) and their respective technology have gained traction and influence on the entire banking sector and how customers perceive it, there is still a scarcity of studies on the social, regulatory, technological, and managerial aspects of FinTech (In & Yong, 2018; Bughin & Van Zeebroeck, 2017). This arguably makes it challenging for established financial organisations to make informed decisions about possible investments, collaborations, and developments of FinTech projects. Recent years have seen a substantial amount of discussion, but little empirical evidence, about the threat that FinTech firms can pose to the established banking sector. It is evident that the digital revolution in financial services is underway, but the impact on current the banking industry is not as well defined.

There have been numerous studies on the effect of FinTechs on traditional banking sector in different geographical areas, such as the USA (Bunea, 2016), South-Africa (Coetzee, 2018), and some European countries, such as Germany (Bömer & Maxin, 2018). However, a lack of

(academic) research can be identified in the Nordic region. One could argue that the existing literature is not fully complete, and that there is a gap. This is a meaningful incentive to contribute such evidence by analysing the reactions from the Nordic's established banking sector towards FinTech disruption, especially when considering the high innovative power and digital sophistication that characterises Nordic countries in general and their banking industry in particular (Schwartzkopff, 2018). Supporting this argument, in their 2018 report the OECD, for instance, notes that "Sweden is among the leading countries in the diffusion and use of financial technology" (OECD, 2018, p.13). Further encouragement to study the Nordic region can be derived from the following points. The Nordic Fintech sector is relatively big in Europe and has grown at a rapid pace (Deloitte, 2017b). Not only that they report also that it seemingly appears to be the fastest growing startup branch within this region itself. Besides, FinTech Mundi and Magna Carta (2018) claim in their report that the Nordic region has given birth to half of Europe's six FinTech unicorns, these unicorns represent companies that are valued more than \$1 bn.

Furthermore, broadly speaking, it is interesting to see that the Nordic countries social trust levels are among the world's highest, this is illustrated in Dehley and Newton's (2005) study, who identified the highest levels of trust in Nordic countries within a sample of 60 countries. This finding is substantiated with Banfield's (1958) argument that the wealthier a country's society is, the less necessary and rewarding it is to take risks and to act in an untrustworthy manner, since this will violate basic societal material needs that are already met. By further narrowing the scope, the European Commission (2006) and Lekvall (2014) state that annual reports of Nordic companies are of above average quality when it comes to the quality of disclosure and perceived truth in statements, making the Nordics rather suitable to conduct research on the basis of annual reports.

Another motive to study the Nordic region relates to the point that within this relatively small region member states impose considerably different kind of regulatory environments. Regulation between the Nordics varies (Deloitte, 2017b), referring to e.g. the Danish approach on the one hand, as in Denmark, the Danish FSA launched a sandbox regime called *FT Lab* in 2018, which reverberates loosened regulatory requirements, allowing innovative parties to experiment new technologies and business models and thereby giving FinTechs that conduct business within

Denmark the ability to experience faster growth and enhance their competitive position relative to competition from other countries (including other member states of the Nordic region). This is because FinTechs in most other European markets, except Denmark and the UK, deal with less progressive regulatory requirements (Nybom-Bethe & Goldschmieding, 2019), meaning that other nations, including other Nordic governmental institutions, maintain a more monitoring-wise focused role, without (yet) taking into account sandbox models (Deloitte, 2017b).

1.2 Research question

The aim of this paper is to examine the effect that the emergence of FinTech has on the established banking sector in the Nordic region. In order to investigate how the Nordic banking industry reacts to this development, an extensive review of FinTech, in general, is required, further, the drivers of FinTech development and the future of FinTech needs to be analysed. The research question is therefore framed as below:

How do established banks in the Nordics react to the threat of FinTech disruption?

Within this paper, the established Nordic banking industry is referred to as a sample of 9 banks within the Nordic region, including banks from the most significant countries and markets. The following countries are represented in the sample: Denmark, Finland, Norway, and Sweden.

The research question further addresses ‘reacting’, which can be defined as anticipating and taking action in regard to the emergence of this unsettling wave of innovation. Taking action in the form of not just commenting or simply reporting about it, but by actually taking real measures, which is arguably crucial. In the view of that, FinTech is spawning a new type of firm, and in the longer term, it is believed to amount to the evolution of finance in general (Kovas, 2019). This author argues that “FinTech is changing banking so banks will increasingly become FinTech firms” (Kovas, 2019, p.1). Hence, one could say that FinTech should be considered a threat to the established banking sector, this specifically relates to their competitive position and ability to offer a range of new and innovative products and services that can potentially better serve customers, since new entrants or established non-financial (e.g. BigTech) firms are challenging the traditional financial services industry. Therefore, this study also lucubrates the current developments of the

financial services industry by aiming to gain a greater insight into where the industry is now and where it is going in the future.

1.3 Outline

Having given an introduction to the nature of the topic in this chapter, the following second chapter will focus on providing a theoretical background and overview of previous studies and their findings. The chapter allows the reader to gain insights into the topics of FinTech, banking industry, and possible reactions to disruptive innovation derived from literature. Following this, the third chapter is concerned with the description of the methodological reasoning behind the study. The research design, the selection process of the sample as well as the developed theoretical framework used to analyse the annual reports will be explained in detail in this section. In the fourth chapter, findings of the analysis of the annual reports will be presented, with a special emphasis on differences between 2014 and 2018 annual reports. In addition, an analysis of each bank and year will be presented directly after introducing the respective findings. This means that the findings and analysis sections will be combined, with the aim of facilitating a more comprehensive outline for the reader. At the end of this chapter, all findings will be summarised in a concise manner. In a consequent next step, the overall findings will be discussed in the fifth and final chapter of the paper, aiming to draw a conclusion regarding the perceived general/ typical reaction of the banking sector to FinTech disruption. Additionally, the limitations of the study will be outlined and recommendations for further research will be provided as well as practical implications of the findings. In short, this paper follows a typical outline that is often applied to empirical analysis in business studies.

2. LITERATURE REVIEW

2.1 FinTechs

The financial sector is subject to continuous growth over the last centuries with the first bank being established in 1472 (Alt, Beck & Smits, 2018). Especially within the last decades, the use of computers has played an important role in the evolution of the financial services industry. Early groundbreaking technological solutions include the automated teller machine and accounting software for instance, which have both significantly contributed to improving the delivery of financial services more conveniently and affordably (Sinha, 2017). One could argue that the industry has progressed further and that “disruption is also taking place as industry shifts into the Fourth Industrial Revolution” (SEB, 2018, p.2), which among other things represents the evolution of FinTech.

2.1.1 Definition of FinTech

FinTech or otherly referred to as Financial Technology includes any technological innovation in the form of a digital financial service that can revolutionise, vastly optimise or disrupt the established economic infrastructure (Gomber, Kauffman, Parker & Weber, 2018). FinTech is a relatively recent trend that has emerged on a broad scale only as of 2014 (Arner, Janor, Ross, and Zetzsche, 2017). It initiated a new transformation phase within the financial industry that reaches out to a broader public and on a global level (Alt, Beck & Smits, 2018). The provision of these digital financial innovations that are technology or business model driven is provided through either a FinTech startup, established financial institution (incumbent), or BigTech firm (Deloitte, 2017a; EBA, 2018).

Within finance, technology-driven change is imminent, and therefore, it brings great potential for disruption (Poensch, 2017). FinTech is arguably recognised as one of the most outstanding innovations in the financial industry and is evolving rapidly (In & Yong, 2018). The emergence of both new technologies and changing customer behaviour enables FinTech providers to break up the status quo through offering optimised services and solutions to customers that are faster and cheaper than the ones offered before (Deloitte, 2017a). These innovations empower the reshaping of the financial industry, creating a more diverse and stable financial ecosystem (In & Yong, 2018),

and simultaneously bring together both benefits and risks. FinTech is centred around different academic disciplines, and therefore require contributions from each of the related study fields that are brought together (Puschmann, 2017).

As noted by Haddad and Hornuf (2018) FinTechs can be categorised into different categories that engage in, e.g. financing, payments, asset management, insurance, loyalty programs, risk management, exchanges, regulatory technology, and more. One can argue that each financial, technological innovation fits into one of the aforementioned categories, though due to the rapid development of new applications it is difficult to anchor them into resolute groups, also since many overlaps exist between these categories (KPMG, 2019a; Accenture, 2016; Bunea, 2016). Thus, within the academic and professional field, many different names and groupings are utilised to categorise the wide span of innovations. Nonetheless, each of the FinTech developments debatably fit into one of the following banking-related industry segments, which are: Asset and Wealth Management, Banking, Insurance, or Transactions and Payment Services (PwC, 2017).

A comprehensive framework is designed by Puschmann (2017), which enables one to understand the different dimensions of FinTech. Within the framework, three dimensions are existent, namely, the innovation degree, the innovation scope, and the innovation object. Regarding the latter, innovative financial solutions are closely connected with five objects that include: products and services, organisations, processes, systems, and business models. According to Puschmann (2017), innovations generally differ between these objects. Aside, Puschmann (2017) implies that technology in general and FinTech especially can have different performance effects that can either be incremental or disruptive. Incremental changes lead to the optimisation of current products and services in terms of quality, time, and cost whereas disruptive changes can significantly reorganise the status quo and can in later stages of their evolution lead to fundamental changes in the entire value chain (Bower & Christensen, 1995). Lastly, in terms of the scope of Fintech innovations, they can be distinguished between in two perspectives, the scope can either be intra-organisational or inter-organisational scope. The former relates to innovations that primarily focus on internal, microeconomic changes of innovation objects in one of the five categories, as mentioned earlier. While the latter focuses on macro-economic structures with changes in the value chain (Puschmann, 2017).

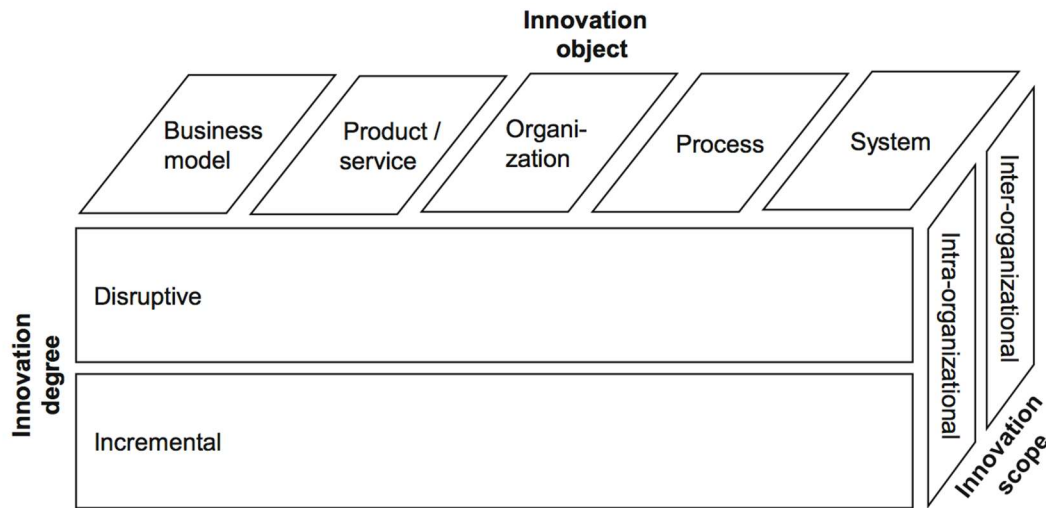


Figure 1: Dimensions of FinTech (Puschmann, 2017)

2.1.2 Drivers of the FinTech ecosystem

First of all, before elucidating the elements that drive the FinTech ecosystem, the paper will outline the main participants within the ecosystem. The so-called FinTech ecosystem exists of five core participants as described by In and Yong (2018). These authors have identified that these participants are FinTech startups, technology developers, governmental institutions, financial customers, and financial institutions. These actors contribute not only to innovation and economic development but also facilitate collaboration and competition, which ultimately benefits consumers in the financial services industry (In & Yong, 2018).

The confluence of drivers behind the emergence of FinTech as specified by the (Financial Stability Board, 2017), relate to a multitude of factors. Firstly, a changing customer behaviour, particularly millennials find the provision of financial services increasingly important in regards of speed, convenience and cost, since this generation is part of a group that has been exposed to digital technologies for most of their lives. Secondly, economic development, which facilitates the adoption of (new) technologies, also in emerging markets, which in turn opens pathways to new business opportunities. It arguably also changes local customer preferences in newly exposed regions. Thirdly, evolving technologies can also be regarded as a noticeable driver of innovation

within the financial services, especially related to the development of the ever-evolving internet and mobile related capabilities, as well as computing power. Lastly, regulation is also regarded as an important factor of change in the ecosystem, mainly since government involvement is progressively altering (business) regulations, related to privacy laws, policy setting, product registration, taxes, and other restrictions (Strategy&, 2015).

Moreover, business opportunities also affect the FinTech movement, as this is partly driven by new entrants that can offer more cost-effective solutions to customers, and partly by new markets that become exciting places to do business in due to economic development. These firms identify new opportunities through either the changing role of regulation, changing customer behaviour, or more efficient technological solutions. Further, FinTech can also empower enterprises to cut out intermediaries, and can consequently be more cost-efficient in certain circumstances (Financial Stability Board, 2017). This overlaps with Gomber et al.'s (2018) statements, who claim that within the FinTech ecosystem there are three core drivers, namely, technological innovation, process disruption, and service transformation. According to Gomber et al. (2018), technological innovation should be seen as the main engine behind economic growth and industrial transformation. They also believe that embracing disruption is critical to effectuating cutting-edge innovation, and states that this should be done through integrating disruptiveness into organisational strategies. Despite these being the main pillars that drive change within the FinTech ecosystem, Gomber et al. (2018) and Strategy& (2015) argue that the availability of capital is critical to unfold future-forward development and business model transformation.

On top of that, Haddad and Hornuf (2018) examined it from a different perspective and observed economic and technological determinants that also originate this movement. They found that economically well-developed countries experience more FinTech disruption by the higher frequency of startup formations in combination with higher availability of venture capital. Potentially also due to better internet infrastructure, and availability of talent. In connection to that Strategy& (2015), and Haddad and Hornuf (2018) emphasise that access to both talent and financial expertise is also crucial to develop innovative ideas, and should both be considered as critical factors. In other words, they deem that attracting and retaining talent is key to creative business development and to benefit working environments. A labour force requires proper

education to develop the right skills, thus it is argued that businesses should attract international talent that brings along diversity and new perspectives Haddad and Hornuf (2018). Accordingly, the same authors encapsulate that to bring about financial innovation, FinTechs, Incumbents, and BigTech firms should be aware of these drivers within the FinTech ecosystem.

2.1.3 Banking & FinTech

There are several approaches to how the banking industry deals with FinTech. PwC (2017) argues that FinTech and financial services firms compete less and focus more on coming together. According to their research, 80% believe that their current business is at risk if they do not anticipate. A striking 88% of the questioned incumbents within the survey are increasingly concerned about losing revenue stream to innovators. Consequently, about 75% of the incumbents will increase internal efforts to innovate by learning to partner with innovators and integrate new services into their business models. In line with this, many of the incumbents aim to increase their collaboration with FinTech and thus establish partnerships in the next to three to five years (PwC, 2017). For specific reactions of banks towards the topic FinTech see Chap. 2.3.

2.1.4 Regulatory environment

Historically, the banking industry has been ruled by major financial institutions, but the emergence of FinTechs has markedly altered the landscape and increased awareness from regulators (Long, Steiner & Springer, 2018). Persisting a safe and secure banking sector is arguably crucial to regulators and society as a whole, as it protects the overall stability of the financial system (Financial Stability Board, 2017). In other words, the growing use of FinTech solutions and emerging technologies bring along certain risks to which regulators and supervisors are responding. Subsequently, governments have introduced new FinTech-related regulatory initiatives that appeared for the most part after the 2008 financial crisis (In & Yong, 2018). Regulation differs per nation, as it is contingent on the degree of national economic development plans, as well as on economic policies (In & Yong, 2018), and Navaretti, Calzolari, Mansilla-Fernandez & Pozzolo (2018) argue that regulation is practically a trade-off between competition and financial stability. According to Arner et al. (2017) jurisdictions around the globe act and react in different ways, where some do impose strict regulation and supervision, others do not, e.g. in the form of structured sandboxes. Accordingly, EBA (2017) reports that European jurisdictions

respond differently to FinTech innovation. The EBA divides the different approaches into separate categories that include sandbox regime, innovation hub, and other approaches, as illustrated in figure 2.

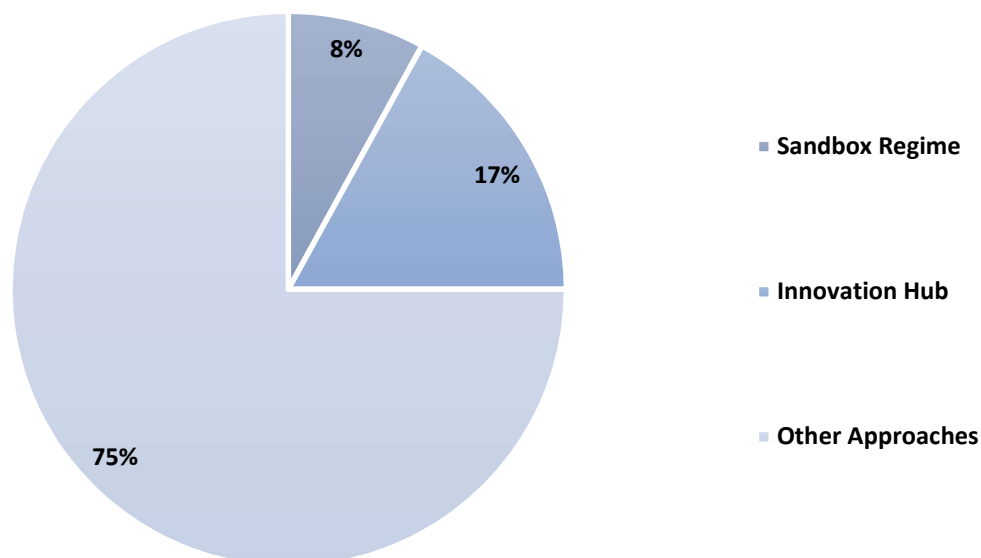


Figure 2: FinTech policy approaches in the EU (EBA, 2017)

First of all, the so-called sandbox structured regime enables companies to test products or business models in an open space. This can nurture innovation and concurrently enable new entrants to establish their business, without being exposed to an abundance of rules and regulation. Thus, in other words, regulatory requirements are relaxed to allow innovative players to experiment and grow quickly (Navaretti et al, 2018; Ringe & Ruof, 2019). As stated by Ringe & Ruof (2019) the first regulatory sandbox was introduced in 2015, and presently there are 17 sandboxes established worldwide, and among them, three of these sandboxes are located in the EU, including Denmark, the Netherlands and the UK.

Secondly, Innovation hubs are somehow comparable to sandbox regimes but provide direct support to companies that aim to develop new products that are in line with FinTech innovation. These hubs help FinTechs to understand the applicable regulatory requirements in the country (EBA, 2017). The reason why innovation hubs and sandbox regimes are not universally practised relates to the basis that both they are resource-intensive and bring along risks in connection with

regulatory capture or group interests. The latter two refer to an economic theory which asserts that regulation is acquired by the industry and is primarily designed and operated in their own benefit (Stigler, 1971; Olson, 1965). This could mean that FinTechs and incumbents, increase the likelihood that they start to operate in a way that deviates from the socially optimal objectives, since supervisory institutions dispossess their standard measures to control the public interest and financial stability (Boyer & Ponce, 2012). Another challenge that needs to be addressed relates to the fairness of competition between incumbents and FinTechs that could arise between counterparties that are in-or-outside the sandbox or innovation hub (Ringe & Ruof, 2019). This also means that Incumbents, FinTechs and BigTech firms may see different kinds of regulation and supervision in internal markets (KPMG, 2019b).

Moreover, moving further towards the behaviour of FinTechs that are subject to different regulatory conditions, Accenture (2016) studied that whenever regulation is favourable for FinTech startups to establish their business, they tend to be less collaborative with incumbents. In contrast, whenever the opposite is the case, this results in more collaboration between startups and incumbents, which can be observed in the US market according to Accenture (2016). This effect is demonstrated in the study by displaying collaborative investment figures trends between the EU and US market in the years 2010 and 2015.

Moreover, according to EY (2017a) financial institutions are eager to assess the applicability of FinTech, but are often constrained by regulatory uncertainty that is caused by the disruptiveness of new and unconventional technologies or business models. In line with this incumbents, FinTechs and BigTech firms may see different kinds of regulation and supervision in an internal market (KPMG, 2019b). However, as reported by Deloitte (2017b), recent industry developments potentially blur the boundaries between FinTechs and other financial institutions, since FinTechs could offer comparable services to those of incumbents. Consequently, some FinTech companies leave behind the status of not being a financial institution to compete more broadly and bypass discordant regulatory conditions. On the other hand, financial incumbents are leaning more and more towards integrating FinTech capabilities into their business model to address new customer segments, particularly towards the more tech-savvy customers. This trend can be identified by arguing that incumbents need new approaches to drive change and deliver innovation (PwC, 2017).

Furthermore, PwC (2017) examined the main hurdles innovative incumbents face and mentions that these include data storage, privacy, and protection in connection with regulation and supervision, as new regulatory initiatives in the EU financial market include for instance Payment Services Directive 2 (PSD2). This adoption enables banks and third-party providers to share customer data through *application programme interfaces (APIs)*. The EU has been pro-active on this front, establishing the rules of engagement through the PSD2 (McKinsey, 2017). Conforming to this, Deloitte (2017b) reports that EU legislation starts being transposed into national law as of January 13th, 2018, and argues that “PSD2 is arguably the most disruptive event to hit retail banking in decades“ (Deloitte, 2017b, p.39).

2.1.5 Development and the current state of FinTech

As previously mentioned, the financial services industry has been growing consistently, and FinTech development can be characterised rapid change and the high number of new entrants (Arner, 2017). According to Accenture (2016), corporates, private equity firms, venture capitalists, and angel investors have invested significantly into FinTechs, as more than €45 bn. has been invested in almost 2500 companies since 2010. Though according to more recent research from KPMG (2019a) who states that global investment in FinTech companies reached around €100 bn. only in the year 2018, which significantly surmounts investment figures from prior years. As displayed in the graph below, the industry has been growing in terms of deals and investment figures over the years 2013-2018. This illustration shows the year-over-year growth in both volume and aggregate value of dollars invested across all private investment transactions.

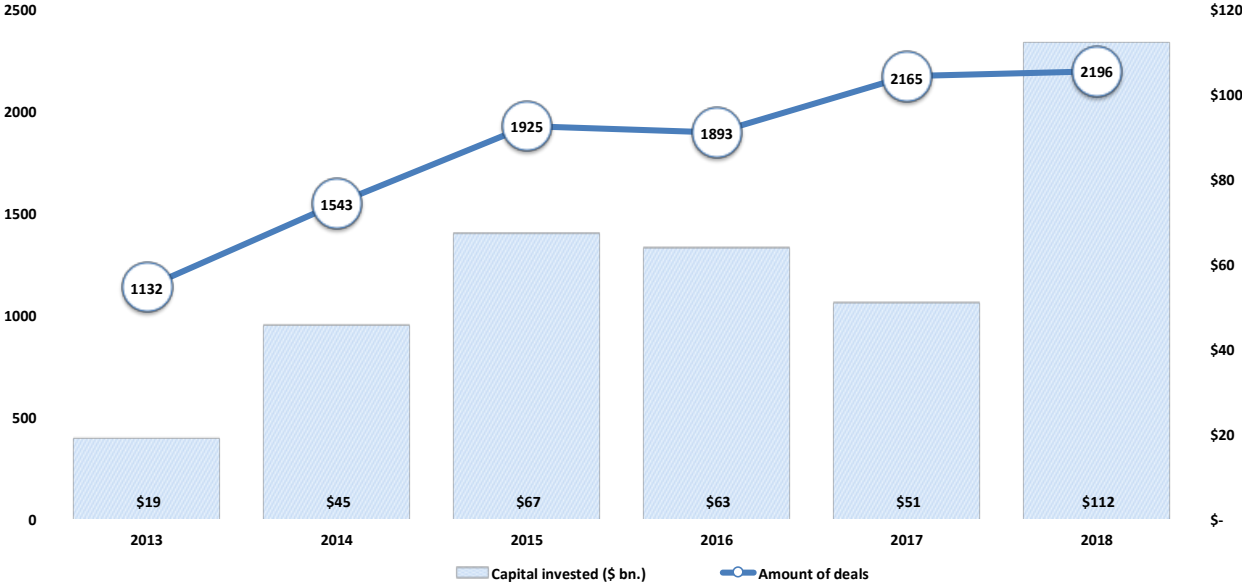


Figure 3: Total investment activity in FinTech globally (2013-2018) (KPMG, 2019a)

This displays the healthy growth of FinTech sector overtime in terms of investment and deal activity. North and South American market combined represent the most substantial FinTech investment figures, as well as the number of deals in 2018, with respectively \$58 bn. and 1245 transactions. Adding to this notion though, that from this finding a substantial part is derived from the US market all by itself. Considering that in 2018, US FinTech companies received an investment of \$52 bn. across 1061 deals, which notably signifies the most active global FinTech investment activity. When in fact, in the same year, investment in FinTech companies in Europe hit \$34 bn. with 536 deals. This depicts a relatively smaller industry, but it arguably also emphasises the potential for growth to come (KPMG, 2019a) In line with PwC’s (2016b) study FinTech disruption will likely transform the consumer banking sector and fund transfer & payments sector the most in the year 2020. Furthermore, Deloitte’s (2017b) expects the FinTech investment market to grow 55% annually. According to Navaretti et al. (2018), the United Kingdom hosts the largest proportion of investments in European FinTech companies.

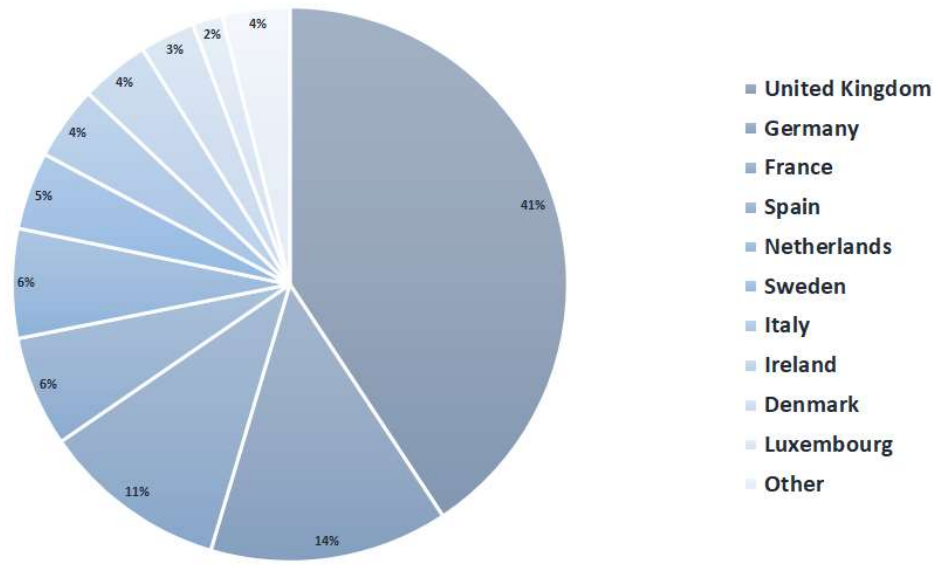


Figure 4: Investment share in European FinTech sector (Navaretti et al, 2018)

2.1.6 FinTech in the Nordics

The Nordic region has depicted significant investments in the development of FinTech. As reported by Deloitte (2017b) FinTech shows to be the most rapidly growing branch of startups in the Nordic region, even though according to FinTech Global (2018) investment in FinTech companies in the Nordics is going to decline slightly in 2018. The decline can be clarified through the fact that some exceptionally large deals have been executed in the year 2017, as the two FinTechs *iZettle* and *Klarna*, respectively raised \$155 m. and \$225 m. in 2017 across many deals (FinTech Global, 2018). The graph below illustrates the development within the Nordics. Continuing on this line, larger capital transactions decreased in 2018; nevertheless, the amount of smaller capital transactions and deals continued to grow. This cannot be discerned in Figure 5, but it does indicate the strength of the FinTech ecosystem in the Nordics as displayed in FinTech global's (2018) publication.

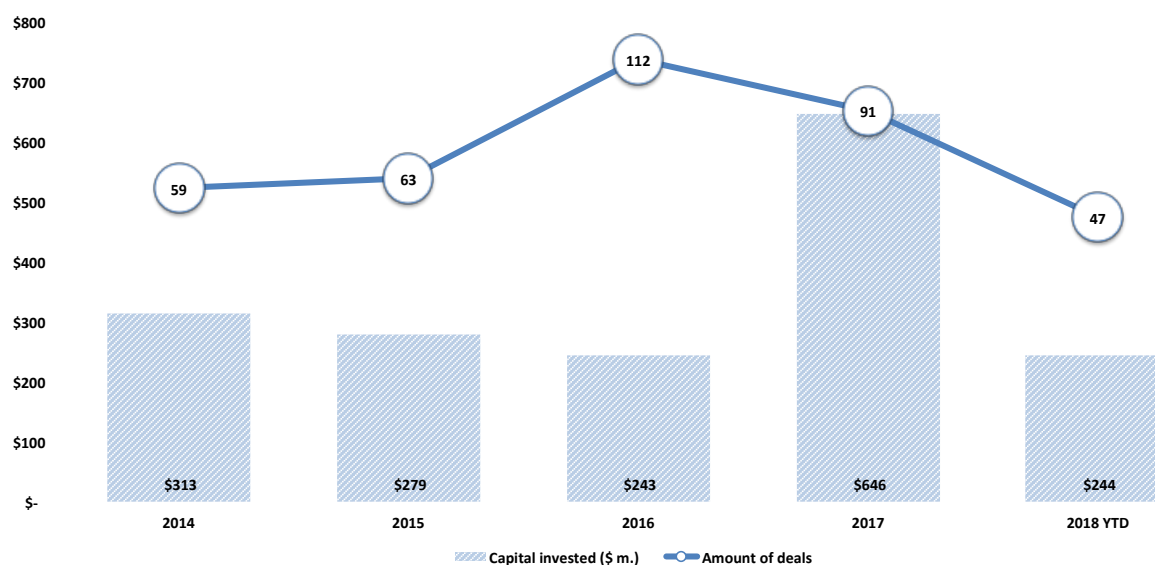


Figure 5: Total investment activity in the Nordic region (FinTech Global, 2018)

As displayed, the Nordic FinTech market is developing, taking into account that the industry consists of several hundreds of FinTech startups that are active in a multitude of banking sectors, e.g., funds transfers & payments, wealth and asset management among others.

As previously discussed, regulation plays a crucial role within the financial services industry, in terms of collaboration, investments competitiveness, and the speed of innovation. The Nordic FinTech sector consists of several countries that carry out different regulatory frameworks. According to Deloitte (2017b), in the Danish financial market, it can take FinTechs up to 18 months to obtain a license and conduct business. Besides, the costs are close to €1 m. for FinTechs to come into existence. In Finland, establishing a FinTech company may take up to 1 year, and next to that it also may cost over €100k. Deloitte (2017b) argues that the reason behind this relates to the extensive due diligence process and the fact that FinTechs in these financial markets are required to comply to same regulations as the traditional financial institutions, however only if the nature of the respective business models are equivalent to the incumbents'. Nordic markets arguably try to increase support and provide regulation consultation for FinTechs. Deloitte (2017b) mentions that particularly Sweden is at the forefront of distributing information actively, when in fact authorities in Norway and Denmark have notably been more reluctant and have not provided much-targeted support.

2.1.7 Future and trends

It is evident that the constant emergence of new technology is affecting the financial industry in a multitude of ways, and all these different technology-driven innovations are contributing to ensuring that organisations remain competitive (Capgemini, 2018). According to PwC (2016b), ten key themes are notably responsible for vigorously altering the financial services landscape in the upcoming time. These innovations essentially spur a new wave of transformation raptured through intelligent automation, data-driven compliance, and deeper customer insights (Capgemini, 2018). Further, PwC (2016b) believes that this transformation phase can unfold new business models, and argue that the so-called *sharing economy* will be embedded to a much larger extent into the financial system. This concept represents decentralised asset ownership and usage of information technology to reach more efficient connections in a peer-to-peer format between providers and users of capital. Fundamentally, services and products that are offered will become more entirely digitalised and provided through enhanced technological platforms. Meanwhile, *blockchain* technology is believed to have the power to turn the established system upside down, principally through automating trust within the transaction infrastructure (PwC, 2016b). *Blockchain* can alter the financial services industry's infrastructure by becoming less costly, and by facilitating automated contractual agreements among other features. (PwC, 2016b) However, for *blockchain* technology to be implemented on a large scale, the main challenge that lies ahead concerns the migration of trust from today's effective-yet-expensive central counterparty utilities into a distributed model (PwC, 2016b). On another note Bhat, Krishna and Santhana (2018) attempt to make a similar statement by arguing that within the financial services industry there are a lot of ways in which this technology can improve overall performance through the increase of transaction speed and transparency.

Furthermore, by 2020 it is expected that a strikingly higher amount of data will be available, and consequently, it represents an excellent opportunity for organisations to embed customer intelligence to predict revenue growth and profitability (Gantz & Reinsel, 2013). Besides, according to PwC (2016b) *robotics*, *Artificial Intelligence (AI)*, and *machine learning* will gradually instigate an upsurge of automation within financial services processes. The industry is expected to integrate new efficacious capabilities into a multiplicity of business activities. In essence, *robotics* and *AI* can set in motion alliances between incumbents and technology

companies to address key business facets by reducing costs and mitigating risks. *Robotics* can optimise an organisation's operations by constructing cognition, manipulation, and interaction capabilities to alleviate technological hurdles. Moreover, *AI* can be used by banks to spot abnormal behaviour and detect fraud and is expected to gain a more prominent role in connection to the automation of business activities.

Aside from these automation opportunities, the cloud is also expected to play a more dominant role, as general data storage costs have dropped immensely over the last years, facilitated by cloud-based infrastructure. This infrastructure enables banks to more effortlessly control *big data*, utilise *Business Intelligence (BI)* and analytics tools. Synchronously, it has also lowered the barriers to entry for new FinTech disruptors (PwC, 2016a). Aside from that, *open banking* is acknowledged by some industry experts to inescapably contribute to the further evolvement of FinTech disruption, particularly in line with the EU's newly enforced PSD2 regulation (McKinsey, 2017; Swedbank, 2019). *Open banking* can essentially be described as a collaborative model that enables to share banking data through *APIs* between two or more external parties, to achieve enhanced data-sharing, which in turn open-pathways for new capabilities to the marketplace (McKinsey, 2017).

Furthermore, cyber-security is gaining a more important role and can be regarded as one of the major risks opposing financial institutions. At present, the increasing role of the *Internet of Things (IoT)* originates new security threats that require thoughtful attention (PwC, 2016a). The proliferation of cyber-attacks, privacy concerns, and device management innervate organisations to better control and monitor activities. Especially Anti-Money Laundering (AML) and Know Your Customer (KYC), Counter-Terrorist Financing (CFT) and compliance efforts are crucial in regards to fight money laundering and terrorism financing. Furthermore, Asia is expected to emerge as the main hub for technology-driven innovation. According to KPMG (2019a), the collaboration between FinTechs and banks in Asia is expected to grow extensively, especially in the areas of KYC, AML, and authentication.

At last, according to Bhat, Krishna & Santhana (2018) argument the next trends that will emerge between startups and incumbents is a potential surge of partnerships and industry alliances. From

their statements, one could imply that this is one way to work out implementation kinks broaden and the adoption of new technologies. This argumentation relates to the importance of finding connections and finding areas to collaborate on together, as this can be key to enhancing relationships with customers, improving the customer's experience, and help the FinTech become more mature.

2.2 The Banking Industry

Having examined the various implications of FinTech, how they shape today's and most importantly the financial world of the future and how customers perceive it, the following subchapters will focus on the traditional and established banking sector in general, the Nordic banking sector in particular, and disclosure customs in financial reporting. Due to the practical implications of the topic and the requirement of relevance to the current state of the industry, mainly professional publications such as market reports and presentations were used in these sections, as opposed to purely academic material.

2.2.1 Industry characteristics

A reliable and efficient financial system is of vital importance for any economy and a country's or region's prosperity. In this financial system, banks are the most integral part and the largest group with regards to total asset and liabilities (Sveriges Riksbank, 2016). There are three main functions when it comes to examining banks' tasks in a financial system: they convert their customers' savings into funding, they create conditions to process an economy's payments and manage all risks associated with liquidity and capital (Svenska Bankföreningen, 2018a; Levine, 1997). As banks provide these services to the economy as a whole, it is not possible to clearly define the specific customer groups of banks or a relevant market; rather it has to be stated that banks serve the entire economy with a multitude of products (Bikker & Haaf, 2002). Castellanos and Garza-García (2013) add that banks fulfil the role of efficiently allocating capital within an economy and help in solving and overcoming moral hazard and adverse selection problems by monitoring and screening borrowers and debtors and information asymmetries, as emphasised by Beaty and Liao (2014). Castellanos and Garza-García (2013) argue for banks to be an integral part of industrial expansion and economic growth by allocating capital and providing their service and knowledge as described above, a notion that is supported by Berger, Demirgüç-Kunt, Levine, and Haubrich

(2004). Levine (1997) states that opposed to the common belief of the financial system being passive and only reacting to the overall economic development, its perception has radically changed towards acknowledging that financial markets and their developments are crucial to the well-being and development of an entire economy. In the following, the author even argues for well-functioning banks amplifying technological innovation by “identifying and funding those entrepreneurs with the best chances of successfully implementing innovative products and production processes” (Levine, 1997, p.668), which becomes especially significant when considering the scope of this paper and the previous chapter. Additionally, banks themselves are not only providing the necessary funding for innovation but can be characterised as significant drivers of technological advancement themselves, as they continue to invest in technology and implement digital services that lay the path for other industries to follow (EY, 2018; Deloitte, 2018). In a 2018 survey, EY found that 85% of all banks are in the midst of implementing digital transformation programmes, further displaying the sectors willingness to contribute to the digitalisation of economies and societies.

2.2.2 The banking industry in the Nordics

The Nordic banking sector, in particular, is characterised by being dominated by a few major players that make up the majority of the entire market, even raising questions regarding a possible lack of competitive pressure (Svenska Bankföreningen, 2018; Danmarks Nationalbank Suomen Pankki, Seolabanki Islands, Norges Bank, & Sveriges Riksbank, 2016). These major players are Swedbank, Handelsbanken, and Skandinaviska Enskilda Banken (SEB) of Sweden, DNB from Norway, Danske Bank from Denmark, and the multinational Nordea, which is headquartered in Finland, all being full-service banks offering close to every existing banking product and operating not only in their home markets but internationally as well (Svenska Bankföreningen, 2018b). In 2018, the Swedish Bankers’ Association conducted a study regarding the competition in the Nordic banking sector, focusing especially on the Swedish market as the most significant one but also considering other Nordic markets. Results indicated that there indeed is the possibility of a lack of competition in most of the markets analysed when compared to other European countries and their banking sector. Notably, both the Finnish as well as the Danish market scored rather high on most categories displaying a high market concentration whereas the Swedish market can be described as average in comparison and the Norwegian market is characterised by a slightly lower

concentration hence higher competition within the market (Swedish Bankers' Association, 2018). Nevertheless, the authors conclude that overall the notion of uncompetitive and too highly concentrated markets in the Nordics can be rejected as there is still sufficient (international) competition present, which can also be backed by the fact of comparably low-interest costs for private and corporate customers (Danmarks Nationalbank et al, 2016). This is integral when further analysing the banking industry in the Nordics, especially with regards to adapting to outside competition and new entrants to the market, such as FinTechs, which arguably could be of lesser interest to banks if they do not fear competition and therefore see no need to constantly upgrade their setup.

Another characteristic of the Nordic bank industry worth mentioning is its drastic transition in the last decades. Andersen (2011) describes how Nordic banks up to the Nordic banking crises in the 80s and 90s of the previous century were not yet integrated financial institutions offering more than the traditional bank products but instead acknowledged the sharp distinctions between insurance companies or brokerage firms. Just recently, they have become multi-purpose institutions with integrated product portfolios comprising any service related to the financial market. Due to this rather late development and the *quick adaptors* they are, Nordic banks have been able to integrate digital services right away in their new product categories when compared to other established European or North American banks and nowadays are digital pioneers with cutting-edge technology leading the global digitalisation in financial services (Danmarks Nationalbank et al, 2016; Schwartzkopff, 2018). In a study by the five Nordic national banks, the authors furthermore stress the stability and in general positive development of the banking sector and mainly accredit this to the stable economic performance of the region as well as the robust and sound business models of the respective companies, who because of that were not as severely hit by the global financial crisis as their Western European counterparts (Danmarks Nationalbank et al, 2016; Milne, 2018). Nevertheless, when examining very recent development in the sector, it has to be noted that Nordic banks do not appear to be invulnerable when it comes to weak performance and public scandals, even though they might not be affected by those factors as often. In his articles for the *Financial Times* Milne states that “Nordic banks were seen as the stars to emulate after the global financial crisis [...] but now [they] are under pressure amid a growing number of allegations” (Milne, 2018). Examples of these allegations include Danske Bank and

Swedbank being in the midst of “one of the largest money laundering scandals ever seen” (Milne, 2018 & Milne, 2019b), Nordea facing several compliance issues and sanction breaches (Milne, 2019a), or Handelsbanken, who UK regulators found has “serious weaknesses in combating financial crime” (Milne, 2018). As of today, the investigations on the majority of the cases have not been closed yet, but Kline (2018) assumes that it might, in fact, be the regions perceived honesty and high levels of trust and missing control mechanisms allowing those crimes to happen by simply not expecting and envisioning Nordic banks to possess this kind of criminal energy.

To put the Nordic banking sector into perspective, in the following its size and significance will be presented and compared to European competition, always keeping in mind the relatively small size of this economic region with a population of approx. 27 million. When only looking at the structure of the financial markets and how they are divided into the different types of credit institutions, there is no significant difference with regards to shares of total banking sector assets: national credit institutions hold around 75 to 90% of the total assets within the sector, which is similar to what can be observed in other markets in the European Union (Danmarks Nationalbank et al, 2016). The only exception here is Finland, where subsidiaries and branches from other Nordic countries hold the majority (60%) of the assets and the national central bank only holds the remaining 40%. However, when it comes to investigating profitability, Nordic banks appear to have a considerable edge, with returns on equity being approx. 18% in the Nordics and only 12% in the rest of Europe (Danmarks Nationalbank et al, 2016). This can be explained with the consequent and rapid rationalisation that took place after the Nordic banking crises in the 1980s and 90s through fundamental restructuring processes (Danmarks Nationalbank et al, 2016). In a 2013 report, the International Monetary Fund evaluated the entire Nordic economic region and among other things analysed the financial sector. The report concluded that the Nordic banking sector is large with respect to GDP: whereas Swedish and Danish banks, for instance, hold assets that are worth three to four times their country’s respective gross domestic product (GDP), the average range in their European counterparts is usually rather one and a half to two times a country’s GDP.

Overall, it may be said that the Nordic banking sector can be described as a competitive and significant market in the countries due to their size. Furthermore, the dominant banks have used

their position to create a highly profitable and digitally advanced environment making the sector a global forerunner in digital innovation.

2.2.3 Financial reporting (in banking)

Having analysed the banking sector and characteristics specific to Nordic banks, in the following companies' disclosure practices in (financial) reporting will be examined, which according to Rutherford (2015) may include interim reports, preliminary announcements, analyst presentations, corporate web sites, media releases, direct contact with large investors, and, most notably, the annual report.

As stated by Erickson, Weber and Segovia (2011), financial reporting “provides information to various users for their analysis of the firm’s performance and assists in their business and economic decision making” (p.209), as the health of an organisation is not only assessed through its financial statement but additionally by examining the background information provided in e.g. the annual report or company presentations. It has to be noted that in the following, due to the nature of the study of this paper, only qualitative information will be considered and analysed. Gibbins, Richardson and Waterhouse (1990) define financial disclosure “as any deliberate release of financial information, whether numerical or qualitative, required or voluntary, or via formal or informal channels” (p.122) and acknowledge that the extent of disclosure varies among firms when it comes to timing, disclosed items, other news specific to the respective company, and also cultural background. They furthermore add that organisations often face the dilemma of on the one hand disclosing too much proprietary information, thereby possibly endangering the ability to exploit a competitive advantage in the future, and on the other hand aiming at enhancing the firm’s value and displaying it in the most positive way possible. Smith and Taffler (2000) state that even though financial reporting is often perceived as merely being advertisement and platforms for company philosophies, it is still used by the most notable market participants, e.g., when analysts conduct a company report and a corresponding stock performance forecast and recommendation to buy/hold/ sell. From a regulator’s perspective, the Financial Accounting Standards Board (2008), being responsible for setting and developing international accounting and financial reporting standards, demands financial communication to fulfill the rather broad and hard to be controlled for criteria

of being ‘useful’ and ‘comprehensible’ to (potential) investors so that reasonable conclusions can be drawn from the information presented.

Having consulted numerous sources of literature on the topic of financial reporting, the conclusion can be drawn that annual reports are by far the most significant part of a firm’s disclosing policy, which is why in the following this document will be considered exclusively. Anwar (2015) and Gray, Kouhy and Layers (1995) accredit the increased importance of annual reports to the ever-growing demand for information and transparency from both shareholders and regulators. This leaves the company with the opportunity to create an overall favourable atmosphere in the text, managing the impression readers develop (Hooghiemstra, 2010). However, this independence might also result in a self-serving attributional bias where good performance is accredited to internal causes such as strategy or investment decisions in the past and blaming the external environment and other factors beyond the company’s range of control for bad performance (Clatworthy and Jones, 2003). Due to the regulation being rather loose and companies exploiting this by using it as an additional place for advertising the company and its management, in 2010 the International Accounting Standards Board issued a statement regarding Management Commentary, providing a framework for the presentation of management commentary that relates to financial statements (IFRS Foundation, 2017). Although non-binding, it was revised and updated in 2017, thereby not eliminating the possibility that it might become more sophisticated and even binding for, i.e. listed companies in the future. Management Commentary in this regard includes all prose text that is not directly concerned with the presentation of financial figures.

2.2.4 Financial reporting in the Nordics

On a side note to the aforementioned, the disclosure of information related to corporate social information, which refers to the extent of information provided by companies related to their aspirations, activities, consumer issues, employees, and public image, relies on the firm’s country of origin as suggested by van der Laan Smith, Adhikari and Tondkar (2005), although there has been no generally accepted theoretical basis to explain this phenomenon. Morris and Tronnes (2018) argue that little has been known previously about voluntary strategy disclosure in annual reports, in spite of the importance of strategy in understanding a firm’s performance.

Connecting these findings specifically to the Nordic region, and in order to seek further incitement to study this region in particular, van der Laan Smith, Adhikari and Tondkar's (2005) study, where they analyse the content of annual reports, illustrates that large firms from Denmark and Norway, which partly represent the Nordic region, have a higher level of quality regarding corporate social information than US companies. Additionally, Chaminade and Johanson (2003) state that in spite of efforts from several governmental and non-governmental institutions to influence disclosure practices, one can argue that they are affected by regional cultures. To exemplify this, their study shows that southern European countries have a stronger fear of competitive disadvantages when disclosing information related to explicit organisational knowledge, business designs, business processes, patents, and trade secrets among other factors than Nordic countries. Thus, the Nordic countries are arguably more sensitive to the importance of the disclosure of information in annual reports, and positively reflect this in terms of both quantity and quality. Further contributing to this notion, the European Commission found in a study in 2006, that annual reports of Nordic companies are of above average quality when it comes to the quality of disclosure and transparency in statements, making the Nordics rather suitable to conduct research on the basis of annual reports. Lekvall (2014) states that "the Nordic corporate governance model [and its reporting procedures] allows the shareholder majority to effectively control and take long-term responsibility for the company that they own" (p.13), further indicating the reliability of the annual reports, even labelling the approach "The Nordic Supermodel" (p.13). This is supported by the working group of the self-regulatory corporate governance bodies of the five Nordic countries (2009) who emphasises that "Nordic listed companies have in general been early to adopt high standards of transparency towards their shareholders" (p.12), making their annual reports as a primary source of shareholder communication a suitable basis for a study of the nature of this paper.

2.3 Responses to Disruptive Innovation

In order to be able to properly study the reaction of traditional banks to disruptive innovation from FinTech companies, at first different kinds of reactions have to be established so that they can be applied to this study in Chap. 4. EY (2017b) notes that banks are using a multitude of approaches to engage with FinTechs and the disruptive innovation they bring to the industry. According to former research, these reactions and responses can occur in different ways and are manifold: banks collaborate with new markets entrants or invest in them by acquiring stakes of FinTechs (EY,

2017b), they aim at developing suitable technology utilising their own resources (Accenture, 2016), they attract and retain talent with strong technological background and establish a culture embracing digital innovation (Arnold, 2018; Gomber, Kauffman, Parker & Weber, 2017), they retreat from threatened, low-profit business segments as they realise that they have fallen behind, or they execute a defensive strategy that aims at harvesting their current portfolio by optimising its performance and thereby blocking the entry of new entrants to this specific service (Wade & Shan, 2016). The variety of responses will be examined further in the following.

The least time-intensive and arguably fastest way to catch up on recent trends from startups in the financial sector is to invest capital in them, securing long-term access to the technology, or even acquire entire companies and fully incorporate them into an existing business model (EY, 2017b). In recent years, there have been several examples of large international banks acquiring partial or full stakes in FinTechs, namely *BBVA* of Spain, France's *BPCE*, or *Goldman Sachs* and *JP Morgan* from the US (Arnold, 2018; CBIInsight, 2018). In the Nordic market, SEB for example invested into Danish card and travel expense management company *Cardlay* through its venture subsidiary *SEB Venture Capital* in 2018 (SEB, 2018a). In a press release, SEB believes that it will "be able to offer our corporate customers new features connected to corporate payments with the ambition to simplify their work and save them time and money", displaying the ambition to quickly implement *Cardlay's* products into and thereby enhancing the bank's existing product portfolio. This demonstrates how established banks not having a certain technology in their portfolio demanded by customers use their size and capital to quickly absorb FinTechs into their own business model instead of risking to fall behind when trying to make up and develop the technology themselves. Already in Accenture's (2015) study, it was estimated that the direct investment in financial technology had increased by more than 200 % in just one year, the majority of the capital originating from established players in the banking sector (Gomber et al, 2017). More recent figures of KPMG suggest that the direct investment in FinTech will further grow in the near future, implying a significant market with regards to capitalisation and investment activity (KPMG, 2019, *Magna Carta and FinTech Mundi*, 2018).

As opposed to acquiring a stake in a FinTech company, banks regularly enter into partnerships with emerging startup companies, combining both services and capabilities to offer new or

improved products to their customers (Hedman & Henningsson, 2015). One Nordic example that displays how those partnerships can be designed is the collaboration between Danske Bank and Swedish FinTech *Minna Technologies*, who has developed a solution for an overview of all existing subscriptions a customer has. When announcing the partnership on their website, Danske Bank (2018a) states that *Minna Technologies*' solution "will be integrated into Danske Bank's new Mobile Banking app". This serves as a suitable illustration of a collaboration of an established player from the banking industry and an upcoming FinTech. As "customers have more and more subscriptions, which makes it difficult to stay on top of them all", Danske Bank was looking for a way to offer their customers a product that would allow them to manage those specific needs but at the same time did not have a specialised offer in their portfolio yet and presumably no plans to launch a new product/ add-on (Danske Bank, 2018a). Therefore, they decided to partner up with a FinTech that was already involved in this aspect and able to offer a finished product so that they could integrate it in the products Danske Bank's customers were already using in no time.

Another way for companies to cope with disruptive external innovation is to use their own resources in order to develop technology that enhances their service offering and thereby prevent customers from moving on to new competitors from the FinTech segment. Accenture (2018) defines four phases that banks should perform. First and foremost, digital basics need to be fixed. This includes migrating any existing physical network to an omnichannel digital portfolio. By implementing this a coherent customer experience is created, which might also prevent customers from changing their platform/ bank. Next, this omnichannel approach needs to enable a superior experience from a customer's point of view, meaning that the new portfolio is perceived as bringing added value to the customer by means of end-to-end customer experience, context-based offerings, and real-time responses. Following this, the focus should be on laying and enhancing the technical foundation. In the last step, this extended capability model needs to be applied to the new ecosystem that was defined in the first two steps. Having followed these particular steps, banks are able to transform their current operating model in a way that prepares them to compete with FinTechs and their fight for customers. Wade and Shan (2016) describe this approach in a slightly different way but nevertheless imply the same thing: they state that by optimising the performance of its current portfolio, banks execute a defensive strategy that aims at harvesting and thereby blocking the entry of new entrants for those specific services that they are able to optimise.

Similarly, established banks can focus on attracting and retaining talent with a strong technological background and establish a culture embracing digital innovation (Accenture, 2016). Already in 2015, Accenture (2015) stated that the banking industry could lose attractiveness to talented people who are best able to adopt innovation. Graham (2018) goes as far as claiming that tech companies such as FinTechs have become more attractive to graduates in both management as well as engineering. In order to return to the position of being the most attractive employer for graduates, as the financial industry has been used to for a long time, banks need to offer not only competitive salaries and bonus packages but also increase their traction with regards to being recognised as innovative companies leading the digital revolution of services. Graham (2018) lists decentralised teams or longer-term budgeting as possible add-ons to attract young employees. In a news piece for McKinsey, Arellano, D'Silva, Gabriel, and Potter (2018) label the 'war for talent' one of the most significant challenges ahead for the banking industry and accredit this mainly to "the fundamental transformation of capabilities", meaning that in order to digitally transform their business and remain relevant to customers, banks are being forced to integrate external tech-savvy talent so that they incorporate those new capabilities. Only then can a transformation succeed with regards to establishing a culture that embraces innovation from the inside of the company and regardless of the external pressure to transform (Arellano et al, 2018).

A last and rather defensive response to FinTech disruption is the possibility to retreat from threatened, low-profit business segments as banks realise that they have fallen too far behind and believe that they will not be able to make this up without a considerable amount of investment. Wade and Shan (2016) describe this approach as a "strategic withdrawal" that should be executed when "opportunity costs of maintaining [or growing] a business exceed the benefits" (p.3). Graham (2018) describes this response as what happens when banks acknowledge the inevitability of the unbundling of financial services and retreat back to their roots. This implies that banks instead of becoming conglomerates offering every new development in their own portfolio will turn into generalists and leave niches to highly specialised companies like FinTechs. When following this specific approach, banks can still work as 'enablers' by providing their infrastructure to FinTechs but without assisting in developing new digital offerings and services.

This rather general overview of possible responses of banks to FinTech disruption will be used as a foundation when analysing the reactions of the specific sample banks. Nevertheless, this background should not be restrictive meaning that during the analysis of relevant text parts from the annual reports other possibilities should also be considered and taken into account when relevant and applicable in the context of this paper.

3. METHODOLOGY

3.1 Mixed Method Research

In order to answer the research question of this study, it was decided to follow a mixed method approach, characterised by the use of both qualitative and quantitative data. Hammersley (2002) introduced several approaches to mixed methods research, and within this paper, the ‘triangulation approach’ is considered to be most applicable and best describes this study’s approach. The research is shaped by using quantitative research to corroborate the qualitative research (Bryman & Bell, 2011), which is precisely what will be performed in the course of this study. In the following, both research components and their specific implications will be presented.

3.1.1 Qualitative research

The core of the research executed in this study is qualitative analysis. This is concerned with the analysis and interpretation of words and fragments of text (Bryman & Bell, 2011). The process of analysing qualitative data is characterised by the relatively thick abstraction or description associated with this kind of data (Brekhus, Galliher & Gubrium, 2005). Meanings of text are depending on the interpretation and personal comprehension; words may have various or unclear meanings and therefore they should be clarified with great care (Saunders, Lewis, & Thornhill, 2012). A significant characteristic of qualitative research is the inductive view of the relationship between theory and research, meaning that theories are generated out of and emerge from the conducted research (Bryman & Bell, 2011). According to Bryman and Bell (2011), the process of qualitative research is to be initiated by formulating a general research question, followed by selecting relevant research subjects where relevant data can be collected from.

3.1.2 Quantitative research

To complement the qualitative research, the paper further provides a compendious quantitative study. In practice, some researchers according to Bryman and Bell (2011) argue that combining both quantitative and qualitative study techniques, which is called mixed method research, produces a more extensive and comprehensive understanding of a research area. In spite of this, not all writers on research methods agree that such integration is either feasible or desirable. It may seem a logical way to resolve and break down the divide between the two research strategies, “but

it is not without controversy” (Bryman & Bell, 2011, p.628). Still, according to Bryman (2009), the mixed method research approach has become more popular in the business research field.

The rationale behind choosing this additional method can be advocated by the belief that it improves the confidence in findings by the development of multiple measures. On account of the counter-argument that there is no point collecting more data only on the basis that ‘more is better’, the mixed methods research is here believed to harmonise and dovetail the research question and qualitative research (Bryman & Bell, 2011). Besides, in light of time constraints, it is arguably also too burdensome to study the complete sample size qualitatively over an extended longitudinal period of 5 years. Consequently, the benefit of adding the longitudinal quantitative study is that the research enables to plausibly detect supporting developments or changes in the characteristics of the sample (Bryman & Bell, 2011). The key here is that longitudinal studies extend beyond a single or double moment in time. As a result, it can establish sequences of events and identify potential patterns and trends; in other words, establish causality (Kimberly, 1976). Thus again, in essence, the quantitative study results complement the study in providing additional insights, to highlight potential patterns and trends in regards of the usage of wording that is used, through including extra observations of the same subjects over an extended time, with more intervals.

3.2 Template Analysis

The process of analysing the data followed the principles of the ‘template analysis’ as described by King (2014), which is also the approach that is followed within this study. Similarly, Brooks, McCluskey, Turley and King (2014) define the various steps to be carried out in template analysis in detail. To begin the analysis, a priori codes need to be established, they often consist of themes originating from the theoretical background that is strongly expected to be found in the data. Following the establishment of the a priori codes, researchers need to become familiar with the data to be analysed by reading through a relatively small data set, in the context of this paper this implies scanning the annual reports of the years 2014 and 2018 of one of the sample banks, preferably one of the larger institutions, as a higher quality and elaboration of disclosure can be expected. In this case, the annual reports of SEB were chosen. When scanning the annual reports, the a priori themes are tested against the data and might be modified in the process if they do not seem reasonable and/ or applicable to the data set. Consequently, this results in a coding template

that can be applied to the remaining annual reports (Brooks et al, 2014). It is essential to note that this initial coding template is subject to change and may be modified if necessary in case other themes emerge from the analysis of the remaining annual reports of the sample banks. Once more annual reports are analysed, a finalised template becomes apparent and can then be applied to the remaining pieces of data and also re-applied to the data analysed before if necessary (King, 2014).

3.3 Theoretical Framework

In order for the qualitative analysis to be carried out in a systematic manner, a theoretical framework needed to be developed. As explained in Chap. 3.2, the first set of categories describing banks' reaction to the emergence of FinTech was established from reviewing literature in Chap. 2, and these include **in-house development of technology, collaborations or partnerships, investments or acquisitions, or retaining or attracting of tech-savvy personnel**. Those templates were used in the following stages of the analysis when the annual reports of the remaining banks were consulted. This implies that findings were categorised according to the templates stated above.

In order to detect possible developments in the approaches of banks over a period of time, it was decided to analyse annual reports from both 2014 and 2018, in which the latter represents the most recent version. By including the annual report from 2014, the gap between the two years is not kept too big, thereby preventing the two types of annual reports from differentiating too much from each other. This is especially significant when considering the rapid pace in which FinTechs emerge and transform the landscape in the financial industry (see Chap. 2.1). On the other hand, analysing annual reports from two consecutive years might not result in significant detectable developments in banks' actions. Having started with the first set of four templates as described above, the analysis of further annual reports showed that those initial templates were reasonable and could be detected throughout the remaining annual reports, which resulted in the final theoretical framework, as displayed in Figure 6.

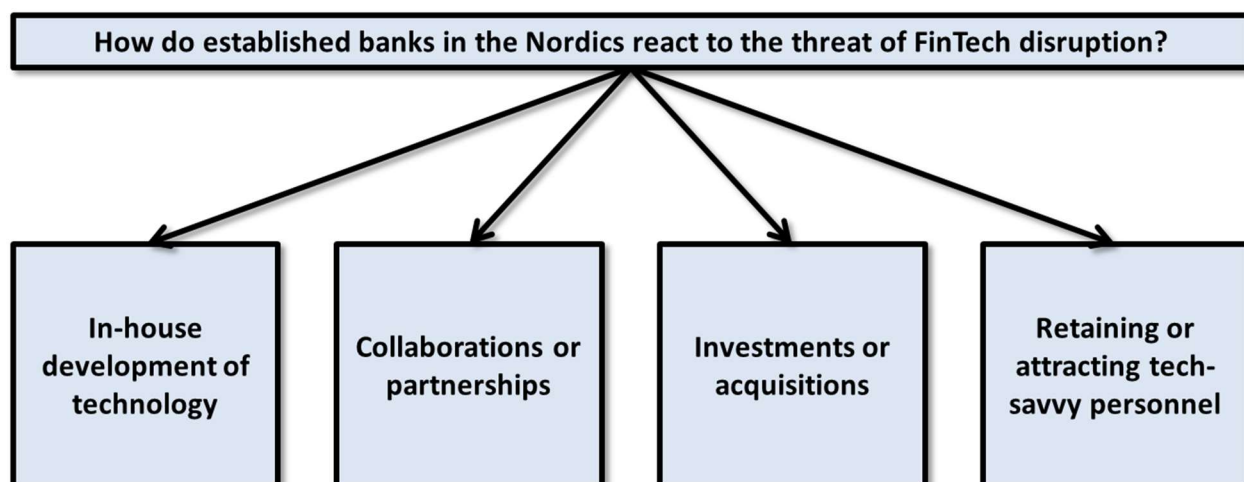


Figure 6: Theoretical Framework used to analyse the annual reports

In case text extracts from the annual reports fell into more than one category they were analysed more thoroughly and ultimately assigned to the category they could be connected to in the best suiting way with regards to the other results in this category. Furthermore, a distinction was made between concrete mentions, where banks mention explicit actions they already have undertaken or will in the future, and non-concrete evidence, where the exact action that will follow the announcement in the annual report is unclear. For the analysis, the concrete mentions were examined more extensively as they are more suitable to be linked to the possible direct influence of external FinTech. Still, interesting findings from non-concrete mentions were elaborated on if significant conclusions could be drawn from them.

3.4 Sample

Considering the scope of this paper, it was decided to follow a purposive sampling technique and set a threshold at € 60 bn. for total assets, which is a common key figure to compare the size of banks (Schildbach, 2017). This resulted in a sample of nine banks, representing Denmark, Finland, Norway, and Sweden. The chosen sample is believed to be representative of the Nordic banking industry as it is covering major countries and markets as well as the majority of the market due to the inclusion of its largest participants. In the table below, the largest banks of each Nordic country are listed at the top according to their size, followed by the remaining banks in the region that exceed the threshold. The amounts for total assets were calculated using the official exchange rates of the European Central Bank for 23.04.2019 (European Central Bank, 2019).

Table 1: Sample Banks

Bank Name	Country	Total Assets (bn. € in 2018)
Nordea	Finland	551
Danske Bank	Denmark	479
Handelsbanken	Sweden	283
DNB	Norway	273
SEB	Sweden	244
Swedbank	Sweden	213
Jyske Bank	Denmark	80
OP Bank	Finland	67
Storebrand	Norway	60

3.5 Data Gathering

Having established the relevant sample banks as described in 3.4 and 3.5, in a next step the respective annual reports for the years 2014 and 2018 had to be gathered using the sample banks' corporate websites. In order to structure the analysis of the data, a combination of pre-defined search terms and computer-assisted qualitative analysis was used. In the table below, the list of search terms applied to the annual reports is displayed, they were derived from common themes and most significant topics that could be detected when consulting the relevant literature in Chap. 2. All of them are in the thematic focus of the study and aim at covering all mentions in the annual reports that concern the research question of this paper.

Table 2: Search Terms

Search Term	Possible search results
technol*	technology, technological, technologically
digit*	digitalisation/ digitalization, digitisation/ digitization, digitalise/ digitalize, digitise/ digitize
disrup*	disrupt, disruption, disruptive, disruptor, disrupted, disrupting
autom*	automation, automate, automatised/ automatized, automatising/ automatizing, automatisisation/ automatization, automatisaion/ automatization, automation
innovat*	innovation, innovate, innovated, innovating, innovative
mobile*	mobile application/ payment/ solution/ banking/ service etc.
start up	-
FinTech	-
blockchain	-

Following the establishment of the relevant search terms, a self-written computer programme based on the programming language Python was used to conduct the analysis in a structured manner and extract relevant parts of the text without having to manually analyse every word of the annual reports, resulting in the collection of primary data which is characterised by the firsthand collection of data for a particular purpose (Persaud, 2010). The programme provided and extracted the search terms as well as the 100 characters before and after the respective term. By doing this, there was still a certain degree of context detectable when using the extracted data for analytical purposes. When an extraction was found to be significant with regards to the research question, the final step of the research was always conducted using the respective annual report itself to gain a broader understanding of the context the search term was used in. The search term was analysed with regards to the exact action it discloses. A minor part of the extracted text from the annual reports, e.g., from Swedbank, was by some means distorted since the text within these annual reports was layered and split into multiple columns on every page. As a consequence, the extracted data had to be adjusted according to its correct chronological order to some degree. Again, to ensure wording was put in the right order, the respective annual reports were always consulted.

Apart from this, the extracted data from SEB's annual reports were also partly flawed, as the spacing between the words was missing and all characters were connected.

It has to be noted that statements in the annual reports were taken at face value, meaning that no further interpretation regarding the perceived truth of a statement was performed, neither from a contextual nor from a rhetorical standpoint, as this would extend the scope of this paper. Supporting this argument, the ranking of the European Commission confirmed a high degree of truth and reputability in annual reports from Nordic countries in comparison to others (European Commission, 2006; Lekvall, 2014), making the chosen approach appear reasonable.

In addition to the support the Python-based programme provided for the qualitative analysis, use was also made of the word count function for the specific search terms. This feature was exploited by applying it to all annual report from 2014 through 2018 resulting in data displaying the exact amount of mentions of every search term in every annual report of the sample banks in that time span, enabling the investigation of possible detectable trend with regards to the number of mentions of the search terms over the years. This quantitative data was then analysed further and used to support arguments drawn from the qualitative analysis (see Chap. 4).

3.6 Credibility

In terms of credibility, the areas of reliability and validity are concisely outlined and discussed to ensure the representativeness of this study, as well as its contribution and applicability for future research.

3.6.1 Reliability

First of all, reliability is concerned with the question of whether the results of a study are repeatable, and thus, i.e. involves whether the accuracy of the measurements that are obtained will be equivalent to future research that conducts potential identical studies (Easterby-Smith, Thorpe & Jackson, 2015; Bryman & Bell, 2011). Since this study is based on publicly available data which is solely extracted from (online) published annual reports, other researchers should not be constrained to extract indistinguishable data. As aforesaid, the data is summarised in the findings chapter and is subsequently discussed to aim at answering the research question. This process is

described as transparent as feasible and in a most objective manner to avoid deviations with future research.

3.6.2 Validity

Validity is concerned with the integrity of the conclusions that are generated from a piece of research, and thus, i.e., relates to whether the evaluation of a concept is stable in that it does not fluctuate and therefore is reliable (Bryman & Bell, 2011). The approach within this paper uses search terms that best relate to FinTech. As discussed, these search terms are chosen in accordance with prior research and an extensive literature review. Besides, by comprehending that the inclusive search terms could plausibly also refer to different content, additional characters are extracted before and after the search term, to ensure that the meaning and purpose is understood correctly in the right context. Not only that, but to assure that potential other FinTech related context is not unnoticed in the annual reports, a second manual exploration is added to resolve this point. Lastly, in regards of external validity, which is concerned with the question of whether the results of a study can be generalised beyond the specific research context (Easterby-Smith, Thorpe & Jackson, 2015), one could argue that the sample size is small, but so is the banking sector within the Nordics, particularly referring to large banks while comparing it to the global industry in terms of assets. This further provides the foundation for choosing this representative sample size. Every Nordic country is represented except Iceland and associated territories (Greenland, Faroe Islands, Åland Islands, and Svalbard), as these areas only host banks that are too small in size, or do not host a bank at all, and are therefore not believed to contribute to the findings of this study.

Another factor influencing the validity of drawn conclusion in the specific matter of this paper is the assumed gap between actions disclosed in annual reports and actually carried out actions, which would imply a necessary review of the disclosed actions in a few years' time after the publication of the annual reports to assess the truth of the initial statements. With regards to the scope of this paper and the established high levels of trust in annual reports in general and the Nordic region in particular, this is not taken into account within this study.

4. FINDINGS AND ANALYSIS

This chapter will outline the findings of the conducted study. It will be presented with a special emphasis on the differences between the concerned years 2014 and 2018, subsequently proceeding with an analysis of each bank in alphabetical order.

4.1 Danske Bank

4.1.1 Annual report 2014

In Danske Bank's 2014 annual report, several observations can be made with regards to **in-house development of technology**. Next to *MobilePay*, which was already introduced the year before and allows users to transfer money easier and via a mobile App instead of their online banking account, Danske Bank also developed a solution for businesses in Denmark called *MobilePay Business* in 2014. This solution brings the described functionality to corporate customers, including all relevant demands for business-to-business transactions, especially with regards to tax-related issues. In addition to that, another new feature enabled municipalities and other market participants of the public sector to use *MobilePay* in their daily operations. In connection with *MobilePay*, Danske Bank also announced that the number of private customers using the service reached 1.9 million, displaying growth in adoption in the private sector. In addition, Danske reported about the launch of other notable services that originated from in-house development and did not show apparent involvement of external participants. *Danske Guide* was introduced, offering a fully-digitalised tool to help customers in case they have questions regarding products of Danske Bank, including a comprehensive catalogue of Question & Answers, user manuals, and real-time customer service chat supporting customers when other components are not answering their questions sufficiently. Furthermore, Danske Bank launched another guide specialising on customers interested in taking out a mortgage at the bank. Much like *Danske Guide*, this service aimed at digitally supporting customers in their endeavours.

Apart from the efforts described above which can all be assigned to the in-house development in relevant technology, Danske Bank additionally made several non-concrete statements that do not allow to draw conclusions with regards to specific services but demonstrate the increasing meaning digital innovation has within the company. Those statements include the general development and

upgrade of the overall digital offering, further improvements of digital channels, and the enhancement of the set up for startup businesses. Although not discussing concrete actions that were developed, improved, or upgraded, Danske Bank displays the increased significance it has assigned to the topic internally.

In its 2014 annual report, Danske Bank did not disclose any (non-)concrete actions with regards to the other categories identified before, namely external **collaborations and partnerships**, **investment in/ or acquisition** of FinTechs, and **tech-savvy personnel**.

4.1.2 Annual report 2018

Beginning with the category of **collaboration** with external FinTechs, in its 2018 annual report, Danske Bank disclosed several significant collaborations the company has started in the last year. Firstly, Danske Bank announces the partnership with *TomorrowTech*, a Finish FinTech specialising in digitising the real estate market. One significant development of the year 2018 with regards to collaborating with FinTechs was the creation of the *Catalyst Fintech Hub* in Belfast (Northern Ireland), where Danske Bank reported to have launched a dedicated FinTech co-creation space. Another specific collaboration mentioned in the annual report was the one with Swedish FinTech *Minna Technology*, a company that has developed a way for customers to manage all their existing subscriptions within their online banking application. As stated in the annual report, Danske Bank planned to incorporate these services into its online banking offering. Besides, Danske Bank revealed the launch of an accelerator programme directed at startup companies that have the objective to solve environmental or social issues, where the bank supports the companies in their efforts to network and attract funding through mentor sessions with experts from Danske Bank.

Not only did Danske collaborate with FinTechs in 2018, but also reported several direct **investments** in emerging companies with innovative technology. Most notably, the annual report mentions the investment in Danish *Spiir*, whose services allow customers to manage their monthly budget and find less expensive alternatives for their fixed expenses.

In addition, Danske Bank also put emphasis on the **in-house development** of its innovative digital solutions to manage upcoming trends and transform its business. As explained before in the analysis of the 2014 annual report, *MobilePay* is a significant part of the bank's digitalisation strategy, which is why Danske Bank disclosed further development of the service in its most recent annual report, e.g. by integrating new functionalities. The bank published the introduction of *MobilePay Box* and *Invoice* in 2018 to allow customers to fully-digitially manage collection boxes (when collection money, e.g. at work or in a local club) and the invoices it received. Apart from *MobilePay*, the firm noted the launch of several other digital services in 2018, such as digitised customer agreements, digital signing, and automated credit decision tools. Also, a central innovation unit was established in 2018 with the task to explore and learn about unmet future customer demands.

Apart from the disclosed concrete measures that were taken in 2018, Danske Bank made several general comments that are regarded as relevant. "Digital innovation continues at a pace, and it is expected to accelerate further in 2019. This is due to both increasing customer expectations and the launch of open banking" (Danske Bank, 2018b, p. 60) displays how important and significant this theme has become and how much it is emphasised by Danske Bank in order to further develop its business. In response to the "increasing customer expectations", Danske stressed to have "initiated a major investment in upgrading our digital markets platform" and "strengthened our digital innovation setup" (Danske Bank, 2018b, pp. 49-50).

Danske Bank did not disclose any (non-)concrete actions regarding the fourth category, their approach to attract and retain **tech-savvy personnel**.

4.1.3 Analysis

As can be seen by the findings and the number of mentions in its annual report, Danske Bank can be labelled as a frontrunner in its digital efforts as early as 2014 (see Figure 7 below).

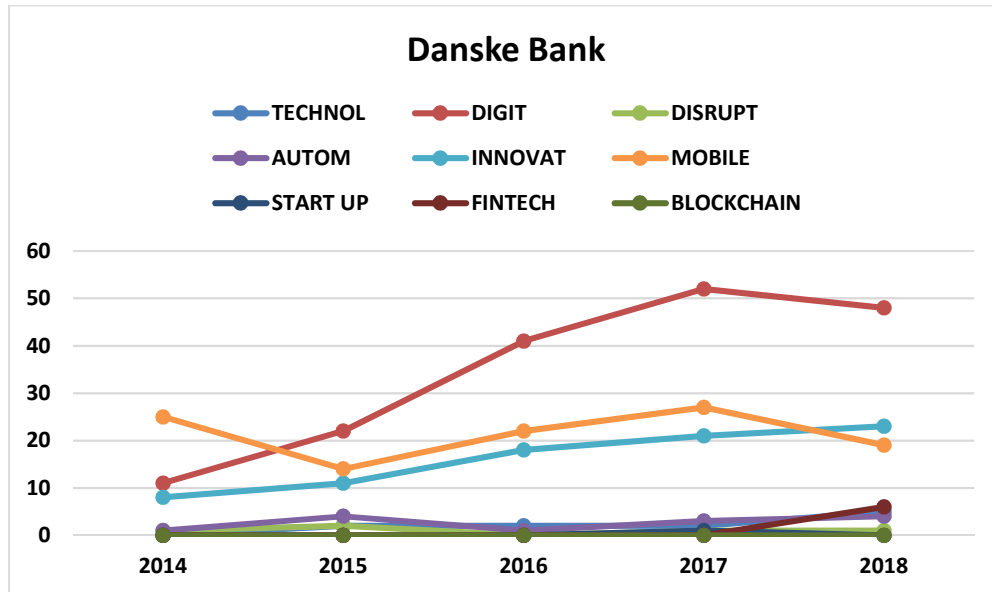


Figure 7: Number of mentions Danske Bank

In addition to Danske Bank’s peer-to-peer service *MobilePay*, Danske also rolled out a solution for corporates and municipalities to enable them to make use of this sophisticated and mature technology that already served close to two million private customers at that time. Apart from that, Danske Bank showed early efforts to slim down and optimise internal and external processes by establishing a digital guide. Still, it has to be noted that the report lacks concrete mentions regarding actions except for the ones mentioned above. This displays how the bank was just getting started with its digital transformation, which is in line with Arner et al.’s (2017) view stating that FinTech as a trend only started to emerge in 2014.

Compared to the previous report, in 2018 a strong focus was put on external collaborations, which could be caused by the particular emergence of FinTechs in recent years. This notion can be further supported by the quantitative data which displayed that the search term ‘FinTech’ was not explicitly mentioned before the 2018 annual report. Danske Bank’s partnership with *Tomorrow Tech* can be interpreted as an opportunity to gain a foothold in the area of real estate, whose selling and further connected services arguably are not a core business of the bank. Danske Bank could ultimately plan to connect and link it to its mortgage business directly. Moreover, the creation of a FinTech Hub allows the bank to experience the most current innovation first hand, enabling it to partner up with promising companies in the very early stages. In addition, the setup of an accelerator programme for startups attacking environmental and social issues, although not

exclusively directed at FinTechs, aims at partnering up with emerging companies and securing long-term access and cooperations with them.

The collaboration with *Minna Technology* arguably aimed at expanding Danske Bank's provided services. By partnering up with the FinTech, the bank can offer mature services that enhance the bank's portfolio for the customers; this could be labelled as a blueprint when it comes to banks implementing external technology into their existing services to keep up with the rapid digitalisation of services in this particular area and meet changing customer preferences that come with it, a phenomenon explained by In & Yong (2018). The same argument can be used to analyse the investment in Danish FinTech *Spiir*, enabling Danske Bank to implement yet another functionality into its existing digital offering, which appears to be reasonable as well considering the nature of the service which could be integrated rather unproblematic. The direct investment can furthermore be labelled as a strategic move, as Danske Banks ensured that long-term access to *Spiir*'s technology can increase its presence in the market. Also, through the provision of capital, *Spiir* can further develop its products, as access to capital is critical to the success of new technology as mentioned by Gomber et al. (2018).

Moving on, the evolution of *MobilePay* further transformed the service towards a holistic application that allows customers to manage a majority of their financial matters. The history of the service displayed that apart from integrating external technology, Danske Bank is willing to direct its internal efforts at transforming its business from within. This can be further underlined with the establishment of the new central innovation unit, which is supposed to be the future focal point of all digital development within the group and centralises capabilities in that regard.

It is important to emphasise the lack of mentions regarding the fourth category, retaining and attracting of tech-savvy personnel. This becomes especially significant when considering Hooghiemstra's (2010) statements, who stated that annual reports are used to create a favourable atmosphere, which in this regard could be utilised to actively advertise initiatives that aim at displaying Danske Bank as an attractive employer. On the contrary, the development of its employees could be seen as a rather internal process, where Danske Bank does not intend to give away too much on internal initiatives.

4.2 DNB

4.2.1 Annual report 2014

When examining the annual report of DNB for the year 2014, several observations can be made regarding the bank's approach towards digital innovation. Firstly, DNB stressed the importance of the launch of a contactless mobile phone payment solution developed together with *Telenor* and *Sparebanken*. As DNB was the lead developer in this venture, this can be labelled as both **in-house development** but at the same time also fulfilled components of collaboration, even though DNB's partner were not FinTech companies. Another significant **collaboration** that DNB entered in 2014 was an industrial conglomerate to establish *BankID Norge*. This alliance pursued the target of developing, operating, and managing electronic ID services for the banking industry going forward, a field that from the perspective of DNB will gain significant traction with the emergence of the digitalisation of all financial services.

Apart from the explicit mentions of launches and developments in 2014, several non-concrete statements can be detected as well when consulting the annual report. DNB stated that in 2014 the company put substantial effort in "improving the stability of our digital services" (DNB, 2014, p.2) and continued to work on streamlining and facilitating self-service solutions. Moreover, DNB emphasised that the number of active users of the bank's mobile banking has increased by 36 % just in the year 2014, this further supports the notion of customers adopting DNB's digital services. Apart from that, nothing relevant is mentioned in regards to either **investments and acquisitions** or **tech-savvy personnel**.

4.2.2 Annual report 2018

Moving on to DNB's annual report from 2018 and beginning with DNB's efforts to attract and retain **tech-savvy personnel** or otherly stated as talent with a tech background, the bank reportedly has initiated several measures. Firstly, DNB established a unique education programme in cooperation with *Oslo University* to educate more IT architects within the company's workforce. Also, DNB acknowledged that "changes in the world [...] influence the skill mix of employees" (DNB, 2018, p.44), which is why the firm introduced another programme aiming at further educating DNB's workforce, namely an internal Data Scientists programme to educate groups of

skilled data analysts. In more general terms, DNB stated that it has increased its investment in IT and the focus on specific skill enhancement and development of current employees. Another approach in this area is the *DNB Startup Pilots* programme: not only do startup companies of any kind receive support in their financial matters, but interested employees (account officers) of DNB can also decide to take part in the consultation of those companies to increase their expertise on digital topics. Moreover, DNB claimed to have used this increased knowledge of digitalisation to drive its internal efficiency programme *DigiDrift*, run by DNB's employees. According to the annual report, *DigiDrift* has already employed robots in 35 processes so far and is expected to continue the transformation of DNB's operations towards a more digital and efficient future.

Additionally, DNB reported about the launch of several new services through **in-house development**. Most notably, the payment app *Vipps*, arguably the Norwegian counterpart of Danish *MobilePay* (see Chap. 4.1) and Swedish *Swish* (see the following subchapter on Swedbank), was developed by DNB in the last years and has received significant updates in 2018: the functionality was enhanced to ensure increasing customer demands and services were added to the payment app. In addition, DNB described that it further developed its digital chat robot *Aino* in 2018, and adopted the employment of machine learning within its software to optimise its products. Another digital initiative originating from DNB's internal focus on digitalisation is *SMEdig*, a digital initiative for customers in the corporate segment that simplifies many processes ranging from the management of term loans to the monitoring of lines of credit. Besides, to appropriately approach smaller corporate customers, *DNB Puls* was introduced, this development aimed at creating a complete financial management functionality by providing "a pocket-sized digital adviser and accountant for companies" (DNB, 2018, p. 19).

Moving over to the external **investments** that DNB has made in 2018, the annual report listed several direct investments and initiatives that expanded the bank's portfolio of digital products. Overlooking every action the bank decided to take, DNB's subsidiary *DNB Venture* is concerned with its developments in the digital segments, and ultimately decided on the firm's investment opportunities. Through this vehicle and its accelerator programme *NXT Accelerator*, DNB announced that it has become a partial owner of the crowdlending company *FundingPartners* in

2018. In its 2018 annual report, DNB listed new collaborations and/or investments originating from the programme, e.g. a service that allows the partial automation of audit tasks.

In addition to DNB's investments, the bank also reported about several **collaborations** in 2018 and announced a significant partnership going forward: in the following years, DNB and its payment app *Vipps* plan to partner up with Chinese giant *Alipay* in order to further expand *Vipps*' service across Europe. Other collaborations include a partnership with leading technologist *11:FS* to form *11:FS Foundry*, to "explore a whole new mindset when it comes to technology and IT architecture, and develop the banking solutions of tomorrow" (DNB, 2018, p.19). Similarly, DNB stated that in 2018, several cooperation agreements with local entrepreneur/ startup communities throughout the home market Norway were made. These include *MESH Startuplab* in Oslo, *FLOW* in Tromsø, and *DIGS* in Trondheim.

Having examined the concrete mentions in DNB's 2018 annual report, it has to be noted that there are also several non-concrete statements that are worth analysing as they give a good idea of DNB's overall approach to the topic, such as "we must think and act like a technology company" (DNB, 2018, p.28), and "the infrastructure must therefore constantly be further developed in line with the technological advances" (DNB, 2018, p.38). DNB supported this notion by comparing itself with technology companies: "to meet the competition from technology companies, DNB has developed a method of prioritising projects that should be carried out with an agile approach, which is a common way of managing projects in technology companies, where ideas are continuously developed and tested" (DNB, 2018, p.55). Although non-concrete, one specific category furthermore receives increased attention: the talent component. DNB stated that it has several agendas in 2018, promoting and attracting employees with a technological background since DNB believes that the need for this is increasing. Its general approach can be summarised with the following statement derived from the annual report that stresses the importance to "have employees with sound knowledge of how digital services and data are managed in a safe manner [which] is essential to maintain our customers' trust and thereby our competitive strength" (DNB, 2018, p.56).

4.2.3 Analysis

Starting with the launch of the contactless mobile payment service, it can be stated that as early as 2014 DNB was employing a rather sophisticated and innovative approach to digitalisation, especially when considering that there was not a defined market for contactless payment yet. Still, the launch aimed at enhancing the bank's digital offering, a development that certainly was initiated by the FinTech industry, as explained in Chap. 2. When comparing this action to the other sample banks, it can be observed, that only a few of them disclosed this kind of activities in 2014, meaning that they were either still in development stages or did not yet contemplate what the impact of technology could mean at this point. This sophistication in 2014 is especially remarkable when considering the quantitative data displayed in Figure 8, and how selectively DNB chose to use keywords in this annual report compared to the following years:

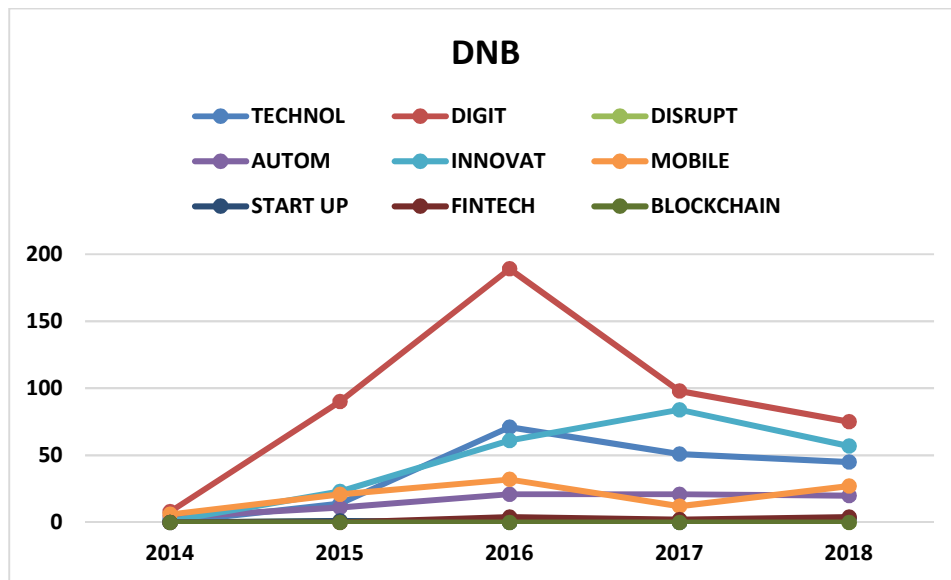


Figure 8: Number of mentions DNB

Another action from DNB's 2014 annual report can be labelled as a direct response to the emergence of FinTechs: the establishment of an industrial conglomerate to develop the service *BankID Norge*. The invention of this electronic ID service for the banking industry arguably preempts the developments of FinTechs that would otherwise pursue to establish a similar service as electronic identification will gain ground when banking services are digitalised. Furthermore, the mentioned increasing number of mobile users supported and encouraged DNB's efforts to

further develop technological capabilities in the segment, a notion that is stressed several times in DNB's annual report.

It can be observed in 2018 that DNB acknowledged the increasing importance of its employees in the pursuit to transform its business model into a more digitally centred bank, as suggested by Haddad and Hornuf (2018) who deem talent being essential to innovative business development. DNB tackled this issue mainly by educating its employees themselves through various initiatives, e.g. its programmes to train and develop more IT architects and data scientists. Moreover, a rather innovative approach is employed by DNB when the bank allows interested employees to take part in the consultation and support of startup companies. Not only does this significantly increase the tech expertise of participating employees, but also it can be assumed that the innovative power of the entire company is enhanced by employees transferring what they have learned in the process into their daily activities. This becomes even more significant when taking into account another initiative mentioned in the annual report, the internal efficiency programme *DigiDrift*. By educating employees and encouraging them to get active on their own, *DigiDrift* will ultimately benefit from a digital mindset which is created within the organisation through DNB's various initiatives.

As demonstrated above, DNB appears to have utilised the expertise of its employees, for instance, to launch several internal developments in 2018. This resulted in the usage of *robotics* while dealing with customer requests, which underlines a more advanced approach. Also, this technology began to be implemented in the corporate context only a few years ago, yet it is expected to have a significant impact in the near future, as remarked by PwC (2016b). The increased level of expertise has also led to the existence of the *NXT Accelerator*, in which DNB accompanies seed and early-stage startups to explore and utilise the network, resources and expertise of DNB. This can enable the bank to identify selected investment decisions to secure long-term access to the (new) technology, through the acquaintance with companies and services that might be full of promise and could fit into DNB's portfolio. The ambition not to miss critical technological developments is also displayed by the involvement in various co-working spaces throughout Norway, and the collaboration with *II:FS*. In these actions, Gomber et al.'s (2018) assertion can

be found: to embrace disruption and effectuate innovation, disruptiveness should be embraced and integrated into a company.

Lastly, the general theme of the annual report, especially the one from 2018, is noteworthy when considering the research question. By comparing itself to technology companies, DNB's aspiration to make further moves towards the transition to a digital bank can be observed. The combination of all actions results in a sort of holistic approach towards digitalisation, where every part of the value chain is reviewed and adjusted if possible, always keeping in touch with the newest trends through various points of contact with the FinTech industry.

4.3 Handelsbanken

4.3.1 Annual report 2014

In Handelsbanken's 2014 annual report, the bank has failed to disclose any concrete actions that could be classified into the four categories and as direct reactions to the emergence of FinTech. Still, in more general terms the organisation stated to "keep abreast of rapid IT advances and continue to develop new digital meeting places" (Handelsbanken, 2014, p.16) and that "apps have transformed the banking sector" (Handelsbanken, 2014, p.17). Also, the company believed that "in 2014, IT advances have been progressing more rapidly than ever. Handelsbanken is continually offering new, improved digital solutions" (Handelsbanken, 2014, p.17), which sets the tone for both annual reports by not giving away too much information on the bank's specific actions but acknowledging the influence of digitalisation on its business and ultimately services offered to customers. Throughout the report, Handelsbanken emphasised its focus on digitising the business and further developing the bank's digital channels while at the same time combining local physical presence with digital platforms: "Our business model combines local physical presence with digital platforms in such a way that it enables us to grow in a scalable, repeatable manner" (Handelsbanken, 2014, p.5).

4.3.2 Annual report 2018

While analysing the 2018 annual report of Handelsbanken, more mentions were found, especially in regards to concrete measures and actions resulting from **in-house development** of technology. Firstly, Handelsbanken stated that the development of a digital advisory tool to facilitate an

increase in customers' investment in funds was a crucial in-house development in 2018. The bank continued by outlining how the mortgage loan process was digitised within this timespan. In addition to its external services, Handelsbanken claimed to have digitally improved several internal operations as well. Although the firm is rather parsimonious with its disclosure, exemplified by many non-specific and general statements. Though, it still noted internal administrative processes have seen significant advancements in terms of automation in 2018. Moreover, Handelsbanken claims that it started to use “artificial intelligence to review financial advice” (Handelsbanken, 2018, p.4), as well as in credit decisions. Apart from that, Handelsbanken also took part in a **collaboration** exercise from an organisation representing the Swedish financial sector to manage disruptions in the industry, but fails to disclose anything with regards to the remaining two categories, **investments and acquisitions**, and **tech-savvy personnel**.

4.3.1 Analysis

As displayed before, in 2014 there were no mentions that can be connected to concrete actions and therefore leave some room for speculation. Interestingly, in 2018 Handelsbanken continued not to disclose an abundance of concrete actions, this lack makes it rather difficult to analyse the annual report, as one can observe that Handelsbanken only makes general acknowledgements regarding its digital transformation and not specific actions, a fact that can be supported by the relatively small amounts of mentions in the quantitative data displayed below in Figure 9.

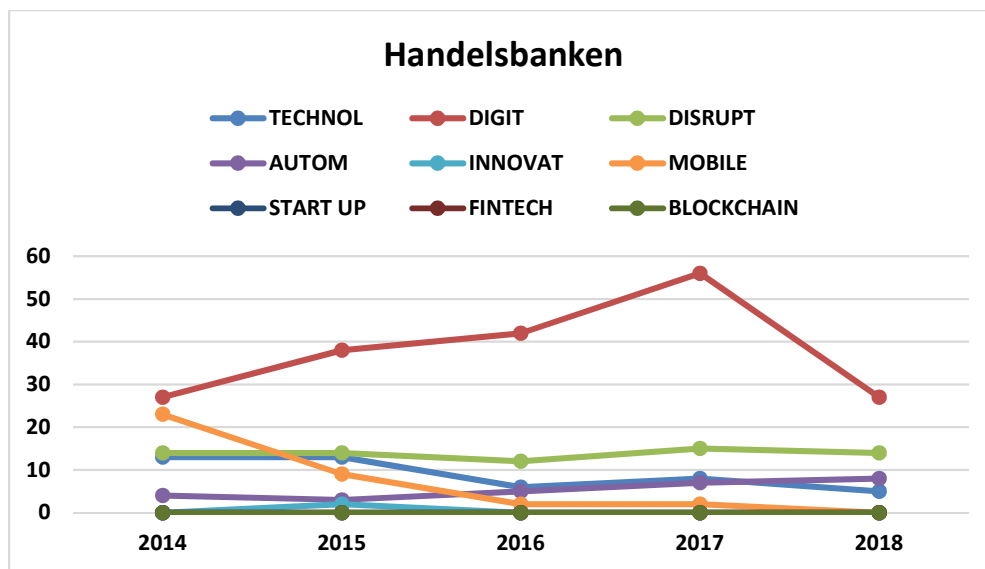


Figure 9: Number of mentions Handelsbanken

Several internal developments underline the bank's efforts and usage of innovative technologies to increase its market presence, but specific new services or products are not mentioned, while in the same fashion other banks from the sample group tend to be more elaborative. This can be interpreted in a way that Handelsbanken is indeed aiming at transforming its business, but without entering into external partnerships or undergoing drastic transformations in a short notice, which might turn out to be risky and costly. Another example that displays that Handelsbanken is aware of the digital innovation phenomena that change the banking industry is the bank's participation in the collaboration exercise to manage disruption. Although it did not disclose specific actions or enhanced products that resulted from this collaboration, the participation still displayed that it anticipated market disruptions that can further emerge from FinTechs in the future, which can therefore be connected to the research question.

4.4 Jyske Bank

4.4.1 Annual report 2014

There are no applicable mentions of the search terms in the 2014 annual report of Jyske Bank.

4.4.2 Annual report 2018

Moving on to the 2018 annual report of Jyske Bank, one specific mention and several more general and non-concrete ones could be detected. The single concrete action can be assigned to the **in-house development** category of the framework. In 2018, Jyske Bank reported the introduction of *Munnypot*, a digital solution through which clients can have a direct dialogue with one of Jyske Bank's employees about investment advice. No mentions regarding the remaining categories **investment and acquisitions**, **collaborations**, and **tech-savvy personnel** could be detected.

Apart from this, the remaining detected mentions in the annual report could be classified as non-concrete. Right at the beginning of the document, Jyske Bank made the following statement: "In 2018 we really sped up the Group's digital development. Several digital initiatives were launched and more are in the offing" (Jyske Bank, 2018, p.7). This serves as a representative example for the entire annual report: even though several search terms can be detected, no specific conclusion regarding actual actions can be drawn from this statement. "However, the concept of relationship

is changing due to the technological development [and] focus will to an increasing degree be on the technical functionality in the clients' interaction with the Group rather than building up a relationship" (Jyske Bank, 2018, p.7) is another proof of how Jyske Bank feels about digitalisation and its implications. The bank further supported this notion by stating that its "task is to secure that our digital solutions support our strategy of being an advisory and relationship bank for the Group's various client segments" (Jyske Bank, 2018, p.7). Apart from these rather general and not revealing mentions, Jyske Bank in addition stated that it has the goal to become a cashless bank in 2025, this ambition can be connected to the following developments: "no cashier's desks in Jyske Bank's 98 branches – the last two will close in April 2019" (Jyske Bank, 2018, p.10), while at the same time reducing the number of outdoor ATMs due to changing customer behaviour.

4.4.3 Analysis

When consulting the qualitative data to support arguments originating from the qualitative data, it is evident that there were no relevant mentions in the 2014 annual report of Jyske Bank. According to Figure 10, the topic did not gain traction within Jyske Bank's annual reports until 2017, with a significant increase in the numbers of mentions following from 2017 to 2018, as displayed in Figure 10.

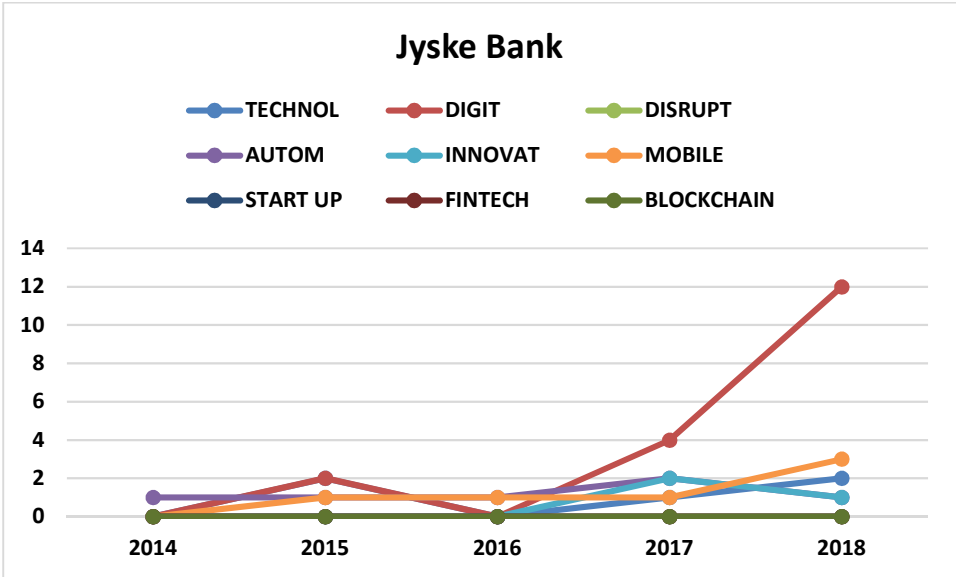


Figure 10: Number of mentions Jyske Bank

In Jyske Bank's 2018 annual report, it still did not reveal too much about possible digital developments, even though one specific mention is made regarding *Munnypot*, which Jyske Banks has developed in-house utilising its resources. *Munnypot* can be labelled as a first step towards digitising the bank and its business model. Whereas this is instead an incremental innovation, it can be marked as a direct response to the emergence of FinTech. FinTechs entered the market with fully digitalised Robo-advisors in recent years and thereby paved the way for more technology-driven advice, which Jyske Bank now responds to by launching *Munnypot*, although still being backed by human employees working in the background of the service. Another interesting mention to be analysed is the bank's ambition to be a cashless bank shortly. Whereas this can be seen as a rather standard statement considering the development of Denmark towards a cashless society in general, it still displays Jyske Bank's willingness to embrace trends that emerge from the ongoing digitalisation of the industry (Accenture, 2018). Overall, Jyske Bank's approach can be described as sticking to the bank's business model of being a relationship bank through its branch network while implementing digital points of contact when they are suitable and likely to be accepted by the customers.

4.5 Nordea

4.5.1 Annual report 2014

When examining the 2014 annual report of Nordea, several concrete actions can be derived from the statements. Beginning with the **in-house development** of technology, Nordea listed its launch for the instant approval of customer loans, the automated mortgage loan processes and the monitoring of suspicious activities as significant new introductions in 2014. Furthermore, *Nordea Next* was initiated. According to Nordea, this new service allows customers to validate and give feedback to selected new digital services that the banks implements, thereby providing a direct reaction to the new offerings from its clients. Although not too specific, Nordea additionally stated that "among new offerings launched last year were new mobile banking solutions, providing customers with features like drag and drop payments and transfers, a full overview of loans and credit cards and secure email." (Nordea, 2014, p.8).

Apart from those self-developed new services, Nordea also made one specific mention about an innovation challenge competition that it hosted together with *IBM*. Whether Nordea entered into

collaborations with the winners or other participants of the challenge afterwards is not disclosed. For the remaining categories **acquisitions and investments** and **tech-savvy personnel**, no specific mentions could be detected.

Moving on to the non-concrete mentions, Nordea listed multiple issues that the bank has tackled in 2014, which can all be assigned to the in-house development category. Several times throughout the report, the bank emphasised it has worked “on simplifying and digitising our key processes and products to deliver scale, reduce costs, and make it easier and more convenient to bank with us” (Nordea, 2014, p.19). As an example to demonstrate this efforts, Nordea stated that the bank plans to increase its IT related investments by 30-35 % in the upcoming year, this is underlined by stating that “digitalisation is one of the main drivers of change in banking [...] Customers preferences and expectations on accessibility, easiness, and personalisation are key drivers in this development. We have seen the preferences rapidly increase for mobile solutions.” (Nordea, 2014, p.6).

4.5.2 Annual report 2018

Beginning with the category of retaining and attracting **tech-savvy personnel**, in the last year, Nordea reported the establishment of *Digital Awareness Sessions* with all employees and *Digital Talks* on topics like digitalisation, technological development, and disruption. With these measures, Nordea planned to influence, provoke, and expose a digital mindset to its employees. Furthermore, Nordea made a statement about its shifted focus towards retaining and attracting the best talents in the industry, also by leveraging digital and automation opportunities.

Continuing with **in-house development**, Nordea stated that it has launched several new services in its effort to digitalise its business, e.g. a modern and fully digitalised *Core Banking Platform* was launched in Personal Banking. Besides, Nordea’s digital advisor *Nora* was launched as a new offering, which is an additional finance calculator for customers. According to Nordea, *Nora* has already operated more than 115,000 advisory meetings with customers, this significantly optimised the bank’s value chain. In addition to that, the virtual assistant *Nova* was established and served as an external chatbot that 24/7 available, and supports the real-time customer service. Another noteworthy launch in 2018 was *Nordea Connect*, which is emphasised as “a big step forward for

Nordea in the e-commerce arena” (Nordea, 2018, p.18). *Nordea Connect* works as a payment service provider and will mainly be used in online shopping activities of Nordea’s customers. With regards to automation, Nordea stated that “more than 500 robots are up and running to gain continuous efficiency improvements” (Nordea, 2018, p.33). Nordea also reported about its *open banking* platform, and regards this as another significant development area that went live in Denmark, Sweden, and Finland in 2018. This underlines the notion that was detected in the literature review, where McKinsey (2017) for instance acknowledged the significant role that open banking plays in the further evolution of FinTech disruption. As Nordea phrased it, “2,500 external developers are forming part of our digital ecosystem, creating ideas and solutions for our customers” (Nordea, 2018, p.5), displaying that the *open banking* platform is established through a fusion of in-house developed technology and through collaborating with external market participants.

When it comes to purely external **collaborations**, Nordea announced that it has added *Google Pay* to its digital payment offering. Aside, the bank reported that it has entered into a partnership with eight other European banks to design and develop *we.trade*, a blockchain-based platform that “will allow companies to trade in a fast, easy, and transparent way” (Nordea, 2018, p.4). Also, Nordea established dedicated startups and growth units in all operating countries to be the best possible advisor and partner to young companies. Nordea did not disclose any actions regarding the last category, **investments and acquisitions**.

Apart from the explicit mentions in the annual report, Nordea supplementarily delivered several other statements which did not imply that specific actions were taken, but rather displayed the general acknowledgement of the changing digital landscape. Nordea claimed to have a “high focus on Robotic Process Automation (RPA) capabilities and automation processes across the Group” (Nordea, 2018, p.33). A broader statement displaying the general approach of Nordea in this regard is the following: “We meet [...] new demands by using emerging technology to lead the way in adopting new innovative services by involving our business clients in our development. We stay close to our customers, let them test new solutions and integrate the customer feedback to innovate and improve.” (Nordea, 2018, p.18). Interestingly, Nordea labelled payments “as the heart of

digital transformation affecting the banking industry” (Nordea, 2018, p.20), and thereby highlights this as a future focus area.

4.5.3 Analysis

Already in 2014, Nordea was offering a diverse range of digital services, which sometimes even covered areas that other banks from the sample did not even include in their 2018 annual reports. One example for this sophisticated and advanced approach is the launch of *Nordea Next* where Nordea explicitly asked customers for feedback for recently introduced digital enhancements of its technology. This inclusion of customers when developing and introducing new technology displays how serious Nordea took the emergence of FinTech already in 2014 and how the bank tried to ensure that new technology was accepted by customers. By following this approach, Nordea arguably also aimed at preventing customers from switching to services from FinTechs. In addition to that, the relatively high investments in IT in 2014 show the importance for Nordea, an investment that will enable the bank to develop and introduce new services that are in touch with latest trends and might even lead innovation in the banking and FinTech industry.

In its annual report four years later, Nordea put even more emphasis on the digital transformation of the bank, a notion that can be further supported by the quantitative data. Figure 11 below displays a clear and detectable trend in the number of mentions of the search terms and can therefore be used to support the following arguments.

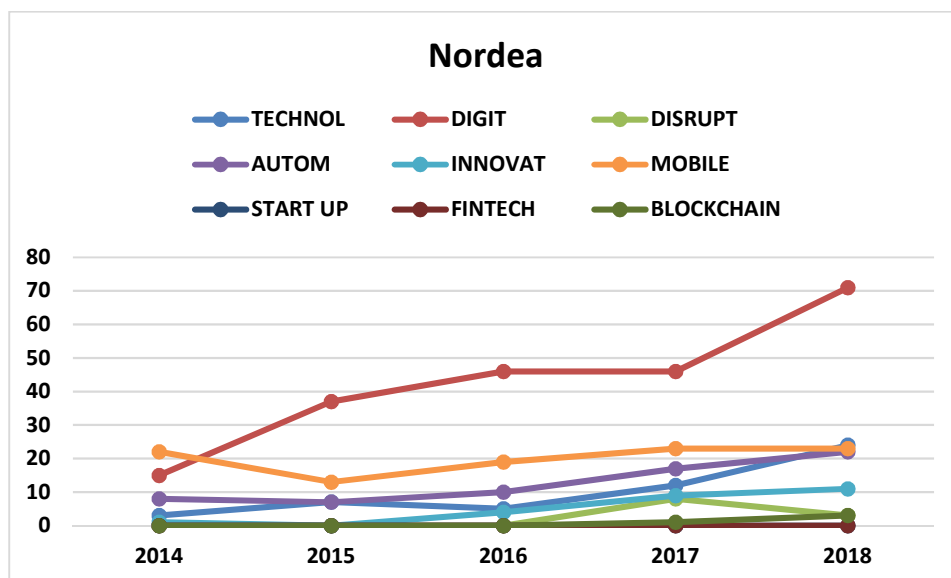


Figure 11: Number of mentions Nordea

One action worth analysing is its increased focus on talent, which will partly influence its ability to be innovative. As the war for talents has become more present for banks, Nordea has increased its effort to educate its employees and also to attract skilled talent. The use of robotics to improve internal processes displays a rather sophisticated and advanced approach to this complex topic that only emerged in recent years. Furthermore, the launch of *Nordea Connect* can clearly be interpreted as a direct response to the emergence on FinTech, especially when considering the nature of the service (online payment, e-commerce) and its statement of payment technology being at the heart of digital transformation. The same goes for the implementation of *Google Pay*, although this is not a direct collaboration with FinTechs but rather with a BigTech.

An additional action worth analysing is Nordea's involvement when it comes to *blockchain* through collaboration with other notable market participants. Even more than *robotics*, *blockchain* is only a very recent development and is not attacked yet by most of the banks in the sample as can be seen by the number of mentions the term generated for the entire sample. By working towards solutions that make the use of the *blockchain* technology beneficial for the industry and when considering PwC's (2016b) statement of *blockchain* having the ability to alter the financial services industry, Nordea can be labelled as a pioneer. Presumably, being a frontrunner in developing *blockchain* solutions will enable Nordea to siphon off this competitive advantage in the future if the technology has the disruptive force on the financial sector that is projected by most researchers and practitioners (see Chap. 2.1).

With regards to its *open banking* platform, it can be stated that Nordea is not afraid of including external developers when enhancing and innovating its business. Also, the platform demonstrates how Nordea does not think in categories but instead executes an opportunistic approach when it allows external participants to shape its software environment partly. This opportunism is further underlined by the establishment of startups and growth units within Nordea that are concerned with supporting young companies in their early stages. Even though this cannot be seen as a concrete collaboration yet, Nordea still aims at being as close as possible to the startup scene to not miss the opportunity to collaborate with promising young companies.

4.6 OP Bank

4.6.1 Annual report 2014

In terms of **in-house development** of technology, Op Bank states that it has developed the mobile application *PIVO*, which can be seen as a Finnish alternative to the Swedish *Swish* app. As reported, this in-house development enables its users to make payments to other users, both in-stores and online, without account numbers, bank user identifiers, and card numbers. This mobile wallet innovation was released in late 2012. Also, the bank stated that investments in the development of mobile and online services have increased considerably.

Furthermore, OP bank did not disclose anything regarding **collaborations and partnerships**, yet the bank stated that it has made **investments and acquisitions** to enhance its competitive position within the digital payment services segment. OP Bank further notes that it made an outright acquisition of the firm *Checkout Finland*, which is a firm that offers payment services to e-commerce businesses. OP Bank clarified that the rationale behind the acquisition relates to its further contribution to and further promotion of the overall Finnish trade and payment sector.

Moreover, in terms of **tech-savvy personnel**, OP Bank has established a digital solutions unit as an answer to innovation and competition as mentioned in its annual report, and this unit is responsible for the development of mobile services and improves the saleability and usability of internet services. As reported, the division comprises of around 100 employees as of the end of 2014.

4.6.2 Annual report 2018

In 2018 OP Bank reports very little about its digital and operational enhancements. The bank disclosed concisely that its strategy in force and the targets set for the 2017-2019 scheme include further developments and usage of digital services. In line with this statement, OP Bank stated that “Development investments focused on the development of electronic services and the basic system upgrade initiated” (OP Bank, 2018, p. 17) Also, by further development of its online and mobile services in both insurance and claims, but that includes everything related to the **in-house development** of technology category. Apart from that, nothing is mentioned about (specific)

collaborations and partnerships, as well as **investments and acquisitions**, or how the firm has dealt with the retainment and attraction of **tech-savvy personnel**.

4.6.3 Analysis

What stands out in 2014 is that OP Bank can be seen as a digital frontrunner in regards to certain developments, e.g., the release of the app *PIVO*, in 2012. In 2014, the bank focused mainly on improving its digital payment services. Furthermore, interestingly, it mentioned that it has established a unit that focused on enhancing applications and the development of new products, though arguably more in an incremental way, as referring to the Puschmann (2017) framework. Though, next to the establishment of this unit, the acquisition of *Checkout Finland*, and the *PIVO* app, nothing concrete is mentioned in terms of innovation, digitalisation or FinTech. Further, the lack of other mentions means that no actual numbers, specific products and or services within the development of in-house technology have been disclosed. While comparing this with the trend displayed in figure 12. It is apparent the overall amount of the search terms has increased, yet while analysing the context in which these words are placed, one can argue that this same trend is not discernible text-wise.

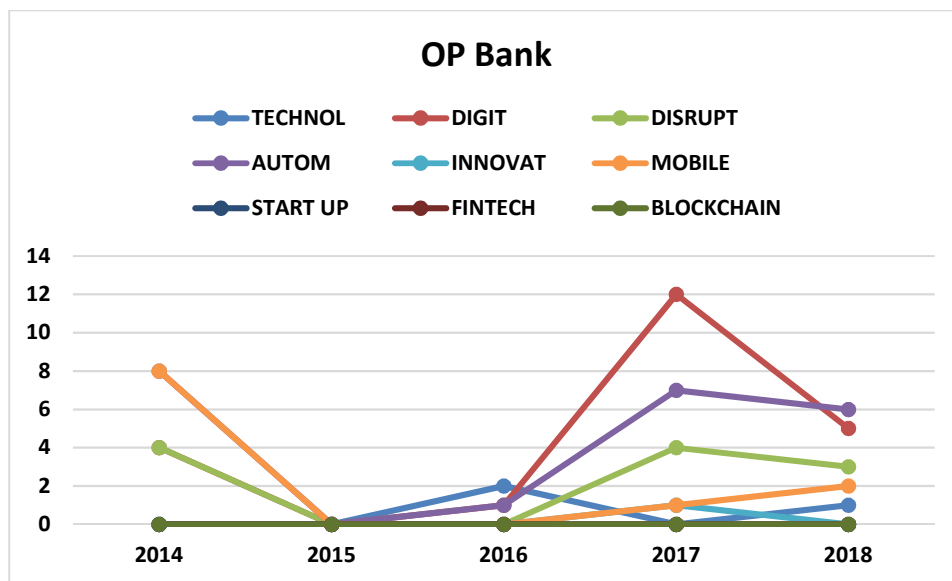


Figure 12: Number of mentions OP Bank

This means that while comparing the amount of what OP Bank reported in 2014, relatively few concrete statements are made in line with its future development, while looking at the bank's 2018

annual report. Thus, it stands out that the bank disclosed very little in regards to its past development and future strategy in 2018. This makes it arguably difficult to identify the successfulness of OP Bank's development plans in 2014. In spite of that, the company has stated that further development and the usage of digital services is on its agenda, which arguably represents the bank's reaction. In short, one could say that OP Bank did have plans to adapt to the changing environment in 2014, yet in 2018, due to the little amount of information that is disclosed it is difficult to verify this.

4.7 SEB

4.7.1 Annual report 2014

While scrutinising SEB's annual report for the year 2014, numerous observations can be made. First of all, as stated, in terms of **in-house development**, SEB focused on the improvement of services and the accessibility of its customer offering. According to SEB, this focus enabled the bank to further simplify and improve the efficiency of its processes and operations. The bank stated in 2014, that it is at the forefront of developing innovative 24-hour mobile banking technologies. In other words, the company argued that it focused on improving its digital services in 2014, e.g. by upgrading its mobile banking services, by continuously improving and simplifying savings offerings, and by seeking to find solutions to enhance its financial infrastructure.

In other respects, as reported by SEB it joined forces with *Visma's AutoPay* system. This **partnership or collaboration** is focused on the automation of payments between corporate clients' business systems and the bank's. Notably, SEB further argued that it is the first bank to establish this specific collaboration with *Visma*. Besides, SEB mentioned that it has rolled out an *innovation lab* in the Baltic region, which is also aimed at improving its relationship with corporate customers. This innovation lab enables workshops for networking, discussions, and assistance in problem-solving, and further encourages innovation internally and externally, as interpreted from the banks' annual report. Thus, in essence, it provides direct support to companies that aim to develop new products that are in line with FinTech innovation as underlined earlier by EBA (2017).

Concerning **investments and acquisitions**, SEB did not make any (non-)concrete statements. Lastly, in terms of tech-savvy related initiatives, SEB disclosed that it has established several partnerships and co-operations with organisations that aim at inspiring and supporting young people. Lastly, related to the **tech-savvy personnel** category, SEB stated that it aspires to put more emphasis on the development of its managers and employees, as the firm sees this as a part of its social duty, yet this statement is not focused solely at digital-savvy staff.

4.7.2 Annual report 2018

In 2018 SEB disclosed extensively about its current developments, collaborations, investments and acquisitions, and digital-savvy personnel. At first, regarding **in-house development**, SEB reported that it works closely with vendors to integrate systems, including, e.g. a payroll system that is utilised to automate the payment infrastructure. Besides, SEB stated that it focuses on enhancing its new digital signing up process while ensuring this is in compliance with corporate and regulatory policies in an automated fashion. Besides that, SEB stated that it has been an early adopter of FinTech in Latvia by enabling instant payments within this region. SEB also said in its annual report that it has launched a new digital advice tool that offering clients enhanced personal savings analytical functions.

In general, the bank stated that it aims to better respond to customer needs by using insightful data and new technologies to optimise interactions. Also, that these technologies will shortly be to digitalise further by automating customer journeys, and to improve efficiency to save costs, and increase the productivity of its labour force. Moreover, SEB claimed that it accommodates better risk management and product distribution, with the use of *cloud-technology*, *machine learning*, and *algorithms*. SEB argued that these new technologies provide new capabilities to identify suspicious activities and improve transaction reporting. SEB is aware of new technological developments, and it stated that the “digital revolution is impacting many aspects of society. Business models, relationships and 'economic truths' are being re-examined” (SEB, 2018b, p.6). SEB further addressed concepts such as *open banking*, *APIs*, *blockchain*, *AI*, and *IoT*, and underlined that this will be game-changing, by exemplifying that “AI will be a game changer in the banking sector when it comes to providing advice based on data analysis” (SEB, 2018b, p.6). SEB also addressed the changing regulatory environment, by referring to PSD2. Lastly, SEB

mentions that it has designed a new initiative to address (new) customers with its *SEBx* project, which is a strategic initiative to explore new technologies, alternative technical platforms and customer offerings.

In regards to **collaborations and partnerships**, SEB commented that it has established a partnership with *Visma Autopay*, as noted before in 2014. In addition, regarding *open banking*, SEB stated that it now also collaborates with *Capcito* and *PE accounting*, which are FinTechs. *Capcito* offers an online service tool through which companies can integrate business systems with an external party, which in essence offers clients to gain a better overview of their cash flows. Lastly, SEB stated that it has set up a collaboration with *Base10*, which is a startup hub where technology companies can meet aspiring entrepreneurs. In short, SEB mentioned that it believes to enhance its customer offering through partnerships. For this reason, the bank is aiming to continue to engage in new partnerships, e.g. by participating in industry initiatives related to *blockchain*, *open banking*, and other new technologies.

Regarding **investments and acquisitions**, SEB's provided little information, but it stated that it intends to invest in FinTech companies and initiatives with its venture capital subsidiary. This is planned action is motivated by the belief that new relationships can be fostered and current customers can be better served.

At last, SEB stated that it aims to strengthen its level of attractiveness to external IT talent otherly referred to as, **tech-savvy personnel**. The bank partly tackled this through the establishment of a partnership with a Swedish university. Besides, the firm stated that it has expanded its network and talent pools through IT specific recruitment fairs, as well as by organising hackathons, IT fora, and entrepreneur/talent camps. Aside, SEB stated that it has also developed a unique IT talent programme, which has attracted more than 100 digital-savvy specialists. At last, the company argued that in order to advance with the innovation of its digital services, it emphasised that the development of its employees and the attraction of top talent for is crucial for the firm's future success

4.7.3 Analysis

After observing qualitative data for SEB, one can argue that most of the search terms are mentioned quite moderately. In relation to the quantitative data, one can discern that the usage of most search terms has steadily increased over the years, a similar trend can arguably be displayed by observing the qualitative data.

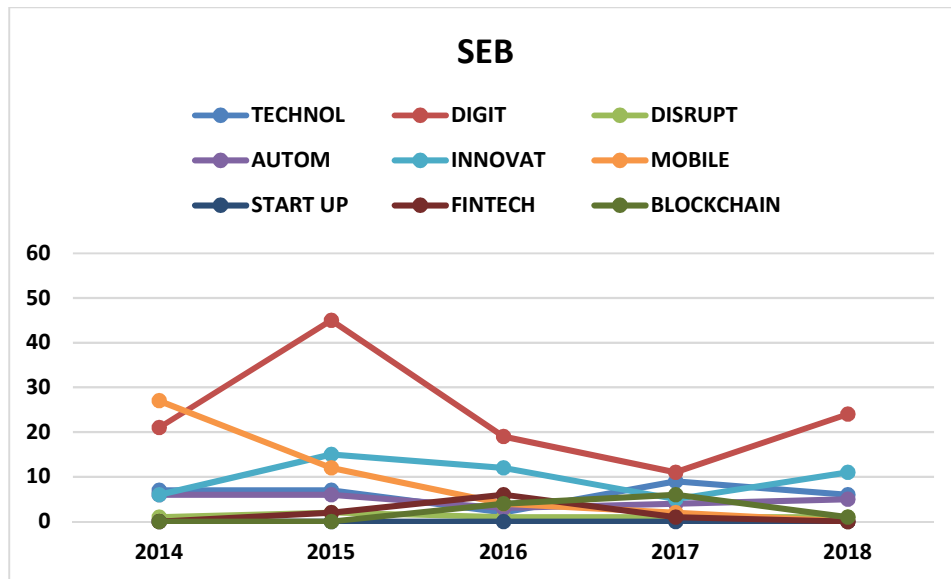


Figure 13: Number of mentions SEB

Notably, in 2014 it can be gleaned that SEB disclosed a fair amount on digitalisation, automatisisation, innovation, and mobile banking services. The bank has put significant focus on the optimisation of its (corporate) payment infrastructure, which is displayed through e.g. its partnership with *Visma's*. This can be regarded as evidence of SEB's perception towards the power of collaboration with other parties to find solutions to upgrade its financial infrastructure together with other industry participants. Next, the bank emphasised that it has focused on improving its mobile banking services, and while comparing this finding to 2018, then it could be said that SEB is still (continuously) doing its best to enhance digital capabilities for its clients. Also, by disclosing that it developed and optimised wide-ranging customer offerings and new services related to analytics, and payments.

Furthermore, in 2014, SEB disclosed that it tried to captivate innovation, this is illustrated, e.g. in the form of a new innovation lab establishment in the Baltics. Whereas, in 2018, the bank debatably progressed further and addressed a striking amount of FinTech related concepts, namely, *open banking, APIs, blockchain, AI, IoT*. From this perspective, one could even argue that SEB is aware of new technologies by mentioning that they will be game-changing. Regardless, SEB is not concrete and specific how each of these concepts is used internally, or, i.e. how these technologies will be integrated within the bank's future development strategy. To exemplify this, the bank stated in 2018 in its digital development section that "Banks with quality services also have the opportunity to use Open Banking to reach new customers" (SEB, 2018b, p.6), and that "AI will be a game changer in the banking sector when it comes to providing advice based on data analysis" (SEB, 2018b, p.6). In short, these findings debatably highlight the bank's understanding of the future impact of these aforementioned FinTech related innovations, yet it does not display how it will concretely implement these capabilities, aside from stating that "we aim to better respond to specific customer needs and behaviours by applying new technology and enhancing the use of data in all our customer interactions" (SEB, 2018b, p.3). On a side note, this belief also corresponds with PwC's (2016b) statement that *blockchain* technology can turn the traditional system upside down.

Further, noteworthy, SEB's stated in 2018 that the industry's regulatory landscape is changing, and refers specifically to PSD2, which was acknowledged by McKinsey (2017) to inescapably contribute to the further evolvement of FinTech disruption, particularly in line with the EU's newly enforced PSD2 regulation, as mentioned earlier. SEB also addressed GDPR and IFRS. The bank is concise in regards of displaying how it will react to these changing conditions, e.g. by mentioning that "New technologies provide SEB with new capabilities to identify suspicious activities and improve transaction reporting" (SEB, 2018b, p.6).

As mentioned in the findings, regarding investments and acquisitions, SEB has not made (non-)concrete statements in 2014. This is notable while considering that in 2018 SEB disclosed far more about its partnerships and specific investments, by explicitly revealing about its collaborations with external parties.

Furthermore, in terms of attracting and retaining technically adequate personnel, the bank did emphasise the importance of the development of its managers and employees in 2014, including the process of inspiring and exciting young talent, yet the announcements do not specifically relate to tech-savvy personnel. Also, the bank might have emphasised the importance of it, yet the firm did describe any measures that have been taken to address this challenge. Interestingly, on the other hand, in 2018, the bank reports very broadly about how it tackles the need for digital-savvy talent, and how it copes with this matter. It seems as if the bank has made a significant effort to attract, inspire, new (tech-savvy) employees, and to further boost its reputation in the industry. This is displayed through the instrumentality of different measures that have been described in the findings section.

4.8 Storebrand

4.8.1 Annual report 2014

After observing the 2014 annual report of Storebrand, it is discernible that the bank reported relatively little about its **in-house developments**. The bank did note that it will focus more on working towards reducing costs and increasing the degree of automation, which is illustrated by quoting that “to strengthen the level of competitiveness and improve cost effectiveness, an active effort is being made to increase the degree of automation, digitisation and sourcing of services, as well as the utilisation of the economies of scale provided by increased volume” (Storebrand, 2014, p.28). This comprises of everything that is stated and is regarded as relevant in Storebrand’s annual report. Also, since Storebrand did not report anything in connection to **collaborations and partnerships, investments and acquisitions**, or **tech-savvy personnel** policies. Neither in a concrete manner nor in-concrete manner. Although the bank did make a general statement concerning the development of talent by stating that “HR has a sharp focus on equal opportunities, development of talent, job satisfaction and a good working environment” (Storebrand, 2014, p.12), yet this is not focused on tech adequate personnel in specific.

4.8.2 Annual report 2018

In Storebrands’ 2018 annual report, the bank reported that it has remained to concentrate on developing new products and digital services, in terms of the **in-house development** to satisfy

customer needs. Also, Storebrand stated that it will seek to increase the degree of automation in customer and work processes within the following years. By stating the following, “Storebrand will continue to make selected investments in growth initiatives. Digitalisation, automation and our partnership with Cognizant are expected to provide reduced costs for the Group over the next few years” (Storebrand, 2018, p.80). The firm announced that it “launched the pension robot Gajda, a digital tool that guides the employees through the various pension elements and helps them make the right decision based on their life situation” (Storebrand, 2018, p.9).

Apart from that, relevant to **collaborations and partnerships**, Storebrand disclosed that it has established a partnership with *Dreams* among other FinTechs, by stating that “In 2018, we also entered into several fintech collaborations, including as part owner and partner of the savings app *Dreams*” (Storebrand, 2018, p.5). This is a technology company that “Through an understanding of behavioural psychology, [...] makes digital savings easy and fun” (Storebrand, 2018, p.5), in addition it noted that “they were awarded as one of the 100 top fin-tech companies in the world in 2018” (Storebrand, 2018, p.5). Moreover, Storebrand did not mention anything specific about other **investments and acquisitions**, next to becoming co-owner of the FinTech *Dreams*.

Furthermore, the firm arguably coped mildly with the challenge of attracting and retaining **tech-savvy personnel**, according to its statements. Since it reported that “our employees are our most important resource for delivering on ambitious business goals” (Storebrand, 2018, p.48). Also, it disclosed that the firm had several initiatives to train its staff through a “digital programme for middle management” (Storebrand, 2018, p.48), which is called the “Technology-based Management Development” (Storebrand, 2018, p.48). Concerning the appeal of new talent it noted that it established an “internship programme Sandbox” (Storebrand, 2018, p.48), and that it has attracted students with technology backgrounds through this programme.

4.8.3 Analysis

As discernible in the figure above, Storebrand has relatively few mentions related to the search terms that are utilised within this study, but this arguably rocketed after 2016.

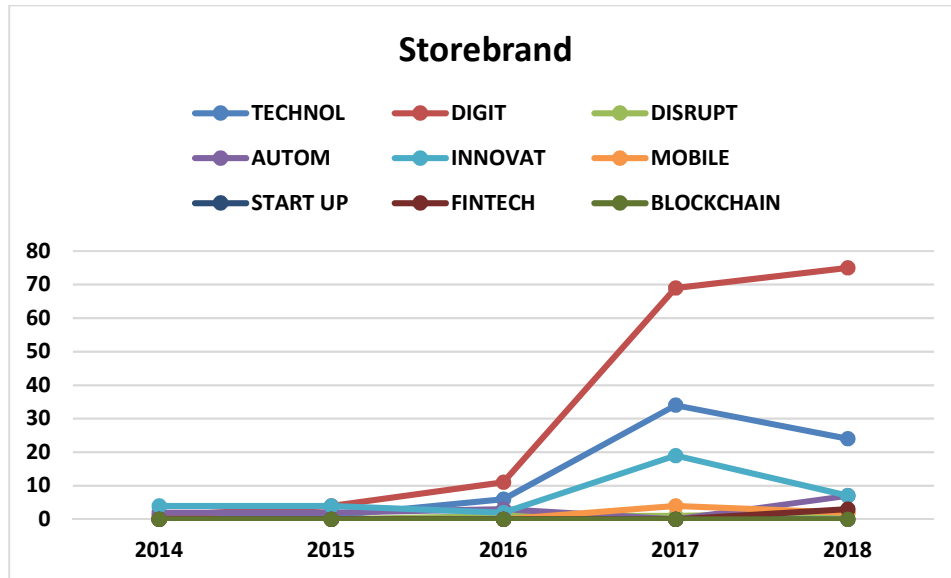


Figure 14: Number of mentions Storebrand

Afterwards, while scrutinising the two annual reports of Storebrand, an increase can also be identified in the year 2018. The bank did make a comprehensive statement in 2014 connected to its aim to focus more on lowering costs, by optimising processes in the period following 2014. One could further argue that it seems as if the bank is aware of concepts like ‘automation’, ‘digitalisation’, as well as ‘FinTech’ in both 2014 and 2018. In 2014 Storebrand is very concise about its transformation, as one could discern that the bank arguably reported little about its strategy and past developments. Whereas, in 2018 it published in a more concrete manner about new co-ownerships, investments, as well as its development and attraction of talent. This could be demonstrated through the establishment of the internship programme, and the partnership that was created with *Dreams*. One could, therefore, debate that in 2018 Storebrand has become more proactive towards the capabilities that FinTech seem to offer, as well as the necessity of talent by reporting significantly regarding this, in a concrete manner at least.

4.9 Swedbank

4.9.1 Annual report 2014

After analysing the 2014 annual report from Swedbank, various observations can be made. In regard to **in-house development**, Swedbank stated that it has focused on developing new products

not only, for its retail customers, but also for its corporate clients. Swedbank exemplifies this by noting that it has launched new payment services for SMEs, by introducing the *Babs Micro* device. Also, it stated that it is on the verge of introducing new online and mobile payment tools called *Masterpass*, which it has launched tests before 2014. Swedbank believes that the mobile payment services area is an essential growth area in the near future. Besides, it reported that its new products developments fall within the scope to attain economies of scale and cost-efficiency. Thus, in general, aim to enhance the provision of customer service. Therefore, it seeks to digitise more services to stay attractive and to meet customer demands. Further, Swedbank announced that it also focused on upgrading existing services, and refers to its mobile bank app that enables customers to easier keep track of spending. Besides, Swedbank noted that it has upgraded its digital-mortgage and digital-lending offering capabilities. Also, it stated that “In 2014 the bank invested in a number of IT and system upgrades related to e-commerce” (Swedbank, 2014, p.28). At last, the bank stated that it has launched a project called “Sweden’s smallest bank” (Swedbank, 2014, p.24), which is there to explain how the digital functions make banking easier.

Moreover, in terms of **collaborations and partnerships**, Swedbank arranged annual growth days, where it brought together local businesses, politicians, academics, civil society, and opinion leaders to seek potential partnerships and solutions to tackle future challenges. At the same time, in regards to **investments and acquisition**, Swedbank noted that it has invested in digital channels and customer offerings for approximately €18 m.

In other respects, the bank has disclosed related to the **tech-savvy personnel** category that it aims to offer its employees a high level of personal and professional competence development. The firm argued that its customers will benefit from employees who can continuously develop and gain experience within different divisions of the corporation, as this will ultimately lead to better product and service offerings. Furthermore, the bank stated it has launched a project named “Young Jobs project” (Swedbank, 2014, p.16), where it has created more than a thousand jobs for young people. This is believed to be a critical element for future development, according to the organisation.

4.9.2 Annual report 2018

While taking a closer look at Swedbank's 2018 annual report, the following observations can be made. Starting with the statements that are relevant to its **in-house development** of innovations. The bank has introduced a digital smart-ID authentication method in the Baltics and Sweden. Next, it developed an instant payment application in the Baltics. Besides, the bank has developed a virtual assistant for its mobile application to provide an enhanced automated and digital customer service, which is established by the usage of *AI*. Further, the bank also noted that it has focused on enhancing other digital processes, through shorter processing times and improved internal efficiency. Swedbank believed to have achieved a great deal of digital transformation in 2018 by meeting its customer expectations, yet it intends to further reinforce its digital channels by further adapting to the constantly changing digital banking landscape. Swedbank mentioned that this intention will be lived up through increasing the usage of *robotics* in advisory services to its customers, as well as by using *AI* to thoroughly analysing and to take better advantage of existing customer data.

Furthermore, Swedbank published that it is determined to combine efforts with other external parties, related to **collaborations and partnerships**. It noted that it has allied with *Asteria* a FinTech company that offers more efficient administration and financial planning tools for its corporate customers. Besides, the firm announced that it has partnered up the firm *Meniga*, by investing € 3 m. in the FinTech company. Swedbank describes that it has been collaborating with *Meniga* since 2017. Swedbank made clear that collaboration is a crucial form of business development. In line with this belief, the bank also emphasised that not everything can be developed in-house. Consequently, it also has also established a co-operation with a FinTech company called "Mina Tjänster (My Services)" (Swedbank, 2018, p.11), which operates in a number of areas, and ultimately concentrates at offerings upgrades and enhancing product availability. In addition, Swedbank has set up a partnership with *Erply*, a payment and e-commerce company that facilitates e-accounting capabilities and *open banking* in the Baltics. Lastly, in Sweden, the bank states that it now collaborates with, *Speedledger*, which is a payment and e-commerce firm, *Samsung Pay*, a mobile application empowering cardless payments, and *Masterpass*, which is a digital wallet that enables customers to make payments.

Moreover, in terms of **investments and acquisitions**, Swedbank's CEO and Board of Directors disclosed in its annual reports that the bank has acquired the company *PayEx*. This company provides e-commerce payment solutions. Swedbank group acquired all shares of *PayEx* for approximately € 126 m. in 2017, and through this acquisition, Swedbank did enable its retailers to gain access to a new range of services. Besides, Swedbank noted that it has acquired a 6 % share of the FinTech company *Meniga* for approximately € 3 m. Swedbank has made this acquisition to provide its customers with a more personalised activity feed of the bank's digital channels and better control of their everyday finances.

Besides, Swedbank reported that it acquired a 14 % stake of the shares of Asteria for € 600k. Concurrently, Swedbank announced that it has also invested in the firm *Minna Technologies (Mina Tjänster AB)*, and bought a stake for approximately €1 m. Furthermore, Swedbank reported that it will accelerate investments, by putting more of its resources into digitalisation and automation of everyday banking services. The bank believes that by continuously investing in products and channels, it can enhance its competitiveness and overall value. Aside from that, from the extracted data and annual report analysis, nothing is specifically mentioned related to how Swedbank is coping with the attraction and retention of **tech-savvy personnel**.

4.9.3 Analysis

As visible in figure 15, Swedbank quite extensively mentions its digital innovation and FinTech related concepts in a stable and persistent manner over the years.

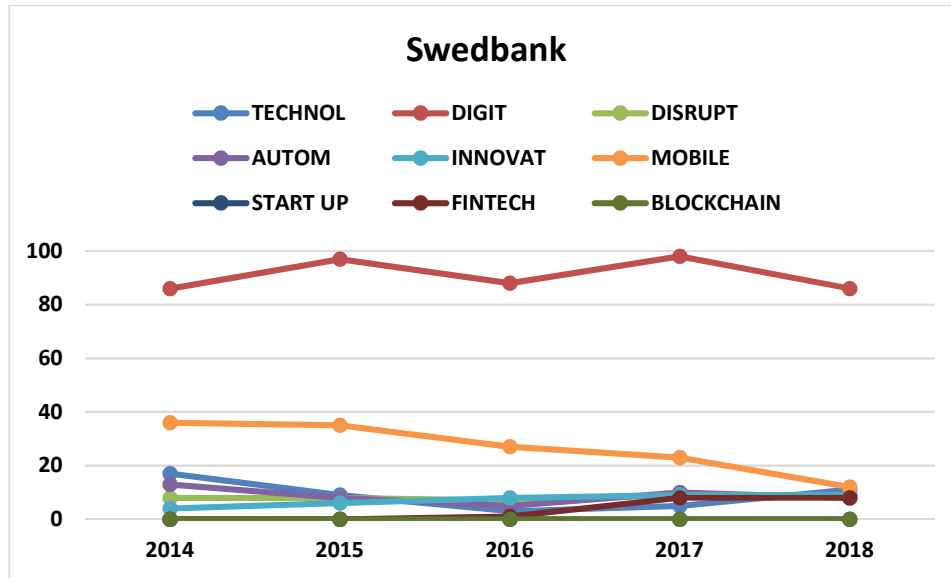


Figure 15: Number of mentions Swedbank

While taking a closer look at what Swedbank discloses in their annual reports, one can observe that in 2014 a lot is mentioned in regards to its in-house product developments, namely, *Babs Micro* and *Masterpass*. It states that “Digital solutions simplify our customers’ everyday banking” (Swedbank, 2014, p.26). Thus, one could say that Swedbank puts a strong emphasis on digitalisation and optimisation of its products and services, to enhance customer offerings. In accordance, it disclosed a fair amount of concrete and less-concrete related statements. Interestingly, in 2014, the bank announced that it launched a project called “Sweden’s smallest bank” (Swedbank, 2014, p.26), which at first glance looks as if Swedbank settles upon heavy automatisisation, but it only has the intention to explain how the current digital functions work.

On the other hand, in 2018, Swedbank displays that it remains to put strong focus on digital development, as Swedbank states for instance that “We accelerated investments during the year to ensure that we stay competitive long-term and increase customer value by putting more resources into digitisation and automation of everyday banking services” (Swedbank, 2018, p.6). Thus one could argue that this implies that the bank is forward-looking and doing its best to embrace new technological innovations to stay competitive. In 2018 Swedbank announced that it believed to have achieved a great deal of digital transformation so far to meet customer expectations and that it will continue to complement to the increasingly changing digital banking landscape by

continually upgrading its digital channels. Swedbank disclosed about FinTech related developments, namely, authentication, *robotics*, *AI* and *open banking*. Interestingly, Swedbank addressed what kind of technology is utilised to enhance its customer services offering, by stating for instance that it “improved savings and pension offering, through greater use of robots in our advisory business” (Swedbank, 2018, p.11). This is notably, different compared to what other banks disclose, in terms of precision.

Swedbank is arguably one of the few banks that disclosed in a transparent matter about its collaborations, partnerships, and investments with numerous FinTechs. This transparency is illustrated through reporting about specific investment figures, percentual ownership stakes, and collaboration names. One could, therefore, argue that Swedbank in terms of the quantity and quality of the information that is disclosed, Swedbank arguably most adequately reacts to the changing digital landscape and new technological innovations. This statement is at least made upon the comparison to what most other banks have disclosed. Also considering, earlier statements made by Gomber et al.’s (2018), who introduced and highlighted that embracing disruption is critical to effectuating cutting-edge innovation, and states that this should be done through integrating disruptiveness into organisational strategies, which seems to be adequately addressed in the case of Swedbank.

As much as, Swedbank reports about collaborations and investments, it did not disclose anything relevant in 2018 regarding how the firm did or will cope with attracting and retaining tech-savvy personnel. Though in 2014, the bank reports about its *Young Jobs project*, however, the bank did not explicitly emphasise that this is directed towards technology competent staff.

4.10 Summary

To sum up the findings from the sample banks, in the following several overall findings that can be applied to the entire sample will be summarised.

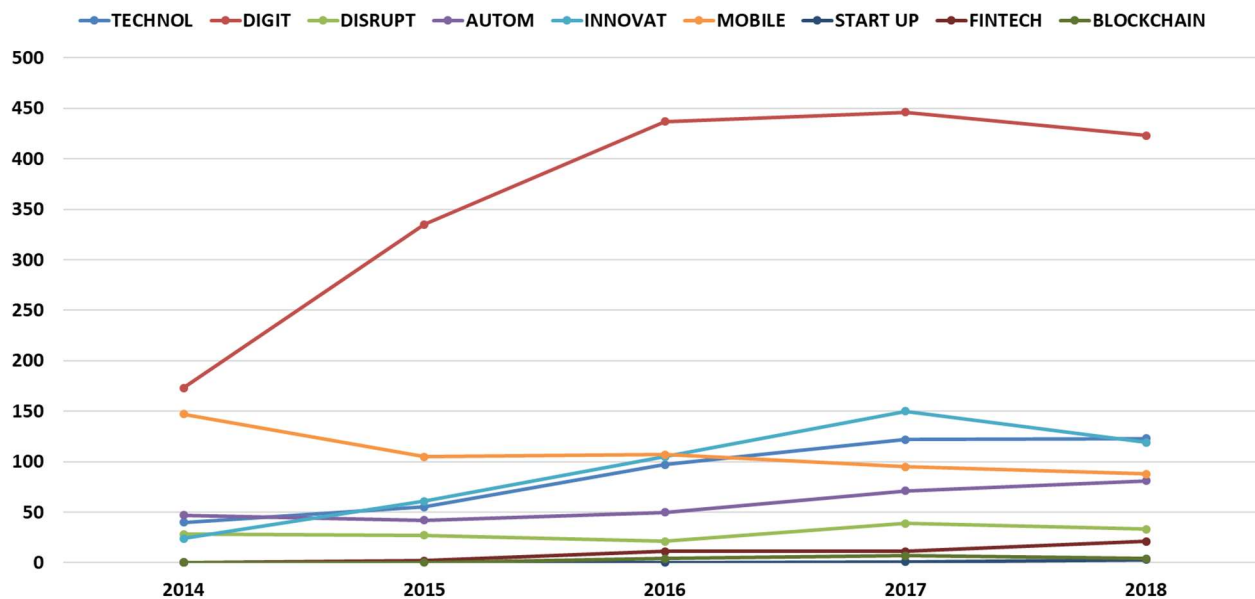


Figure 16: Number of mentions all sample banks

Above, Figure 16 displays the number of mentions of the specific search terms in the time span between 2014 and 2018 for all sample banks (for a table of the exact number of mentions per bank and per the respective annual report, see Appendix 1). In more general terms, the graph underlines the increased significance of the topic of digitalisation for Nordic banks, a notion that could also be detected in the qualitative analysis of relevant text parts. When it comes to the four categories that were applied to the extracted mentions, a couple of assumptions can be made.

Starting with the first category of **in-house development** of relevant technology it can be stated that the majority of the sample banks is involved in developing their business from within, meaning that either new technology is introduced through new products or services, or the existing landscape is updated through internal efforts. Also, a higher share of non-concrete mentions could be detected, demonstrating that the sample banks were working on optimising and developing technology, but most of the time not specifically disclosing concrete new services or product that originate from these actions.

Moving on to **collaborations and partnerships** with FinTech companies and other external parties, several banks have reported about their partnerships with FinTechs, thereby incorporating additional services into their existing portfolio. All partnerships Nordic banks entered in were exclusive with FinTechs of the region, displaying a close connection between the industries in the Nordic region.

As with the former category, the mentioned **investment and acquisitions** of FinTechs also aimed at incorporating particular technological capabilities in the banks' existing products and services. It has to be noted that mentions in these two categories were almost exclusively concrete and explicitly disclosed the specific companies banks collaborated with or invested in, which then again makes sense when considering that annual reports are also used to for advertisement purposes and to display new products to customers.

Regarding the last category, retaining and attracting **tech-savvy personnel**, only limited disclosure could be found for all banks of the sample. Whereas only a few banks acknowledged the topic as being significant going forward and kept it rather vague when disclosing about their own actions, the majority of the sample neglected the topic and did not mention it at all in their annual reports. Although a few banks did somewhat emphasise the importance of attracting and developing staff, in most cases it was not specifically aimed at digital competent personnel. Also, by looking at the amount of disclosure in 2014 and 2018 in relation to this topic, one arguably could also identify an increase of awareness of the years by taking into account the full sample size.

5. CONCLUSION

5.1 Discussion of the Research Question

Having analysed and summarised the findings for all sample banks, the following chapter aims at bringing together the most significant discoveries in a comprehensive manner to ultimately answer the research question stated in Chap. 1:

How do established banks in the Nordics react to the threat of FinTech disruption?

As described in Chap. 2 and 3, the annual reports were analysed using defined search terms and consequently a developed framework, that lists in-house development of relevant technology, investment in/ acquisition of FinTechs, collaborations with FinTechs, and retaining/ attracting of tech-savvy personnel as categories for possible reactions, was applied to the extracted mentions. Based on the investigation and analysis performed in Chap. 4, several conclusions can be drawn that qualify to answer the research question of this study:

1. All banks of the sample have realised the threats and disrupting effects originating from FinTech and have reacted by adapting their business model in a way, some more drastic than others.
2. Even though the majority of the actions can be clustered in the four categories of the framework of this study, banks tend not to exclusively think in those categories but rather use a cross-thematic approach combining more than one type of action.
3. In general, far more mentions than disclosed actions could be detected, implying that potentially a “checkbox-ticking” practice of relevant buzzwords is performed in the annual reports.
4. The focus of the sample banks is on developing technology in-house, collaborations with FinTechs, and investing in FinTechs, whereas the importance of a digitally educated workforce is still neglected in large parts with the exception of DNB, Nordea, and SEB.
5. When it comes to more sophisticated and advanced technology such as *robotics* and *blockchain*, only Swedbank and Nordea disclose concrete measures that were taken, the

remaining banks of the sample have not acted yet according to their annual reports and some, such as SEB only emphasise the importance of these industry-wide trends.

The presented findings serve as direct answers to the research question by stating the detected reactions of Nordic banks to the emergence of FinTech. This study and its research therefore provide a comprehensive overview as well as an analysis of these actions, making it useful for banks in this or any other region to consult and examine whenever it comes to reactions to the emergence of FinTech. As a lack of academic studies was identified in Chap. 1, this paper contributes to the understanding of strategies employed by Nordic banks. This is especially significant when considering the high standard of innovativeness and the pioneering role of the Nordic region as established by Schwartzkopff (2018), OECD (2018), and Deloitte (2017b). Assuming that the technological progress is somewhat more advanced compared to other regions, the development in the Nordics can be deemed as foreshadowing for what is to come in the rest of the world when it comes to the implementation of digital solutions in banking on a broad scale.

When comparing the findings of this study to what was found in the literature review of this paper, several connections and contributions can be established. Firstly, it can be stated that according to the framework provided by Puschmann (2017), the majority of the technology originating from banks' in-house development can be labelled as incremental as opposed to disruptive innovation. This can be supported by the fact that most banks in this regard disclose about automatisations, optimisations, and updating existing customer offerings. Another significant finding concerns the way incumbents and FinTechs work together. As suggested by Gomber et al. (2018) and Strategy& (2015), the availability of capital is critical to unfold future-forward development and business model transformation, a notion that can be backed by many incumbents entering into partnerships with FinTechs, hoping that by providing capital and other resources, services can be further developed on a larger scale and implemented into their business model. Moreover, Bhat, Krishna and Santhana (2018) expected banks and FinTechs to work together more closely instead of competing in the future, an impression that can already be backed by the findings of this study. As opposed to Strategy& (2015), Graham (2018), Haddad and Hornuf (2018), who emphasise that access to both talent and expertise is also crucial to develop innovative ideas, Nordic banks do not seem to have realised this importance to an extensive degree, at least according to their disclosures,

as evidenced by the banks' lesser focus on the talent category of the framework. Another common belief from the literature that could not be detected on a large scale is that despite the applied Sandbox regulation regime it is also difficult to see whether startups were less collaborative with incumbents in Denmark, in accordance with Accenture's (2016) study, which argues that whenever regulation is favourable to establish business more easily, FinTechs engage in fewer collaborations.

5.2 Research Implications

Based on the limitations of this study, there are several recommendations for future research that can be made. First and foremost, the most obvious suggestion for future studies is to expand or change the geographical region. This could enable researchers to compare the behaviour of banks in different markets and identify potential differences. This area could further be exploited by investigating reasons for the discrepancy in actions disclosed in annual reports.

Another direction of study could be pursued by comparing statements in annual reports to actual verifiable actions a couple of years after the announcement. As outlined above, a verification regarding the truth of the disclosure was not in the scope of this study, thereby leaving room for further studies to review statements and investigate the truth of them sometime after they were made. In addition to that, the time intervals between annual reports could be shortened, which might be of special interest going forward, as FinTechs will become even more important and momentous in the next years, arguably resulting in even shorter and faster innovation cycles. FinTechs will further pose challenges to the established banking sector in every region of the world.

5.3 Practical Implications

To capitalise on the potential of FinTech and to nurture a FinTech ecosystem one could argue that banks are advised to take different measures based upon the results of this study. At the outplace, change is arguably driven by critical elements, namely, regulation, changing consumer behaviour and technology within the banking industry, as displayed earlier by Gomber et al. (2018) and Strategy& (2015). Therefore, in order to embrace the capabilities surrounding FinTech, and to help establish not only incremental innovation, but also disruptive innovative change, one can deem

that it is evident to put more emphasis on the elements that are examined to be crucial on an industry-wide scale in regards to the future success of (new) business activities. Understanding this implication well enough can arguably positively alter the incumbent's business model, products or services, processes, systems, and organisation (Puschmann, 2017).

Another preceding element to be taken into account is access to tech-competent talent and diversity. Incumbents should be admonished for the magnifying need of both techno-dexterous talent and heterogeneity. It seems as if most Nordic banks still seem to underestimate this significance, which can be endorsed by the striking evidence presented that relatively few banks within the sample have a propensity to address and report about this adequately. Adding to this notion, one can say that it resembles as if the examined Nordic banks do not report sufficiently about improving their reputation in relation to other (competitive) industries, e.g. the tech-industry that possibly endangers the talent acquisition of high-potential tech-talent, by for instance offering better employment conditions, and also because they are arguably more innovative in nature, give employees a deeper sense of purpose and offer a lot of flexibility as highlighted by Schawbel (2017).

In conducting this research, a sense of commitment is discovered among banks, as well as the vision to re-imagine the business model to tackle the challenge of future foresight. As previously presented, partnerships and collaborations are ought to be placed more in the centre of attention of incumbents (Bhat, Krishna & Santhana, 2018). One could underline the growing importance to take more steps in this vein, ideally done in coordination with one another. One can conceive that placing more emphasis on this pursuance could contribute to open innovation, as well as provide better integration within the FinTech ecosystem, which in turn could help to share existing challenges that again FinTechs can uncover solutions for. Furthermore, collaboration should not only target FinTechs, but also governments, since governments are able to prioritise regulatory initiatives that alleviate existent barriers to disruption and innovation. Derived from the results, one can deem that incumbents have not disclosed much regarding this opportunity.

Moreover, in-house development of technology arguably leads to meticulous development and innovation, since it ignites optimisation and incremental changes, whereas the concept FinTech itself is regarded to be more disruptive (In & Yong 2017; Poenisch, 2017). Following up on the

earlier argument that technology-driven innovation and development has been around consistently, and the framework provided by Puschmann (2017), it seems as if the majority of incumbents have prioritised a more incremental form innovation, e.g. through enhancing, automating, and optimising current business activities and other capabilities over disruptive innovation.

Still, incumbents seem to have become more proactive with their collaborative initiatives and investments according to the findings. Though relevant to acquisitions and investments, one could argue that incumbents should put more weight on further prioritising potential mergers, acquisitions, and joint ventures. Banks should not undervalue the potential power of these measures, as large organisations engaging in external technological solutions and expertise of outside innovators can boost new ideas generation and be a catalyst to discover new areas for growth (Haddad & Hornuf, 2018). This can also connect incumbents with innovation experts and experienced people that possess the right expertise, which in turn could lead to creative thinking and collaborations that move away in diverging directions involving a variety of aspects, which sometimes lead to novel ideas and solutions (Accenture, 2018).

5.4 Limitations of the Study

As with every research project, there are certain limitations that have to be considered when consulting the results of the study. First off, it has to be stated that the study was solely concerned with banks from the Nordic region. Therefore, results can only be deemed representative for this specific geographical region and its local banks. Still, within this region, the chosen sample is believed to be suitable, allowing to draw conclusions regarding the market as a whole, the sample banks covering the majority of the associated countries as well as representing the majority of the market due to their size and significance.

Also, it has to be noted that an assessment of the perceived truth of the statements made in the annual reports was not performed. The disclosed information was analysed at face value with no further interpretation whether the statements contained truth in them or not. Furthermore, there are also certain limitations arising with the chosen research and design. The fact that the ultimate findings were gathered using a manual process leaves the possibility of the researchers overlooking a statement that might be relevant in the context of the study. Still, this risk was minimised by

filtering every single mention of the search terms with the help of the used software, making it rather unlikely to have missed significant notifications regarding the subject matter.

Lastly, the nature of the topic of the study might arise a limitation with regards to the validity and accessibility of the sources for the theoretical background in Chap. 2. Due to the current status and the rapidly changing FinTech landscape, sources might become outdated rather quickly. Also, since the incorporation of newspapers articles, websites, and corporate reports is used as a foundation within this thesis next to journal articles, it could be that the accessibility of this information becomes unavailable in later stages, and consequently cause complications in the event that fellow researchers do intend to follow up on (certain parts of) the study (Bryman & Bell, 2011).

LIST OF REFERENCES

- Accenture (2015).** The Future of Fintech and Banking: Digitally disrupted or reimaged? [pdf] Available at: https://www.accenture.com/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_11/Accenture-Future-Fintech-Banking.pdf#zoom=50 [Accessed 29 April 2019]
- Accenture (2016).** Fintech and the evolving landscape: landing points for the industry [pdf] Available at: https://www.accenture.com/_acnmedia/PDF-15/Accenture-Fintech-Evolving-Landscape.pdf#zoom=50 [Accessed 29 April 2019]
- Accenture (2018).** Digital disruption in Nordic retail banking [pdf] Available at: <https://www.accenture.com/se-en/digital-disruption-in-nordic-retail-banking> [Accessed 29 April 2019]
- Alt, R., Beck, R. & Smits, M.T. (2018).** FinTech and the transformation of the financial industry, *Electronic Markets*, vol. 28, no. 3, pp.235-243
- Andersen, S. (2011).** The evolution of Nordic finance, [ebook] Houndmills, Basingstoke, UK: Palgrave Macmillan. Available at: <http://search.ebscohost.com/login.aspx?direct=true&db=cat07147a&AN=lub.1972592&site=eds-live&scope=site> [Accessed 14 May 2019]
- Anwar, S.T. (2015).** Communicating with shareholders in the post-financial crisis period: A global perspective, *International Journal of Commerce and Management*, vol. 25, no. 4, pp.582-602
- Arellano, C., D'Silva, V., Gabriel, M., & Potter, J. (2018).** Hidden figures: The quiet discipline of managing people using data, McKinsey Financial Services. Available at: <https://www.mckinsey.com/industries/financial-services/our-insights/hidden-figures-the-quiet-discipline-of-managing-people-using-data> [Accessed 29 April 2019]
- Arner, D. A., Janor, B., Ross, B., & Zetsche D. (2017).** Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation, *Fordham Journal of Corporate & Financial Law*, vol. 23, no. 1, pp.31-103
- Arnold, M. (2018).** Five ways banks are responding to the fintech threat, *Financial Times*, 12 November 2018. Available at: <https://www.ft.com/content/d0ab6b84-c183-11e8-84cd-9e601db069b8> [Accessed 29 April 2019]
- Banfield, E.C. (1958).** The Moral Basis of a Backward Society. New York: The Free Press.
- Beatty, A. & Liao, S. (2014).** Financial accounting in the banking industry: A review of the empirical literature, *Journal of Accounting and Economics*, vol. 58, no. 2-3, pp.339-383

- Bellora, L. & Guenther, T.W. (2013).** Drivers of innovation capital disclosure in intellectual capital statements: Evidence from Europe, *The British Accounting Review*, vol. 45, no. 4, pp.255-270
- Berger, A., Demirgüç-Kunt, A., Levine, R., & Haubrich, J. (2004).** Bank Concentration and Competition: An Evolution in the Making. *Journal of Money, Credit and Banking*, vol. 36, no. 3, pp.433-451
- Bhat, V., Krishna, D., & Santhana, P. (2017).** Five Trends in Fintech to Watch, *Risk & Compliance Journal*, Available online: <https://deloitte.wsj.com/riskandcompliance/2018/07/17/five-trends-in-fintech-to-watch/> [Accessed 15 May 2019]
- Bikker, J. & Haaf, K. (2002).** Measures of Competition and Concentration in the Banking Industry: a Review of Literature [pdf] Central Bank of the Netherlands. Available at: https://www.dnb.nl/binaries/Measures%20of%20Competition_tcm46-145799.pdf [Accessed 20 April 2019]
- Bower, J.L. & Christensen C.M. (1995).** Disruptive technologies: Catching the wave, *Harvard Business Review*, vol. 73, no. 1, pp.43-53
- Boyer, P.C. & Ponce, J. (2012).** Regulatory capture and banking supervision reform, *Journal of Financial Stability*, vol. 8, no. 3, pp.206-217
- Brekhus, W.H., Galliher, J.F., & Gubrium, J.F. (2005).** The Need for Thin Description, *Qualitative Inquiry*, vol. 11, no. 6, pp.861-879
- Brooks, J., McCluskey, S., Turley, E., & King, N. (2014).** The Utility of Template Analysis in Qualitative Psychology Research, *Qualitative Research in Psychology*, vol. 12, no. 2, pp.202-222
- Bryman, A. (2009).** *Mixed Methods in Organizational Research*, London: Sage Publications
- Bryman, A. & Bell, E. (2011).** *Business Research Methods*, 3rd edn, Oxford: Oxford University Press
- CBInsight (2018).** Banks are finally going after fintech start ups. Available at: <https://www.cbinsights.com/research/top-us-banks-fintech-acquisitions/> [Accessed 29 April 2019]
- Capgemini (2018).** Top-10 trends in Retail Banking 2019 [pdf] Available at: <https://www.capgemini.com/wp-content/uploads/2018/11/Top-10-Trends-in-Retail-Banking-2019.pdf> [Accessed 2 May 2019]
- Capgemini (2019).** Top-10 trends in Capital Markets 2019 [pdf] Available at: <https://www.capgemini.com/de-de/wp-content/uploads/sites/5/2019/01/Top-10-Trends-in-Capital-Markets-2019.pdf> [Accessed 2 May 2019]

Castellanos, S. & Garza-García, J. (2013). Competition and Efficiency in the Mexican Banking Industry. BBVA Research. Available at: https://www.bbva.com/wp-content/uploads/mult/WP_1329_Mexico_BankingSector_tcm348-405322.pdf [Accessed 17 May 2019]

Chaminade, C. & Johanson U. (2003). Can guidelines for intellectual capital management and reporting be considered without addressing cultural differences? *Journal of Intellectual Capital*, vol. 4, no. 4, pp.528-542

Clatworthy, M. & Jones, M.J. (2003). Financial reporting of good and bad news: Evidence from accounting narratives, *Accounting and Business Research*, vol. 33, no. 3, pp.171-185

Danmarks Nationalbank, Suomen Pankki, Sedlabanki Islands, Norges Bank, & Sveriges Riksbank (2016). Nordic Banking Structures - Report [pdf] Available at: http://archive.riksbank.se/pagefolders/26883/nordic_banking_structures.pdf [Accessed 20 April 2019]

Danske Bank (2014). Annual Report 2014 [pdf] Available at <https://danskebank.com/en-uk/ir/Documents/2014/Q4/Annualreport-2014.pdf> [Accessed 14 May 2019]

Danske Bank (2018a). Danske Bank enters into partnership with Swedish FinTech company Minna Technologies. Available at: <https://danskebank.com/news-and-insights/news-archive/news/2018/10042018> [Accessed 29 April 2019]

Danske Bank (2018b). Annual Report 2018 [pdf] Available at <https://danskebank.com/-/media/danske-bank-com/file-cloud/2019/2/annual-report-2018.pdf> [Accessed 14 May 2019]

Delhey, J. & Newton, K (2005). Predicting cross-national levels of social trust: Global pattern or nordic exceptionalism? *European Sociological Review*, vol. 21, no. 4, pp.311-327

Deloitte (2017a). Fintechs and regulatory compliance: Understanding risks and rewards [pdf] Available at: <https://www2.deloitte.com/tr/en/pages/financial-services/articles/the-future-of-fintechs.html> [Accessed 11 April 2019]

Deloitte (2017b). FinTech in the Nordics: A deloitte review [pdf] Available at: https://www2.deloitte.com/content/dam/Deloitte/se/Documents/financial-services/FinTech_Publikation_A4_WEB_FINAL.PDF [Accessed 16 April 2019]

Deloitte (2018). 2019 Banking and capital market outlook - Reimagining transformation [pdf] Available at: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Financial-Services/gx-fsi-dcfs-2019-banking-cap-markets-outlook.pdf> [Accessed 22 April 2019]

Dhar, V. & Stein, R.M. (2017). FinTech Platforms and Strategy: Integrating trust and automation in finance, *Communications of the ACM*, vol. 60, no. 10, pp.32-35

DNB (2014). Annual report 2014 [pdf] Available at https://vp267.alertir.com/afw/files/press/dnb_asa/annual-report-dnb-group-2014.pdf [Accessed 14 May 2019]

DNB (2018). Annual report 2018 [pdf] Available at https://vp267.alertir.com/afw/files/press/dnb_asa/201903066039-2.pdf [Accessed 14 May 2019]

Easterby-Smith, M., Thorpe, R., & Jackson, P. (2015). Management & Business Research, London: Sage Publications

Erickson, S.L., Weber, M., & Segovia, J. (2011). Using Communication Theory to Analyze Corporate Reporting Strategies, *Journal of Business Communication*, vol. 48, no. 2, pp.207-223

European Banking Authority (EBA) (2017). Discussion Paper on the EBA's approach to Financial Technology (FinTech) [pdf] Available at: <https://eba.europa.eu/documents/10180/1919160/EBA+Discussion+Paper+on+Fintech+%28EBA-DP-2017-02%29.pdf/7a1b9cda-10ad-4315-91ce-d798230ebd84> [Accessed 14 May 2019]

European Banking Authority (EBA) (2018). Regulation and Policy: French banking federation. Available online: [https://eba.europa.eu/regulation-and-policy/other-topics/approach-to-financial-technology-fintech-?p_p_id=169&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&_169_recordId=2012991&_169_struts_action=%2Fdynamic_data_list_display%2Fview_record](https://eba.europa.eu/regulation-and-policy/other-topics/approach-to-financial-technology-fintech/?p_p_id=169&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&_169_recordId=2012991&_169_struts_action=%2Fdynamic_data_list_display%2Fview_record) [Accessed 25 April 2019]

European Central Bank (2019). Euro foreign exchange reference rates for 23.04.2019. Available online: https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/index.en.html [Accessed 24 April 2019]

European Commission (2004). Report on the Proportionality Principle in the European Union [pdf] Available at: <https://ec.europa.eu/docsroom/documents/14881/attachments/2/translations/en/renditions/pdf> [Accessed 10 May 2019]

EY (2017a). As FinTech evolves, can financial services innovation be compliant? The emergence and impact of regulatory sandboxes - in the UK and across Asia-Pacific [pdf] Available at: [https://www.ey.com/Publication/vwLUAssets/ey-the-emergence-and-impact-of-regulatory-sandboxes-in-uk-and-across-apac/\\$FILE/ey-the-emergence-and-impact-of-regulatory-sandboxes-in-uk-and-across-apac.pdf](https://www.ey.com/Publication/vwLUAssets/ey-the-emergence-and-impact-of-regulatory-sandboxes-in-uk-and-across-apac/$FILE/ey-the-emergence-and-impact-of-regulatory-sandboxes-in-uk-and-across-apac.pdf) [Accessed April 10 2019]

EY (2017b). Unleashing the potential of FinTech in banking [pdf] Available at: [https://www.ey.com/Publication/vwLUAssets/ey-unleashing-the-potential-of-fin-tech-in-banking/\\$File/ey-unleashing-the-potential-of-fin-tech-in-banking.pdf](https://www.ey.com/Publication/vwLUAssets/ey-unleashing-the-potential-of-fin-tech-in-banking/$File/ey-unleashing-the-potential-of-fin-tech-in-banking.pdf) [Accessed 29 April 2019]

EY (2018). Global Banking outlook 2018 - Pivoting toward an innovation-led strategy [pdf] Available at: [https://www.ey.com/Publication/vwLUAssets/ey-global-banking-outlook-2018/\\$File/ey-global-banking-outlook-2018.pdf](https://www.ey.com/Publication/vwLUAssets/ey-global-banking-outlook-2018/$File/ey-global-banking-outlook-2018.pdf) [Accessed April 20 2019]

Financial Accounting Standards Board (2008). Original pronouncements: As amended [pdf] Available at: http://www.fasb.org/pdf/aop_CON1.pdf [Accessed April 22 2019]

Financial Stability Board (2017). Financial Stability Implications from FinTech, Supervisory and Regulatory Issues that Merit Authorities Attention [pdf] Available at: <http://www.fsb.org/wp-content/uploads/R270617.pdf> [Accessed 25 April 2019]

FinTech Global (2018). FinTech investments in the Nordics set to decline in 2018. Available online: <https://fintech.global/fintech-investments-in-the-nordics-set-to-decline-in-2018/> [Accessed 16 April 2019]

Gantz, J. & Reinsel, D. (2013). The Digital Universe in 2020: Big data, bigger digital shadows, and biggest growth in the far east [pdf] Available at: <https://www.emc.com/collateral/analyst-reports/idc-digital-universe-united-states.pdf> [Accessed 10 May 2019]

Gibbins, M., Richardson, A., & Waterhouse, J. (1990). The Management of Corporate Financial Disclosure: Opportunism, Ritualism, Policies, and Processes, *Journal of Accounting Research*, vol. 28, no. 1, pp.121-143

Gomber, P., Kauffman, R.J., Parker C., & Weber, B.W. (2018). On the Fintech Revolution: Interpreting the forces of innovation, disruption, and transformation in financial Services, *Journal of Management Information Systems*, vol. 35, no. 1, pp.220-265

Graham, A. (2018). Fintech and Banks: How can the banking industry respond to the threat of disruption? Available at: <https://www.toptal.com/finance/investment-banking-freelancer/fintech-and-banks> [Accessed 29 April 2019]

Gray, R., Kouhy, R., & Layers, S. (1995). Corporate social and environmental reporting: A review of the literature and a longitudinal study of UK disclosure, *Accounting, Auditing & Accountability Journal*, vol. 8, no. 2, pp.47-77

Haddad, C. & Hornuf, L. (2018). The Emergence of the Global Fintech Market: Economic and technological determinants, *Small Business Economics*, pp.1-25

Hammersley, M. (2002). The relationship between qualitative and quantitative research: paradigm loyalty versus methodological eclecticism. In: Richardson, J.T.E. (1996). *Handbook of Qualitative Research Methods for Psychology and the Social Sciences*, Oxford: Wiley-Blackwell

Handelsbanken (2014). Annual Report 2014 [pdf] Available at https://www.handelsbanken.se/shb/inet/icentsv.nsf/vlookuppics/investor_relations_en_hb_14_highlights/%24file/hb_14_highlights.pdf [Accessed 14 May 2019]

Handelsbanken (2018). Annual Report 2018 [pdf] Available at [https://www.handelsbanken.com/shb/inet/icentsv.nsf/vlookuppics/investor_relations_en_q-reports_hb_2018_eng_annualreport/\\$file/hb_2018_eng_annualreport.pdf](https://www.handelsbanken.com/shb/inet/icentsv.nsf/vlookuppics/investor_relations_en_q-reports_hb_2018_eng_annualreport/$file/hb_2018_eng_annualreport.pdf) [Accessed 14 May 2019]

Magna Carta & FinTech Mundi (2018). 2018 Fintech Disruptors Report - Setting Sail for Fintech Success [pdf] Available at: <http://www.fintechmundi.com/wp-content/uploads/2018/06/Nordic-Fintech-Disruptors-Report-2018.pdf> [Accessed 29 April 2019]

Hedman, J., & Henningson, S. (2015). The New Normal: Market cooperation in the mobile payments ecosystem, *Electronic Commerce Research and Applications*, vol. 14, no. 5, pp.305-318

Hooghiemstra, R. (2010). Letters to the shareholders: A content analysis comparison of letters written by CEOs in the United States and Japan, *The International Journal of Accounting*, vol. 45, no. 3, pp.275-300

Hyland, K. (1998). Exploring Corporate Rhetoric: Metadiscourse in the CEO's Letter, *The Journal of Business Communication*, vol. 35, no. 2, pp.224-244

IFRS Foundation (2017). IFRS Practice Statement 1: Management Commentary. Available at: <https://www.ifrs.org/issued-standards/management-commentary-practice-statement/> [Accessed 22 April 2019]

In, L. & Yong J.S. (2018). Fintech: ecosystem, business models, investment decisions, and challenges, *Business Horizons*, vol. 61, no. 1, pp.35-46

International Monetary Fund (2013). Nordics Regional Report. Available at: <https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Nordic-Regional-Report-Selected-Issues-40920> [Accessed 22 April 2019]

Jyske Bank (2014). Annual Report 2018 [pdf] Available at https://investor.jyskebank.com/wps/wcm/connect/ff0e9822-a257-4012-b79d-ca08abbb27c9/Jyske+Bank_Annual+report+2014.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ff0e9822-a257-4012-b79d-ca08abbb27c9 [Accessed 14 May 2019]

Jyske Bank (2018). Annual Report 2018 [pdf] Available at https://investor.jyskebank.com/wps/wcm/connect/059e83c3-d632-4514-8fad-6f8ee1384598/Jyske+Bank+Annual+Report+2018.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=059e83c3-d632-4514-8fad-6f8ee1384598 [Accessed 14 May 2019]

Kimberly, J. R. (1976). Issues in the Design of Longitudinal Organizational Research, *Sociological Methods & Research*, vol. 4, no. 3, pp.321-348

- King, N. (2014).** Template Analysis – The Technique in Detail, Available at: <https://research.hud.ac.uk/research-subjects/human-health/template-analysis/what-is-template-analysis/> [Accessed 27 April 2019]
- Kohut, G. & Segars, A. (1992).** The president’s letter to stockholders: An examination of corporate communication strategy, *Journal of Business Communication*, vol. 29, no. 1, pp.7-21
- KPMG (2019a).** The Pulse of Fintech 2018: Biannual global analysis of investment in fintech [pdf] Available at: <https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/02/the-pulse-of-fintech-2018.pdf> [Accessed at 11 April 2019]
- KPMG (2019b).** Regulation and Supervision of Fintech: Ever-expanding expectations [pdf] Available at: <https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/03/regulation-and-supervision-of-fintech.pdf> [Accessed 11 April 2019]
- van der Laan Smith, J., Adhikari, A., & Tondkar, R.H. (2005).** Exploring differences in social disclosures internationally: A stakeholder perspective, *Journal of Accounting and Public Policy*, vol. 24, no. 2, pp.123-151
- Lekvall, P. (2014).** The Nordic Corporate Governance Model [pdf] Available at: https://www.sns.se/wp-content/uploads/2016/08/the_nordic_corporate_governance_model_1.pdf [Accessed 10 May 2019]
- Levine, R. (1997).** Financial Development and Economic Growth: Views and agenda, *Journal of Economic Literature*, vol. 35, no. 2, pp.688-726
- Long, A.S., Steiner, J.L., & Springer, J.O. (2018).** Financial Regulation - OCC Allows Fintech Companies to Apply for National Bank Charters, *Harvard Law Review*, vol. 132, no.4, pp.1361-1368
- McKinsey (2017).** Data Sharing and Open Banking. Available online: <https://www.mckinsey.com/industries/financial-services/our-insights/data-sharing-and-open-banking> [Accessed at 11 April 2019]
- Milne, R. (2018).** Nordic model tarnished as scandals hit region’s banks, *Financial Times*, 28 October 2018. Available at: <https://www.ft.com/content/d467cce6-d834-11e8-a854-33d6f82e62f8> [Accessed 22 April 2019]
- Milne, R. (2019a).** Money-laundering scandal takes toll on Nordic banks, *Financial Times*, April 30 2019, Available online: <https://www.ft.com/content/4f6dbb10-6b2b-11e9-80c7-60ee53e6681d> [Accessed 2 May 2019]
- Milne, R. (2019b).** Swedbank chairman resigns amid money laundering scandal, *Financial Times*, 5 April 2019. Available at: <https://www.ft.com/content/65a2dcd6-5761-11e9-91f9-b6515a54c5b1> [Accessed 22 April 2019]

- Morris, R.D. & Tronnes, P.C. (2018).** The Determinants of Voluntary Strategy Disclosure: an international comparison, *Accounting Research Journal*, vol. 31, no. 3, pp.423-441
- Navaretti G.B., Calzolari, G., Mansilla-Fernandez, J.M., & Pozzolo A.F. (2018).** FinTech and Banks. Friends or Foes? European Economy Banks, *Regulation, and the Real Sector*, vol. 2, pp.9-39
- Nordea (2014).** Annual Report 2014 [pdf] Available at https://www.nordea.com/Images/33-36843/2014-01-01_Annual-Report-2014-Nordea-Bank-AB_EN.pdf [Accessed 14 May 2019]
- Nordea (2018).** Annual Report 2018 [pdf] Available at <https://www.nordea.com/Images/33-304448/Annual%20Report%20Nordea%20Bank%20Abp%202018.pdf> [Accessed 14 May 2019]
- Olson, M. (1965).** The Logic of Collective Action, Cambridge, MA: Harvard University Press
- OP Bank (2014).** Report by the Board of Directors and Financial Statements 2014 [pdf] Available at: <https://www.op.fi/documents/209474/210348/Pohjola+Bank+plc+Report+by+the+Board+of+Directors+and+Financial+Statements+2014/45b01974-89de-48ba-8fa5-9af2cea983e1> [Accessed 14 May 2019]
- OP Bank (2018).** OP Corporate Bank plc Report by the Board of Directors and Financial Statements 2018 [pdf] Available at: <https://www.op.fi/documents/209474/31336397/OP+Corporate+Bank+plc+Report+by+the+Board+of+Directors+and+Financial+Statements+2018/fa4f066f-b246-00e6-228b-ae405e91bacb> [Accessed 14 May 2019]
- Persaud, N. (2010).** Primary data source. In: Salkind, N.J. (2010). Encyclopedia of Research Design, Thousand Oaks, CA: Sage Publications
- Poenisch, H. (2017).** Fintech: A New Frontier in Finance, *Penang Monthly*, p.1
- Poole, R. (2016).** Good Times, Bad Times: A Keyword Analysis of Letters to Shareholders of Two Fortune 500 Banking Institutions, *International Journal of Business Communication*, vol. 53, no. 1, pp.55-73
- Puschmann, T. (2017).** Fintech, *Business and Information Systems Engineering*, vol. 59, no. 1, pp.69-76
- PwC (2016a).** Financial services technology 2020 and beyond: Embracing disruption [pdf] Available at: <https://www.pwc.com/gx/en/financial-services/assets/pdf/technology2020-and-beyond.pdf> [Accessed 10 April 2019]
- PwC (2016b).** How FinTech is shaping Financial Services: Global fintech report march 2016 [pdf] Available at: <https://www.pwc.se/sv/pdf-reports/blurred-lines-how-fintech-is-shaping-financial-services.pdf> [Accessed 12 April 2019]

PwC (2017). Global FinTech Report 2017: Redrawing the lines, fintech's growing influence on financial services [pdf] Available at: <https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-global-fintech-report-2017.pdf> [Accessed 10 April 2019]

Ringe, W.G. & Ruof, C. (2019). Keeping up with Innovation: Designing a european sandbox for fintech [pdf] Available at: https://www.ceps.eu/system/files/Keeping%20up%20with%20Innovation_ECMI_commentary.pdf [Accessed 24 April 2019]

Rutherford, B.A. (2005). Genre Analysis of Corporate Annual Report Narratives: A corpus linguistics-based approach, *The Journal of Business Communication*, vol. 42, no. 4, pp.349-378

Saunders, M., Lewis, P. & Thornhill, A. (2012). Research Methods for Business Students, 6th edn, Harlow, UK: Pearson Education

SEB (2014). Annual Report 2014 [pdf] Available at: https://sebgroupp.com/siteassets/investor_relations1/annual_reports/annual_report_2014.pdf [Accessed 14 May 2019]

SEB (2018a). SEB invests in fintech to increase card digitisation. Available at: <https://sebgroupp.com/press/news/seb-investerar-i-fintech-for-okad-digitalisering-av-kort> [Accessed 29 April 2019]

SEB (2018b). Annual Report 2018 [pdf] Available at: https://sebgroupp.com/siteassets/investor_relations1/annual_reports/annual_report_2018.pdf [Accessed 14 May 2019]

Schildbach, J. (2017). Deutsche Bank Research: Large or small? How to measure bank size [pdf] Available at: https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD000000000443314/Large_or_small%3F_How_to_measure_bank_size.pdf [Accessed 29 April 2019]

Schawbel, D. (2017). Why today's most promising young people are choosing to work in tech instead of finance, CNBC, 18 May 2017. Available at: <https://www.cnn.com/2017/05/18/why-young-people-are-choosing-to-work-in-tech-instead-of-finance.html> [Accessed 25 May 2019]

Schwartzkopff, F. (2018). Banks Are Building a Super-Speed Money Highway in the Nordics, *Bloomberg*, 15 July 2018. Available at: <https://www.bloomberg.com/news/articles/2018-07-15/banks-are-building-a-super-speed-money-highway-in-the-nordics> [Accessed 22 April 2019]

Smith, M. & Taffler, R.J. (2000). The chairman's statement - A content analysis of discretionary narrative disclosures, *Accounting, Auditing & Accountability Journal*, vol. 13, no. 5, pp.624-647

Sinha, S. (2017). FinTech: The new frontier, *IEEE Potentials*, vol. 36, no. 6, pp.6-7

Stigler, G. (1971). The Economic Theory of Regulation, *Bell Journal of Economics*, vol. 2, no. 11, pp.3-21

Storebrand (2014). Annual Report 2014 [pdf] Available at: https://www.storebrand.no/en/investor-relations/annual-reports/_attachment/7639?_ts=15aa8fcfb4b [Accessed 14 May 2019]

Storebrand (2018). Storebrand Annual Report 2018: Investing in a sustainable future [pdf] Available at: https://www.storebrand.no/en/investor-relations/annual-reports/_attachment/10680?_ts=169c8ca12fb [Accessed 14 May 2019]

Strategy& (2015). Developing a FinTech ecosystem in the GCC: Let's get ready for take off [pdf] Available at: <https://www.strategyand.pwc.com/media/file/Developing-a-FinTech-ecosystem-in-the-GCC.pdf> [Accessed 21 May 2019]

Svenska Bankföreningen - Swedish Bankers' Association (2018a). Banks in Sweden. Available at: <https://www.swedishbankers.se/en-us/the-swedish-bankers-association-in-english/the-swedish-banking-market/the-swedish-financial-market/> [Accessed 23 April 2019]

Svenska Bankföreningen - Swedish Bankers' Association (2018b). Competition in the Swedish banking sector - Copenhagen Economics [pdf] Available at: <https://www.copenhageneconomics.com/dyn/resources/Publication/publicationPDF/1/451/1529391640/c ompetition-in-swedish-banking.pdf> [Accessed 24 April 2019]

Sveriges Riksbank (2016). The Swedish Financial Market [pdf] Available at: https://www.riksbank.se/globalassets/media/rapporter/den-svenska-finansmarknaden/engelska/2016/rap_finansm_160831_eng.pdf [Accessed 22 April 2019]

Swedbank (2014). Annual Report 2014 [pdf] Available at: <https://online.swedbank.se/ConditionsEarchive/download?bankid=1111&id=WEBDOC-PPE1340996> [Accessed 14 May 2019]

Swedbank (2018). Annual and Sustainability Report [pdf] Available at: <https://online.swedbank.se/ConditionsEarchive/download?bankid=1111&id=WEBDOC-PRODE29146126> [Accessed 14 May 2019]

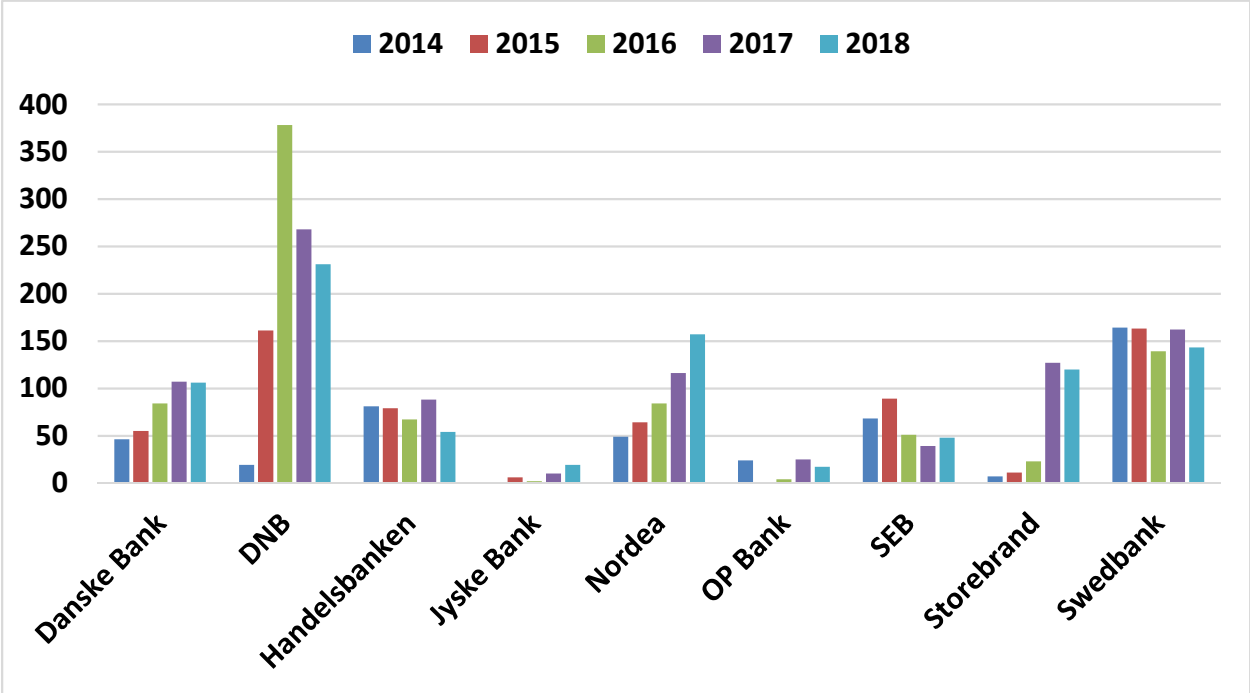
Swedbank (2019). Swedbank Open Banking: Let's innovate together. Available online: <https://www.swedbank.com/openbanking.html> [Accessed 10 May 2019]

Wade, M.R., & Shan, J. (2016). Strategies for Responding to digital disruption: Global center for digital business transformation [pdf] Available at: <https://www.imd.org/contentassets/993ae1961034444e9fee7158102e4d16/59---responding-to-digital-disruption-dbt-center-insightsimd-31-05-16.pdf> [Accessed 27 April 2019]

Working group of the self-regulatory corporate governance bodies of the five Nordic countries (2009). Corporate Governance in the Nordic countries [pdf] Available at:
http://www.bolagsstyrning.se/UserFiles/Archive/446/Ovriga_publicationer2/nordic_cg_booklet_-_final_print_version.pdf [Accessed 10 May 2019]

APPENDICES

Appendix 1: Number of mentions for all sample banks



Appendix 2: Data set number of mentions for all sample banks

Document	Search Terms									Total
	TECHNOL	DIGIT	DISRUPT	AUTOM	INNOVAT	MOBILE	START UP	FINTECH	BLOCKCHAIN	
AR Danske Bank 2014	0	11	1	1	8	25	0	0	0	46
AR Danske Bank 2015	2	22	2	4	11	14	0	0	0	55
AR Danske Bank 2016	2	41	0	1	18	22	0	0	0	84
AR Danske Bank 2017	2	52	1	3	21	27	1	0	0	107
AR Danske Bank 2018	5	48	1	4	23	19	0	6	0	106
AR DNB 2014	0	8	0	4	1	6	0	0	0	19
AR DNB 2015	14	90	1	11	23	21	1	0	0	161
AR DNB 2016	71	189	0	21	61	32	0	4	0	378
AR DNB 2017	51	98	0	21	84	12	0	2	0	268
AR DNB 2018	45	75	0	20	57	27	3	4	0	231
AR Handelsbanken 2014	13	27	14	4	0	23	0	0	0	81
AR Handelsbanken 2015	13	38	14	3	2	9	0	0	0	79
AR Handelsbanken 2016	6	42	12	5	0	2	0	0	0	67
AR Handelsbanken 2017	8	56	15	7	0	2	0	0	0	88
AR Handelsbanken 2018	5	27	14	8	0	0	0	0	0	54
AR Jyske Bank 2014	0	0	0	1	0	0	0	0	0	1
AR Jyske Bank 2015	2	2	0	1	0	1	0	0	0	6
AR Jyske Bank 2016	0	0	0	1	0	1	0	0	0	2
AR Jyske Bank 2017	1	4	0	2	2	1	0	0	0	10
AR Jyske Bank 2018	2	12	0	1	1	3	0	0	0	19
AR Nordea 2014	3	15	0	8	1	22	0	0	0	49
AR Nordea 2015	7	37	0	7	0	13	0	0	0	64
AR Nordea 2016	5	46	0	10	4	19	0	0	0	84
AR Nordea 2017	12	46	8	17	9	23	0	0	1	116
AR Nordea 2018	24	71	3	22	11	23	0	0	3	157
AR OP Bank 2014	0	4	4	8	0	8	0	0	0	24
AR OP Bank 2015	0	0	0	0	0	0	0	0	0	0
AR OP Bank 2016	2	1	0	1	0	0	0	0	0	4
AR OP Bank 2017	0	12	4	7	1	1	0	0	0	25
AR OP Bank 2018	1	5	3	6	0	2	0	0	0	17
AR SEB 2014	7	21	1	6	6	27	0	0	0	68
AR SEB 2015	7	45	2	6	15	12	0	2	0	89
AR SEB 2016	2	19	1	3	12	4	0	6	4	51
AR SEB 2017	9	11	1	4	5	2	0	1	6	39
AR SEB 2018	6	24	1	5	11	0	0	0	1	48
AR Storebrand 2014	0	1	0	2	4	0	0	0	0	7
AR Storebrand 2015	1	4	0	2	4	0	0	0	0	11
AR Storebrand 2016	6	11	1	3	2	0	0	0	0	23
AR Storebrand 2017	34	69	1	0	19	4	0	0	0	127
AR Storebrand 2018	24	75	2	7	7	2	0	3	0	120
AR Swedbank 2014	17	86	8	13	4	36	0	0	0	164
AR SwedBank 2015	9	97	8	8	6	35	0	0	0	163
AR SwedBank 2016	3	88	7	5	8	27	0	1	0	139
AR SwedBank 2017	5	98	9	10	9	23	0	8	0	162
AR SwedBank 2018	11	86	9	8	9	12	0	8	0	143
Total	437	1814	148	291	459	542	5	45	15	3756