The Vertical Disintegration of the Nordic Financial Industry

An Ecosystem Perspective on FinTech's influence on the Nordic Financial Industry

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Authors:
Axel Falkenberg: 103074
Philip Wissén: 102398

Supervisor:
Arisa Shollo

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Abstract

In coherence with the developments of society in general, the financial industry has been significantly influenced by the elements and trends of the digitalization. Equivalent to many other aspects of life, consumer behavior in financial services has successively moved towards digital and mobile channels. A high degree of these modernized processes and solutions have been developed and provided by FinTech actors. This has caused the prior, traditional and monopolized financial industry, to be revolutionized by a dramatic increase of actors and new technology invading the industry to swiftly grab market share from the incumbents. By applying an ecosystem lens, the purpose of this study is to investigate more specifically *how FinTech has affected the financial industry in the Nordics*. The ecosystem allows the researchers to utilize a holistic approach to understand the general and considerable factors in which FinTechs have influenced the Nordic market.

By adopting an interpretivist research philosophy and an inductive approach, the research was able to explore the topic of interest through the experiences and views of the participants and their respective organizations. The qualitative case study examines the Nordic financial industry by applying a mono-method research and conducting six semi-structured interviews with industry experts from both FinTechs and traditional financial institutions. The data is analyzed by thematic analysis to identify patterns which are refined to themes and dimensions, corresponding to elements of change which have had an impact on the industry.

The thematic analysis established the fundamentals of the data structure model, which subsequently was conceptualized to the change process model of how the Nordic financial industry has developed into an ecosystem. By applying adaptive and responsive product development to develop digital technologies and generate new value, FinTechs have established new standards of consumer demand. The customer need for increased digital touchpoints and enhanced transparency have provoked the decentralization of financial services. The vertical disintegration of the financial industry has initiated a shift in how to regard competition and collaboration. In the network-based Nordic financial ecosystem of today, participants are beginning to partner to capitalize on the mutual benefits of value co-creation.

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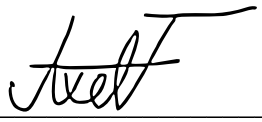

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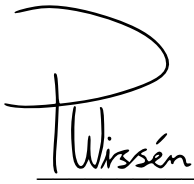

Philip Wissén

Abbreviations

AI	Artificial Intelligence
AML	Anti-Money Laundering
API	Application Programming Interface
B2B	Business-to-Business
B2C	Business-to-Consumer
BaaS	Banking-as-a-Software
BELC	Business Ecosystem Life Cycle
EMEA	Europe, the Middle East, Africa
FinTech	Financial Technology, in this research will be applied as a term for financial technology companies.
FinTS	Financial Trading Services
MVP	Minimum Viable Product
NFC	Near Field Communication
P2P	Peer-to-Peer
PFM	Personal Financial Management
PSD1	Payment Services Directive
PSD2	Revised Payment Services Directive
P&L	Profit and Loss
SME	Small- and Medium-sized Enterprises

1. Introduction

In 2017, a survey conducted by PWC identified that the sector most ripe for disruption by financial technology (FinTech) was consumer banking (Davies et al., 2017). In recent years, the utilization of mobile devices to manage consumer accounts and banking information has skyrocketed to new heights. Morawiec (2019) predicts that the percentage of the population using mobile banking channels will surpass that of the traditional bank branches already in 2021 (Morawiec, 2019). The changes which the financial industry has undergone has altered the way that customers use banking services, as well as how they expect banking services to be delivered. New entrants in the market are realizing the potential in disaggregating the verticals of traditional banking to offer improved services and solutions for both consumers and businesses. Research shows how new market players from non-banking backgrounds have an almost perfect understanding and command of the internet language, and thus, can provide a new perspective on how the services could be delivered (Dapp, 2017). The growth of investments in FinTech has been substantial over the past years. In the first quarter of 2016, global investments in FinTech reached $5.3 billion, nearly a 67 percent increase from the same period in the previous year (Shuttlewood et al., 2016). In the first half year of 2019, FinTech investments in Europe alone reached $13.2 billion (Ruddenklau et al., 2019). Much of the driving force behind the shift from traditional financial services is coming from new generations having grown up with digital technologies and demanding greater transparency, ease of use, always-on access, and automation (Terry et al., 2015). Younger generations are at the forefront of digital demand but every demographic is incrementally demanding transparency, convenience and lower costs, forcing traditional financial service providers to adapt and rethink. Pollari et al. (2019) expand on how digital banks and digital banking activity will continue to rise in the coming years, due to the new regulations related to open banking and the possibilities being created. In addition, a particular interest in comparison platforms for banking services has been an effect of the increased amount of FinTech companies (Pollari et al., 2019).

The influx of competition in the financial sector has pressured the financial institutions to an extent which has previously not been observed. It is evident that due to the vast amount of new companies emerging in the sector, FinTech is now well beyond the stage of being a trend. Instead, FinTech can now be considered a major player in the world of financial services. In regards to the increased number of actors and the significant challenges this implies for financial services, the incumbent financial institutions will need to consider how to respond and adapt to the radical impact this has caused. Dapp (2017) explains how despite very tight profit margins in banking already, the consequences of the financial crisis in 2008, increasingly rigorous regulatory implications, and the

changing consumer behavior, banks are forced to consider digital technologies and adapt extensively to the new age of digitalization.

This paper will thoroughly cover the historic aspects attributing to the current outlook in the financial services industry and incorporate industry insights to establish grounds for how the financial industry in the Nordics has developed. Through an exploratory approach, this paper identifies trends and characteristics defining the development of financial services and subsequently will reach a conclusion on how the emerging FinTech companies are affecting the financial services industry. Through semi-structured interviews with relevant industry experts from both financial institutions and FinTech companies in the Nordics, this paper will abstract information contributing to the effect FinTech has had on incumbent firms, strategies, future outlook, and industry developments. Furthermore, a change process model for the Nordic financial industry is derived by means of data analysis to illustrate the factors resulting in the current outlook. In order to conduct a thorough and valid analysis of the financial services in the Nordics, it is important to understand the historical perspective of finance in the Nordic region. Thus, an empirical setting is provided to establish a relevant background on financial services in the Nordics.

1.1 Problem Formulation

Based on the discussion and background provided, this research aims to enhance knowledge on the development of financial services in the Nordic. More specifically, how FinTech has affected the financial industry and provoked change. The question consists of one main research question and one sub-question. Hence, considering the background and case specific implications the research question of this thesis is:

How has FinTech affected the financial industry in the Nordics?

The influence FinTech has had on the financial industry has to an extent already been covered in previous published literature. Therefore, this thesis aims to specifically determine to what extent the industry structure has developed. Hence, this research strives to apply an ecosystem lens and uncover if any ecosystem implications have been derived from FinTechs' emergence. As the research objective is to gain a holistic understanding of the financial industry, rather than a company-centric perspective, the application of an ecosystem lens to address the research question is appropriate. By utilizing this perspective, the financial industry can be compared to its more

traditional structures and provide new insights regarding the Nordic financial industry. Hence, the research question is supported by the following sub-question:

- How has the structure of the Nordic financial industry developed from a traditional industry to an ecosystem?

1.2 Structure

Figure 1 visualizes the overall structure of this paper and illustrates the intended flow of the research. Initially, the paper introduces the case at hand regarding the financial industry and presents the paper's research question. In the second section, a review of relevant literature in regards to the case is conducted. In section 3, the methodological choices and research design are presented. In section 4, an empirical setting is applied in order for the reader to gain deeper insight into the Nordic banking industry prior to analyzing the findings. In section 5, the findings are presented through the application of the analytical framework in order to demonstrate the outcome from the findings in context of this study. In section 6, a discussion is presented regarding the findings and in context to the literature gaps identified in the literature review, thus emphasizing the adherent value contribution of the paper. The final concluding section wraps up the paper, while the subsequent section provides directions for future research within the topic. Lastly, a provision of the references and appendices is available after the concluding remarks.

Figure 1. Research Structure

2. Literature review

In order to establish an accurate and valuable contribution to research, in addition to answering the research question, this section reviews and discusses relevant theory and literature available. Therefore, the initial discussion will commence in regards to digital platforms, reviewing digital platform definitions, digital platform strategies as well as the impact of digital platforms specifically

within banking. Subsequently, the discussion will investigate the emergence of FinTech, regarding the various definitions of FinTech, facilitating technologies, industry background as well as the participants in the financial ecosystem. Lastly, the discussion will regard ecosystems which will function as a lense which the research will have on the effects FinTech has in the financial markets. The ecosystem perspective will commence by discussing the definitions and origins of the ecosystem perspective in order to establish the value of mutual participants and value co-creation. An ecosystem lifecycle and strategy perspective is intended to allow for a deeper understanding of the creation and development of an ecosystem.

The intention with the literature review is to revise current and existing literature on the topics discussed. In addition to discussing the topics with the offset from current literature, the review is intended to assist in identifying existing gaps in research, and thus, ensure for a valuable contribution to existing literature.

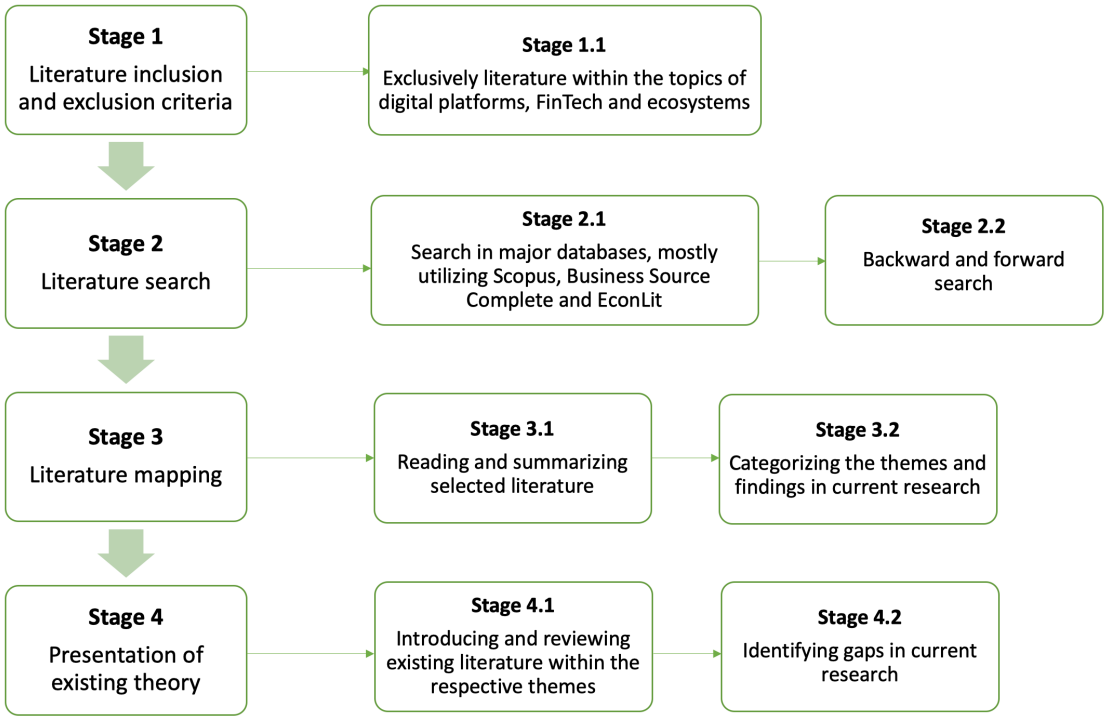

Figure 2. Literature Review Process.

2.1 Theme 1: Digital Platforms

In multi-sided markets such as ecosystems, there is a need for intermediaries to facilitate the connection and transactions between the different sides. In digital environments, this mediation of

interactions and information between different stakeholders is commonly provided by digital platforms. This topic will be addressed and expanded upon in this section of the literature review. The concepts which will be covered are: (1) *digital platform definition,* (2) *digital platform strategy,* and (3) *digital platforms in banking*.

2.1.1 Digital Platform Definition

In order to establish an initial understanding of what a digital platform is, it is of essence to gain a thorough understanding of a platform in itself. de Reuver et al. (2018) argue that a traditional platform can be categorized as a concept which stipulates opportunities for distributed development and innovation through modularization. Traditionally, a platform has been defined as one of three processes: (1) internal platforms, enabling recombination of various sub-units within a single firm; (2) supply-chain platforms coordinating external suppliers around an assembler; an (3) industry platforms where a platform leader pools external capability from complementors (de Reuver et al., 2018). In a broader context, the platform indicates the holding of a hub position in a network of interactions, where power is exercised centrally through appropriate governance choices in terms of incentives, control and access (Adner, 2017). The assumption regarding such hub-and-spoke imagery is that it presumes there is an agreement of the identity of the hub owner (Adner, 2017).

With the emergence of digital technology, the implied homogenization of data, editability, reprogrammability, distrebutedness, and self-referentiality followed (de Reuver et al., 2018). Such implicit digital characteristics can lead to inheritance in distributed settings for participants, and thus, indicating that there is no single owner of the platform who dictates the design of its digital form (de Reuver et al., 2018). The authors explain that there are a multitude of conceptualizations of the digital platform and compile a list of various definitions. A definition which is provided, is that digital platforms are purely technical artefacts, where the platform is an extendable application or system, and the ecosystem constitutes third-party modules complementing this core application or system (Tiwana et al., 2010; Boudreau, 2012). A further definition can be offered by Tilson et al., (2012), where a digital platform could alternatively be seen as a sociotechnical assemblage encompassing the technical elements as well as the associated organizational processes and standards. Additionally, that definition has been further developed as: "*software-based external platforms consisting of the extensible codebase of a software-based system that provides core functionality shared by the modules that interoperate with it and the interfaces through which they interoperate*" (Ghazawneh & Henfridsson, 2015, p. 199).

2.1.2 Digital Platform Strategy

A multitude of literature regarding digital platforms discuss how platforms are utilized to mediate different groups of users, such as buyers and sellers. Such platforms are typically referred to as multi-sided platforms (de Reuver et al., 2018). Adner (2017, p. 50) states that *"A key strategic priority in platforms and multi-sided markets is to grow the relevant sides of the marketing order to increase value*". This relates to network effects, which is a fundamental feature of digital platforms that must be addressed by the managers of platforms. Network effects concern the "*impact that the number of users of a platform has on the value created for each user*" (Parker et al., 2016, p. 17). Positive network effects refer to the ability of a well-managed platform community to gain additional value for each user that joins the platform. On the contrary, negative network effects relate to the risk that the growth of a poorly-managed platform can diminish the value generated for each user (Parker et al., 2016). Additionally, in a platform with a minimum two-sided network, the effects can be either same-sided or cross-sided. If the users of one side of the market, e.g. producers, are influenced by fellow producers on the platform, the platform creates same-side effects. Whereas, if the producers have an impact on the users on the other side of the market, e.g. consumers, the platform demonstrates cross-side network effects (Parker et al., 2016). Both same-side and cross-side effects can be positive and negative respectively.

However, while certain literature emphasizes the core of the platform, Henfridsson and Bygstad (2013) state that in order to obtain a greater comprehension of digital platform dynamics, the emphasis of analysis should be the boundary of resources rather than the core of the platform. Eaton et al. (2015) further develop this concept by conceptualizing the platform dynamics and benefits in terms of distributed actors that collectively tune boundary resources. Adner (2017) explains the network approaches as a focus on connectivity, where no matter whether the network operates on an individual level or on a firm level, the network is delineated according to its ties and regards the connections as the core value.

Dapp (2017) approaches digital platforms from the need firms have when digitalizing, as it is not adequate to equip individual departments or divisions with advanced internet technologies. Dapp (2017) argues that success will only come from a holistic approach where all parts of a firm adopts an adequate digitalization strategy. Companies must include all of their business divisions within a strategy as well as suitable internal and external programming interfaces (application programming interfaces, API's) for the complete adoption of new technologies (Dapp, 2017).

2.1.3 Digital Platforms in Banking

Dapp (2017) describes the impact digital structural change is having on traditional banks as a severe difficulty. Despite already having to squeeze tightly on certain profit margins, the fallout from the 2008 financial crisis, changing consumer behavior, and the tightened regulatory requirements, banks now need to adapt, invest and implement strategic changes to compete in the modern internet age (Dapp, 2017). Additionally, Dapp (2017) argues that the main challenge lies in established banks needing to develop in primarily digital, platform-based ecosystems, while simultaneously keeping an open mind to possibilities of entering strategic alliances with external financial and technology service providers along their entire value chain.

2.2 Theme 2: FinTech

To gain an increased understanding of FinTech and its entry into the financial industry, the researchers have investigated what current knowledge is established in relation to FinTech, what factors and technologies have enabled it to arise and what actors exist within its ecosystem. This theme will cover the following sections: (1) *FinTech definition,* (2) *FinTech-facilitating technology,* (3) *FinTech background,* and (4) *FinTech ecosystem participants*.

2.2.1 FinTech Definition

External financial technology service providers have been prominent in the media during recent years due to the shift in focus of digitalization, from enhancing the delivery of traditional tasks, to introducing radically new business opportunities and models for financial service companies (Gomber et al., 2017). There are many variations of definitions of these financial services companies defined in literature. However, Gomber et al. (2017) define such initiatives under two subcategories: digital finance and FinTech. *Digital finance* is described to encompass the digitalization of the financial industry in general, but mostly for electronic financial products which are less internet dependent (Gomber et al., 2017). While they argue that digital finance entails all electronic products within the financial sector, it is also stated that the relevant digital processes and services covered are widely established and do not encompass the new services and business models that bear disruptive potential for the industry, these companies are often referred to as FinTech solutions. Another definition described under the emergence of FinTech is electronic finance (e-finance), which much like digital finance covers all forms of financial services performed through electronic means (Lee & Shin, 2018). Much like digital finance, e-finance business models are derived from the previous decades and covered all aspects of banking in that time (Lee & Shin,

2018). However, with the growth of new technologies in combination with the outcomes of the financial crisis in 2008, this definition became more obsolete as FinTech companies differentiated themselves from traditional financial service providers (Lee & Shin, 2018).

FinTech is defined as a neologism which originates from the words "financial" and "technology" or "finance" and "technology", and describes the connection of modern, and most commonly, internet-related technologies which enables the services of the financial industry (Gomber et al., 2017; Alt et al., 2018; Boratynska, 2019; Hung & Luo, 2016). FinTechs in general can be referred to as innovators and disruptors in the financial sector that make use of the availability of ubiquitous communication and automated information processing (Gomber et al., 2017). Puschmann (2017, p. 74) clearly defines that FinTech is "*[...] incremental or disruptive innovations in or in the context of the financial services industry induced by IT developments resulting in new intra- or inter-organizational business models, products and services, organizations, processes and systems*". Boratynska (2019) has proposed a theoretical model which describes the best practices of FinTech: the DIPLOMA model. Each letter in the name stands for a characteristic which a FinTech shall achieve for best practice. The elements are as follows; *digital*, describing the process of converting information from analog to digital, which can create new business models, new value and new revenues. *Innovation*, representing the process of producing innovative ideas, solutions or products. *Pricing*, as FinTech offers lower prices, customers are enabled to reduce costs. *Learning*, explaining the flexibility and responsiveness of FinTechs to stakeholder feedback. *Openness*, entailing the trust, accountability and realistic expectations that FinTechs shall convey. *Modernity*, emphasizing FinTech's updated approach to trends and product development. Lastly, *agility* is referring to a set of principles which encourages iterative work, empirical feedback and adaptability to change (Boratynska, 2019).

There is varying consensus regarding which business functions are included in FinTech, but some literature has attempted to clarify. Iman (2020) expresses that due to its lack of a universal definition, what an English speaker means by FinTech could be very different to what a Frenchman or German means by it — let alone the rest of the world. However, Gomber et al. (2017) have outlined a framework where they categorize a number of business functions in which most literature categorizations fall under. Thus, the offset of the following definitions takes the basis from Gomber et al. (2017), and the Digital Finance Cube. The business functions within the Digital Finance Cube regard: digital financing, digital investments, digital payments, digital insurances, digital financial advice and digital money (Gomber et al., 2017).

The initial business function is defined as *digital financing*, where FinTech companies allow for alternative suppliers of financial resources other than the traditional financial institutions (Gomber et al., 2017). This business function entails companies who allow "*[...] individuals, firms, and start-ups to become independent from these traditional ways by using the Internet to acquire the necessary financing*" (Gomber et al., 2017, p. 543). Alternative literature state a number of business functions which could be included as subcategories under the umbrella of digital financing. Palmié et al. (2020) defines this area in two categories, the first being banking, as FinTech are moving traditional banking services to online and mobile banking, as an alternative solution to the traditional retail banking. In addition, crowdfunding is introduced as a separate business function within the overall categories of digital financing. Crowdfunding is also acknowledged by several authors as a business function in and of itself (Lee & Shin, 2018; Ng & Kwok, 2017; Iman, 2020; Hung & Luo, 2016; Terry et al., 2015). Crowdfunding is described as "*[...] potentially the most disruptive of all the new models in finance*", where broadly speaking, people are empowered through networking effects to take control of the creation of new products and projects (Terry et al., 2015, p. 8). Crowdfunding works as an open call, mainly through the internet, for the provision of financial resources, and therefore, matches in the description of digital financing (Gomber et al., 2017). In addition, electronically distributed loans or lending are discussed as a business function in the context of peer-to-peer (P2P) lending. P2P lending allows individuals and companies to lend and borrow with each other for low interest rates, due to the efficient online structure (Lee & Shin, 2018). The reasoning for the rapid emergence of FinTechs operating in this area is due to the FinTech itself not directly involved in the lending, but rather matching lenders with borrowers, and thus, circumventing the regulations and capital requirements restricting banks (Lee & Shin, 2018).

Gomber et al. (2017, p. 545) defines *digital investments* as a function which supports "*[...] individuals or institutions in investment decisions and in arranging the required investment transactions on their own by use of the respective devices and technologies*". Digital investments include, but are not limited to mobile trading, social trading, online brokerage, and online trading in the business to consumer context (Gomber et al., 2017). Lee and Shin (2018) define the business function as the capital market business model where new FinTech business models gain market share across a full spectrum of capital market areas such as investment, foreign exchange, trading, risk management, and research. The business function allows investors and traders to connect, share knowledge, place orders to buy and sell stocks, and real time monitorization of stocks through FinTechs (Lee & Shin, 2018).

Payments may very well be the most typical way of defining a financial transaction, where a transfer occurs in return for a good or service. *Digital payments* - or electronic payments - can be defined as all payments which are initiated, processed and received digitally (Gomber et al., 2017). The initial electronic payment solutions of online banking were established as digital account-based bank transfers. However, since the emergence, an increase of innovative and consumer friendly solutions have been introduced to the market (Gomber et al., 2017). Lee and Shin (2018) have divided the payment business model in two, to distinguish the various actors within the business function. While the wholesale and corporate payments may be more straightforward, the consumer and retail payment market consist of actors offering mobile wallets, P2P mobile payments, foreign exchange and remittances, real-time payments, and digital currency solutions (Lee & Shin, 2018).

Another traditional industry to be evolved by digitalization is the insurance industry. *Digital insurances* enable an increasingly direct relationship between the insurer and the customer (Lee & Shin, 2018). Lee and Shin (2018) state that insurance-based FinTech business models utilize data analytics to calculate and match risk, as well as offer appropriate products to meet customer demands. There are various types of insurance and services available, and digital insurance can through their disruptive business models offer new alternatives to insurances such as P2P insurance, which connects a group of customers and pools of their premiums to insure them against risk (Palmié et al., 2020). Although these innovative digital insurance FinTechs are on the rise, many customers place great trust in their traditional insurance companies due to concerns over security and fraud (Palmié et al., 2020). With that in mind, Palmié et al. (2020) argue that the scope available for digital insurances to cooperate with insurance companies can greatly improve efficiency, and thus, optimize the operations of mainstream insurances.

There are a multitude of comparison sites available for everyday products and commodities. These platforms are widely used in a number of industries, and research has shown that such comparisons have an actual influence on customer behavior (Gomber et al., 2017). The comparison platforms have also been established in the financial industry and go under the business function of *digital finance advice* (Gomber et al., 2017). Services offering financial comparisons can be divided into two categories, firstly, those who offer financial product reviews, and secondly, those who offer financial product comparisons (Gomber et al., 2017). In addition to the comparative services offered under digital finance advice, various communities for trading, investments and stocks have arisen for individuals to discuss and share information (Gomber et al., 2017). Such initiatives are often described as wealth management FinTech. New entrants to the wealth management

categories are utilizing new automated advising strategies, technologies and viral customer acquisition strategies to efficiently scale asset gatherings (Terry et al., 2015). A highly regarded technology-based solution is that of robo-advisors, which assists clients to customize their investment portfolios based on analysis of their risk profiles and investment goals (Palmié et al., 2020). Additionally, Iman (2020) also presents pension planning as a business function in FinTech as well as financial advice. However, this function is considered to fall under the umbrella of digital finance advice.

The last of the business functions presented by Gomber et al. (2017) is *digital money*. The term "digital currency" or "virtual currency" describes a type of currency which more or less fulfills all the common functions of money, but is only provided electronically and is prominently utilized on the internet (Gomber et al., 2017). However, based on current literature, Gomber et al. (2017) are the only one to present digital money as a business function in and of itself. This may be due to the fact that digital money is somewhat of a currency, and thus, is simply considered to be a means to an end within digital payments. Such an assumption could be made due to the description provided by Gomber et al. (2017, p. 546): *"Digital Money serves as a medium of exchange, unit of account, and store of value but—unlike traditional money—exists only digitally"*.

A business function presented by Boratynska (2019) and Palmié et al. (2020) is that of regulatory technology, or *RegTech*. While Boratynska (2019) does not discuss the reasoning behind such a categorization, Palmié et al. (2020) provide a more expansive explanation and suggest that RegTech regards FinTech companies who assist customers with their compliance processes. Such companies provide tools for implementing and monitoring compliance, as well as assisting customers to address and mitigate risks relating to laws, regulations and compliance (Palmié et al., 2020).

Although various authors discuss alternative business functions, they remain so sparse that they are not relevant to discuss to a greater extent. Defining FinTech is difficult due to the vast amount of literature on the topic and no consensus as to what definition should be used. Thus, it is considered especially important that a universal definition of FinTech can be adopted and turned into a business standard. Boratynska (2019) makes the point that successful FinTechs should be agile in their fundamentals in order to be responsive and quick to changes and feedback. Other than that, current research does not cover the importance for organizations to be agile. Acknowledging Boratynska's (2019) brief focus on FinTech agility, there is no literature addressing the need of traditional financial institutions to be agile today.

2.2.2 FinTech-Facilitating Technologies

The most obvious and critical technology in terms of FinTech is the internet, as it is the main infrastructural component connecting the various aspects of FinTech (Gomber et al., 2017). Recent developments and changes within the field of finance consist of: blockchain technology, social networks, near field communication (NFC), P2P technologies, big data analytics, and further technological enablers like mobile devices, intuitive interfaces and security technology (Gomber et al., 2017). It is of interest for the research to gain an understanding of which technology enables which innovative services or business functions. Palmié et al. (2020) identify the technological developments in three waves.

Wave 1 discussed by Palmié et al. (2020) covers *electronic payments*. The primary technology which could be discussed is that of the internet, which mediates users of the technology and allows for social interactions (Gomber et al., 2017). The technological developments implied with the internet and mobile devices enabled the popularity of electronic fund transfers through online banking to increase at an unforeseen rate with consumers being offered more payment methods than ever before (Palmié et al., 2020). FinTechs are offering services which are currently not supported by current banking infrastructures, such as digital payments, money transfers or loans (Palmié et al., 2020). In addition to the mentioned technologies, another modern FinTech category derives from the usage of NFC technology, which is a short-range wireless point-to-point interconnection technology (Gomber et al., 2017). For instance, NFC facilitates digital payment solutions by enabling mobile devices to exploit proximity-based payment services (Gomber et al., 2017).

Wave 2 provided by Palmié et al. (2020) emphasizes the emergence and disruption facilitated by *blockchain and cryptocurrencies*. A direct outcome of new technological developments is that of digital money. Digital money as previously covered would not be able to exist without the developments of the blockchain concept (Gomber et al., 2017). Blockchain was coined and originated from the original invention of the internet-based cryptocurrency Bitcoin (ibid.). Bitcoin — which is the original and most well-established cryptocurrency — functions due to blockchain providing Bitcoin's public ledger, which in turn works due to blockchain being an ordered and timestamped record of transaction (Gomber et al., 2017). Gomber et al. (2017) describes the development of blockchain through various iterations or generations. Blockchain 1.0 was envisaged for the transaction of digital currencies (Gomber et al., 2017). Whereas Blockchain 2.0, is the further application of the blockchain technology for various additional service offerings such as contracting, crowdfunding and e-wallets (Gomber et al., 2017). Palmié et al. (2020) explains that

another group of service offering within this category is that of P2P market platforms or lending platforms. Gomber et al. (2017, p. 550) provide the description that a P2P network is a "*self-organizing system of equal, autonomous entities (peers) [which] aims for the shared usage of distributed resources in a networked environment avoiding central services*".

Wave 3 introduced by Palmié et al. (2020) consists of *artificial intelligence* (AI). The concept of AI within finance, centers on the devices which can interpret and understand tasks (Palmié et al., 2020). In terms, AI captures the intelligence that can be exhibited by machines (Palmié et al., 2020). In this third wave, AI enables the introduction of tools which can understand and interpret tasks as well as take decisive actions to accomplish that task. For instance, AI is utilized within digital finance advice for robo-advisors, or in digital financing for digital brokers, or even in digital insurances (Palmié et al., 2020). In coherence with the increase of AI and data connections, there is another large contributor to the electronic payments segment which could be identified as big data. Big data is defined as "*data whose size forces us to look beyond the tried-and-true methods that are prevalent at that time*" (Gomber et al., 2017, p. 550). Palmié et al. (2020, p. 16) argue that, "*with the increasing customer maturity and adaption to artificial intelligence, new kinds of customer needs emerge*". This has been the trend since the emergence of FinTech - when one starts, many follows. Therefore, there is a greater need to understand and comprehend the factors which allowed the initial emergence of the FinTech revolution.

2.2.3 FinTech Background

Most FinTech literature appear to agree on the starting point of the FinTech development and expansion. Lee and Shin (2018) explain how the initial internet revolution profoundly affected the international financial markets as financial transaction costs were substantially decreased. The last quarter of the twentieth-century was distinguished by the increased transactional payments between customers as well as countries, and thus, the emphasis for electronic money and e-finance rose (Çokçetin, 2017; Lee & Shin, 2018). Although Lee and Shin (2018) utilize the terminology e-finance as well as FinTech, the concepts remain the same where e-finance and FinTech business models arose in the 1990s. Çokçetin (2017) clarifies that during this period of growth, massive amounts of funds were being transferred between countries at any given hour, and along with this development, banking products and especially investment products were getting increasingly complex. Special tools were required to gain fundamental understanding of such products, and up until the end of the 2010s, the finance sector had been using the latest and strongest IT systems and infrastructures available to serve customers (Çokçetin, 2017). These IT systems and

infrastructures served the banks well for the past decade, however, as the IT environment rapidly changed, in addition to web and communications developments, the IT structures in place proved insufficient to handle the increasing digital demands. The developments in technological devices and operating systems meant that the banks' IT systems became increasingly outdated (Çokçetin, 2017).

To make matters worse for the banks, the financial crisis in 2008 occurred and caused extensive regulatory changes for the industry. The implications of the financial crisis within the banking industry meant that regulatory restrictions for banking occurred and subsequently allowed for online banking to achieve a greater role as enablers as well as for inhibiting transformations in the financial industry (Gomber et al., 2017). Çokçetin (2017) further argues that the digitalization will not make banks obsolete, however, the customer will now more than ever want to ensure that their money is safe. Regulations and licenses will ensure that banks will remain while simultaneously making the possibilities for alternative service providers become more defined. As FinTech companies offer clients faster and almost free services ranging from payments to wealth management, the most valuable assets to banking in the digital world remains the customer base and consumer data (Çokçetin, 2017).

2.2.4 FinTech Ecosystem Participants

Having discussed the elements enabling the FinTech developments, it is of interest to regard the organizations encompassed within FinTech. Lee and Shin (2018) state that in order to understand the competitive and collaborative dynamics in FinTech innovation, it is of essence to initially analyze the ecosystem. Steffens (2015) defines the primary participants of a FinTech ecosystem as entrepreneurs, government and financial institutions. However, Lee and Shin (2018) elaborate on Steffens (2015) definition of the FinTech ecosystem participants as (1) FinTech startups, (2) technology developers, (3) government, (4) financial customers and (5) traditional financial institutions (Figure 3). Lee and Shin (2018) argue that when these elements function symbiotically, they contribute to innovation and stimulation of the economy, as well as the facilitation of collaboration and competition in the financial industry. Dapp (2017) describes the collaborations in the ecosystem as a generator of synergies and overlaps in terms of reach, size, customer base and opportunities for integration and internalization. Dapp (2017) identifies a number of actors who gain opportunities from collaborating with the banks, from the large internet platforms, small niche operators, or the FinTech startups. Additionally, Dapp (2017) addresses the fact that all of

these actors operate in a market for digital, data-based banking and thus it could be conceivable to add additional strategic partners to the ecosystem from complementary service providers.

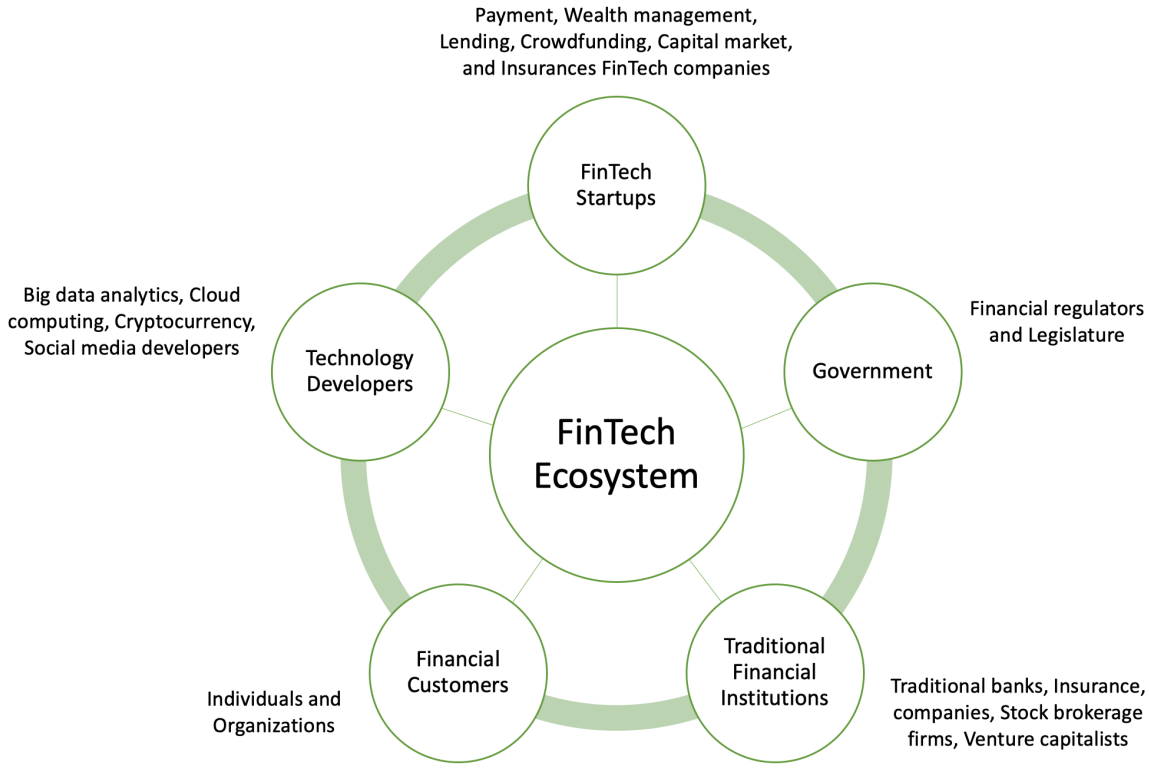

Figure 3. The Five Elements of the FinTech Ecosystem. Source: Lee & Shin (2018).

Palmié et al. (2020) take an alternative path where they describe the FinTech ecosystem through an evolutionary perspective in three stages. The first stage described entails prominent industry maturity, which opens up for the introduction of technological innovation in collaboration with incumbents. In this initial stage of the ecosystem evolution, the incumbent firms were dominant and seeked support from new ventures in order to exploit their capabilities in emerging technologies, i.e. for online banking or mobile banking. Incumbent banks cooperated with emerging technological companies to offer new incremental functions for banking (Palmié et al., 2020).

The second stage is defined by the symbiosis which occurs between the ecosystem participants. In this stage, Palmié et al. (2020) state that new and increasingly radical technological innovations such as cryptocurrency and blockchain technology become prominent. This indicated the start of an influx of technologies driven largely by the adaption and exploitation of new transactional behaviors of new ventures. This second stage is largely defined by the increasing volume of digital

transactions, where the data transactions slowly replace the physical currency or traditional cash transactions. According to Palmié et al. (2020), due to the increased redundancy of physical money, new ventures focusing on digital money receive larger inflow of venture capital. This is due to their capabilities to quickly respond to the changing ecosystems. The outcome is that the incumbent firms experience difficulties to cope with the disruption when attempting to co-exist in the same market.

The third stage described by Palmié et al. (2020) entails a position where the industry resilience shows its true colors and the prominent roles of new entrants take over and re-shape the industry. The restructure indicates a position where incumbents are confronted with the decision of either transforming and conforming with the reality of the digital transformation, or be confronted with the risk of diminishing customers and obsolete services (Palmié et al., 2020). With the introduction of new AI technologies, automation and efficiency is on the increase, and thus, previous unique value-adding's become increasingly obsolete in this new environment.

Dapp (2017) states that the corporate design of digital banking ecosystems enables all expertise and services to be incorporated and offered simultaneously through one service. Thus, the FinTech ecosystem allows all modern data and algorithmic-based financial services to be delivered to customers from single sources, in line with the needs of internet-savvy consumers (Dapp, 2017). In the FinTech ecosystem, diverse products and services from a multitude of actors can be interlinked digitally to ensure full customer flexibility while servicing the customers financial needs (Dapp, 2017). Although there exists literature explaining variations of FinTech ecosystems, there is little consistency or consensus on how the evolutions and described outlook will define the future of the ecosystem.

As Palmié et al. (2020) present the evolutionary phases of the FinTech ecosystem, they provide the underlying technological changes which sparked each wave. Although they conduct a literature review of ecosystems, they do not provide evidence for why the empirical setting now is an ecosystem rather than a traditional industry with simple supply chains. Palmié et al. (2020) establish that it is an evolutionary process, but other than stating that disruptive innovations have influenced the financial industry, they do not describe its prior state and form. The authors are assuming that it is an ecosystem, leaving the reader compelled to to figure out why and what it previously was. Furthermore, the article is focused on the innovations and technological changes which have provoked the evolution of the FinTech ecosystem, while other potential factors have been omitted.

2.3. Theme 3: Ecosystems

The research question and objectives will be addressed by applying the lens of an ecosystem. The ecosystem perspective provides an alternative view to the development of the financial ecosystem — without any focal firm. Nonetheless, the ecosystem perspective does offer organizations an alternative approach to consider strategy and operations. By exploiting the view of ecosystems, the ambition of this study is to explore elements which address the gaps in current research and apply existing theory to the context of the financial ecosystem.

The scope of relevant literature is covering the following topics: (1) *ecosystem definition,* (2) *value co-creation in ecosystems,* (3) *business ecosystem life cycle,* and (4) *ecosystem strategy*.

2.3.1 Ecosystem Definition

As the word implies, 'ecosystem' originates from ecology and was first used back in 1935 by the English botanist Sir A.G. Tansley. Tansley was a pioneer within the science of ecology and coined the term in his article "The Use and Abuse of Vegetational Concepts and Terms", where he defined ecosystems as "*a particular category among the physical systems that make up the universe. In an ecosystem the organisms and the inorganic factors alike are components which are in relatively stable dynamic equilibrium"* (Tansley, 1935, p. 306). Although the organisms are of primary interest, they can not be separated from the inorganic — or physical and environmental — factors. The ecology pioneers of the 1930's discovered that some ecosystems are more autonomous in nature than others, but they all demonstrate organization. The interaction between organisms and consistent mutual adjustment of components creates a system between individual organisms and the inorganic factors (Tansley, 1935; Phillips, 1931). In the concept of ecosystems, one must take long periods of time and progressive evolution into account. The rise to dominance of new types of organisms, as well as the decline and disappearance of older types, have been observed in the history of geology and ecology (Tansley, 1935).

It was not until 1993 that the concepts of ecology and its ecosystems were applied in a business context. Moore (1993) describes a business ecosystem as an economic community where companies and individuals co-evolve by operating both in terms of competition and collaboration. Through shared capabilities, producers, suppliers and competitors interact to encourage innovation. By producing new products and services, collaborating organizations satisfy customer needs by providing them with supplementary value. From an ecosystem perspective, a company is

considered an organism of a business ecosystem overlapping several industries, instead of belonging to a single industry. Later research within the topic has acknowledged this definition of business ecosystems (Moore, 1993; Valkokari, 2015; Adner, 2017; Gupta, 2018; Boratynska, 2019; Fuller, 2019; Palmié et al., 2020). To understand what actors, exist within the ecosystem of a business, one has to imagine all the stakeholders involved in the process of producing and delivering the value of a product or service. It encompasses, for example, vendors to which companies outsource business functions, technology providers, producers of complementary products, institutions providing financing, as well as regulatory and governing entities. The ecosystem also includes customers and competitors, when their actions and feedback affect the development of products or processes (Iansiti & Levien, 2004a; Sørensen, 2018).

Through the lens of ecosystems, it is more complicated in the globalized world of today to outline a general structure of what participants that exist in a single ecosystem. Set aside cases of specific ecosystems, there is no common ground on the definition of the borders of a network of companies, such as a business ecosystem. Valkokari (2015) has attempted to comprehend ecosystems by identifying ways to set the boundaries of an ecosystem. The system boundary definition of an ecosystem must be determined to be able to analyze the particular ecosystem. Valkokari (2015, p. 18) suggests that the ecosystem boundaries can be set in multiple ways: "*by geographical scope (local vs. regional or national vs. global), by temporal scale (from history to future or static snapshots vs. dynamic interactions), by permeability (open vs. closed), as well as by types of flows (knowledge, value, material)*".

One can also characterize various ecosystems by viewing them as either an affiliation or a structure. Adner (2017) aligns the definition of "ecosystem-as- affiliation" with the one Moore (1993) established for a business ecosystem. Adner argues that this perspective applies an organization-specific point of view, and underlines the need to extend and rethink company strategy beyond competition within the industry boundaries. On the other hand, "ecosystem-as-structure" is an alternative perspective to move the primary concentration to interdependent value creation. The perspective is defined as: "*the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize*" (Adner, 2017, p. 40). In other words, there is a mutual agreement between the multi-sided partnerships regarding their positions and flows among them — bound by a joint value-creation goal. In this perspective, all members of a successful ecosystem are satisfied with their positions, and thereby, alignment stretches beyond shared motives and incentives to the question of consistent collaboration and configuration of co-creation activities (Adner, 2017).

Jacobides et al. (2018) claims that the coordination of interrelated actors who each possess considerable autonomy is a key feature of ecosystems, and contributes with another theory in regards to ecosystem structure. Modular architecture is an additional structural aspect to observe ecosystems, where modularity here is meant to symbolize the separability along a production line (Jacobides et al., 2018). Distinct segments of an ecosystem represent participants that are divided by individual stages of the production process, and technological modularity enables interdependent components of a system to be created by different organizations, with merely limited coordination needed (Jacobides et al., 2018). Ecosystems also differ from other structures in the manner value is offered, compared to market-based transactions or supplier-mediated relations. In ecosystems, the end customer can pick and choose components of a product or service from a range of producers or complementors who are interdependent in their co-creation of value (Jacobides et al., 2018).

Davidson et al. (2015) argue that there are two factors which characterize an ecosystem, and the relationship between them suggests the strategy of ecosystem participants. The first factor is complexity, which refers to the complication of the activities undertaken in the ecosystem, and encompasses the diversity and amount of ecosystem participants, including the range and nature of relationships between them (Davidson et al., 2015). High complexity indicates sophisticated levels of the activities and value creation of the ecosystem. The position of a participant in an ecosystem with high complexity is typically safe as its function and specific capabilities are difficult to copy. Therefore, high complexity ecosystems have high barriers to entry and low threat of new entrants. On the contrary, low complexity describes an environment with low barriers to entry, a high threat of new entrants, and a participant's role in the ecosystem is weak as they are easier to duplicate (Davidson et al., 2015). The second factor of an ecosystem is orchestration. This characteristic concerns the extent of a participant's enforceability and influence over other ecosystem participants, ecosystem compliance and the degree of formality of ecosystem interactions (Davidson et al., 2015). In ecosystems with tight orchestration, interactions tend to be rule-based and orchestrators commonly are able to influence behavior and enforce preferred policies across the entire ecosystem. Loose orchestration refers to environments in which there is a lack of individual participants which possess substantial influence over the ecosystem or provide a central point of coordination for the ecosystem. Interactions in ecosystems with loose orchestration are typically value-based, and particular participants have limited abilities to condemn the behaviors of others (Davidson et al., 2015).

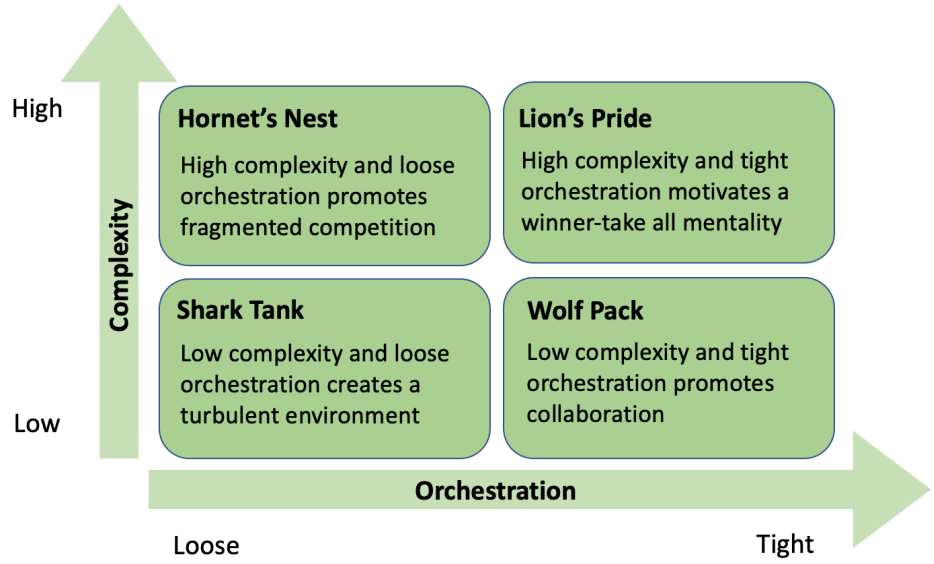

Figure 4. Complexity and orchestration characterize a spectrum of ecosystem archetypes. Source: Davidson et al. (2015).

Using characteristics of complexity and orchestration as variables, Davidson et al. (2015) have defined four ecosystem archetypes: (1) shark tank, (2), lion's pride, (3) hornet's nest, and (4) wolf pack, illustrated in Figure 4 above. The first archetype, *shark tank*, is characterized by low complexity and loose orchestration. Participants of a shark tank are obliged to create value through new and innovative methods, and value must be captured directly through interactions with fellow ecosystem participants. Due to the absence of a strong orchestrator, participants can not be protected and are constantly under threat of new entrants intending to combat and defeat incumbents. Therefore, actors in a shark tank must independently succeed to identify opportunities, establish relationships and align capabilities (Davidson et al., 2015). A *lion's pride* is an ecosystem with high complexity and tight orchestration, typically defined by the powerful orchestrator facilitating and monitoring activities in the ecosystem. The orchestrator's position as a cornerstone in the ecosystem enables it to guide specific activities and remunerate other actors for their participation and value generation to the ecosystem. Nonetheless, the orchestrator may be challenged by one or more emerging participants pursuing its role as the ecosystem leader (Davidson et al., 2015).

The third ecosystem archetype, *hornet's nest*, is characterized by high complexity and loose orchestration. In general, hornet's nest ecosystems have considerable barriers to entry, implying that actors are unlikely to be disintermediated. However, ecosystem participants tend to be

interconnected and bound by cultural or informal imperatives. Further, this type of ecosystem is often simpler as the value commonly is transferred directly via payments in exchange for activities performed (Davidson et al., 2015). The last archetype, *wolf pack*, is distinguished by high levels of orchestration but relatively low complexity, and promotes collaboration between ecosystem participants. The low barriers to entry allow new entrants to join the ecosystem relatively simply. Although tight orchestration indicates a simple nature of individual activities in the environment, the overall ecosystem can be extremely sophisticated. As a single orchestrator is unlikely to have a severe dominance in a wolf pack, the incumbent orchestrators may be safer in this archetype than in a lion's pride ecosystem, where incumbents in fact have a bigger threat of being replaced. While the structure and connections of ecosystem participants may be flexible, individual consumers will presumably not notice the changes. From the customer perspective, the wolf pack archetype tends to produce compelling and sophisticated experiences and value (Davidson et al., 2015).

2.3.2 Value Co-creation in Ecosystems

Meynhardt et al. (2016, p. 2983) proposes that "*value is situated in the social environment of a market object and a subject's appraisal of the object*". In the concept of value co-creation, the attention often lies on individual involvement in the production process, which can be (e.g.) emotional, physical or literal engagement. Adhering to this mechanism for engagement, individual organizations commonly become integrated actors of greater value co-creation systems (Meynhardt et al., 2016). Within business and innovation, value co-creation presents the need of modifying the nature of relationships and interactions between the co-creators of value: stakeholders, customers, suppliers and competitors (Still et al., 2016). In the current era of digitalization, value co-creation addresses the business opportunities and challenges related to economic and innovation objectives. For example, "*new individual services can be provided and they can be easily bundled and customized, there is easy sharing of data and information, and scaling can be achieved in an unprecedented way*" (Still et al., 2016, p. 1).

The co-creational aspect of value is fundamental within the topic of ecosystems, as value co-creation is the organizing principle of its participants (Meynhardt et al., 2016). As mentioned in the section above, the main focus for business ecosystem participants is customer value creation (Moore, 1993; Valkokari, 2015; Gupta, 2018; Boratynska, 2019). However, the value creation process in business ecosystems is not linear, and thus, many of the actors are not involved in traditional value chains (Iansiti & Levien, 2004b; Clarysse et al, 2014). The various companies of such an ecosystem collaborate unitedly to deliver a service or product to the end customer as an

coordinated system of interdependent members - rather than delivering value as individual players (Moore, 1996; Clarysse et al., 2014).

Davidson et al. (2015) agree with the understanding that value creation in ecosystems contradicts the value creation of traditional markets and industries, as ecosystem participants collaborate to produce and deliver value which they are not able to provide alone. To create additional value in ecosystems, participants firstly are compelled to identify new opportunities or existing gaps. These are then developed by organizations exploiting pockets of potential value and specializing competencies to address that pocket (Davidson et al., 2015). Subsequently, ecosystem participants need to leverage shared synergies by aligning capabilities and complementary strengths to address the emerging opportunity or gap. Each actor is required to remain flexible in their respective ecosystem roles and interactions with other ecosystem participants. As a result, a functional ecosystem will be able to pursue needs and gaps in the market, and create mutual value. Value which from an ecosystem perspective is considered to be greater than the combined sum of individual parts (Davidson et al., 2015).

2.3.3 Business Ecosystem Life Cycle

Theories have been established around the life cycles of products, technology, firm growth and industries. Correspondingly, business ecosystems have their own life cycle. Just as with the definition of business ecosystems, the conceptualization of the business ecosystem life cycle (BELC) made by Moore (1993) is the most established. Moore makes the reservation that the evolutionary phases blur and that the challenges implied in each stage can arise in other stages, but argues that all business ecosystems develop through four distinct evolutionary stages: (1) birth, (2) expansion, (3) leadership, and (4) self-renewal (or death).

During the initial phase in the life of a business ecosystem, *birth*, the concentration of entrepreneurs lies in understanding the customer, defining the value of a new innovation and how to deliver it (Moore, 1993). The short-term winners at this point are those players who succeed best at defining and implementing the customer value proposition. A major challenge in this stage is to tie up critical customers and important suppliers to capture this value proposition around the new product or service (Moore, 1993). This early on in the ecosystem life cycle, collaboration has proven to be favorable to address the entire customer demand. Meanwhile, firms must manage the protection of ideas and key channels from competitors who could be drafting on similar offers (Moore, 1993). A player who intends to lead the ecosystem forward must initiate an iterative

process of innovation and improvement to find the solutions which are most desirable by customers. Nonetheless, established corporations may benefit from waiting and reacting to successful innovations. Rather than performing continuous series of short and rapid development themselves, they can copy and exploit their wide reach to launch a product with already proven initial market acceptance (Moore, 1993). This means that larger companies de facto can join the market in the following evolutionary stage, expansion.

The *expansion* stage mainly implies the quest of grabbing market share. Battles of territory can transpire between competitors in the same business ecosystem, as well as with other ecosystems. By dominating important market segments, players can determine market standards and defeat substitutes or alternative solutions. Moore (1993) suggests that two conditions in general are necessary for an ecosystem expansion. Firstly, a business concept which is valued by a large number of customers is required. Secondly, ecosystem actors need to have capabilities to scale up and meet the market demand. This implies managerial challenges in terms of stimulating the broad demand without exceeding the ability to do so. This challenge can be addressed by initiating partnerships and developing relationships with suppliers to maximize supply and thereby achieve highest possible market coverage (Moore, 1993).

The third stage, *leadership*, is the arena for the fight of control in the ecosystem. For this combat to occur, two prerequisites need to be guaranteed in the business ecosystem. First off, the growth and profitability of the ecosystem must be substantial enough to motivate a fight over leadership. Furthermore, the structural stability of the processes and value-adding components of the ecosystem must be established (Moore, 1993). This stability ensures a foundation for suppliers to compete in their respective niches of value creation and encourages ecosystem participants to expand by acquiring business from other participants close to them in the value chain. Leadership is established by setting technical standards and guiding the investment decisions. If a company can control the key components of value, by being the only practical provider of something the ecosystem needs, it can maintain bargaining power (Moore, 1993).

The fourth and final stage of the ecosystem life-cycle is *self-renewal* or *death*. This phase takes place either when mature ecosystems are threatened by new innovations or ecosystems, or when a business community experiences sudden, drastic environmental changes, e.g. customer behavior, government regulations or macroeconomic conditions (Moore, 1993). No matter the cause, both circumstances reinforce each other. An altered business environment often allows new companies,

innovations and ecosystems to arise — and the other way around. Regardless of the scenario, how the ecosystem leader acts towards the threat of extinction is the decisive factor (Moore, 1993). The dominant actor must balance stability and change, as leading the consecutive eras of innovation is central for the long-term success and self-renewal of ecosystems. According to Moore (1993, p. 84), there are three possible approaches to self-renewal which can be applied independently or in combination: "*(1) dominant companies can seek to slow the growth of a new ecosystem; (2) they can try to incorporate new innovations into their own ecosystems; or (3) they can fundamentally restructure themselves to try coping with a new reality*".

Thomas & Autio (2014) present an identical life cycle including the phases of *initiation*, *momentum*, *control,* and their respective implications. Their empirical study shows that there is similarity across ecosystems in the process and structure of the first phase (birth/initiation). However, as the ecosystem evolves through the second (expansion/momentum) and third phase (leadership/control), there are evident process dissimilarity across cases (Thomas & Autio, 2014). The increasing differences through the life cycle sequences suggest imprinting and path dependence, which demonstrates how micro-level factors in early stages can drive the structure and processes of macro-level ecosystems (Thomas & Autio, 2014). Furthermore, the article is neglecting Moore's final phase of renewal or death. Perhaps suggesting that the third phase either continues through eternity, or that it leads back to birth or to death, which in fact would align with the fourth stage of Moore's (1993) evolutionary stages. In the latter case, the authors are not concentrating on the challenges and measures that the next phase would imply for its ecosystem members.

Another contribution to the BELC which can be found in literature is the one provided by Rong and Shi (2014) in their book "Business Ecosystems". Equivalent to Thomas & Autio (2014) and Moore (1993), the researchers conducted a cross case analysis in their study to identify and analyze the sequences of ecosystems. They claim to update the life cycle of a business ecosystem presented by Moore, "*in order to cope with an emerging dynamic business environment*" (Rong & Shi, 2014, p. 142). The study enriches Moore's evolutionary stages by proposing five phases of the life cycle: emerging, diversifying, converging, consolidating and renewing. The *emerging* phase transpires just as birth and initiation in the two life cycles described above. However, the second stage of Moore (expansion) and Thomas & Autio (momentum), is divided into two sequential phases by Rong and Shi (2014). First, *diversifying* occurs, where ecosystem members exercise solution diversity to meet demand in the still unsettled market. The network of actors and partners is highly flexible with efficient

interoperability. Subsequently, the market develops to become specialized and concentrate on certain solutions. Therefore, the third phase with the solution selection process is called *converging* (Rong & Shi, 2014). The next phase, *consolidating*, is characterized by the stability in the ecosystem. This stable infrastructure consists of the features of dominance, close partnerships, and mass production. As the name suggests, the last phase of *renewing* corresponds to Moore's final stage of self-renewal or death, where the ecosystem is threatened by emerging ecosystems and niche markets. If the original ecosystem is conquered by a new one, its participants will re-enter phase one to repeat the life cycle (Rong & Shi, 2014).

While Moore's life cycle is directing its attention to continuous competitive advantage, consistent with the evolutionary stages of an ecosystem, it does not address the future dynamic market. Rong and Shi (2014) argue that the diversification strategy accentuates managing the uncertain future and dynamic elements of the ecosystem. In other words, diversified products or services should be encouraged to meet the wide market demand, rather than a dominant strategy design.

The BELC clearly states the evolutionary cycle from birth to death (or renewal) to provide a gained understanding of the life cycle specific to ecosystems. However, existing literature exclusively seems to consider ecosystems which emerges from new innovations or prior ecosystems. There is a gap in current theory, as no literature is addressing the change process of a collaborative and network-structured ecosystem developing from a prior form of organization and structure between stakeholders.

2.3.4 Ecosystem Strategy

There are strategic challenges and implications to confront for companies in an ecosystem environment. As a matter of fact, the ecosystem perspective provides great opportunities for firms to achieve competitive advantage (Moore, 1996; Iansiti & Levien, 2004a, 2004b; Adner, 2006, 2017; Fuller et al., 2019). The different theories of ecosystem strategy guide individual ecosystem members in their dynamic competitive environment. Participation in an ecosystem requires an explicitly distinguished strategy, with the objective of collaborating with other stakeholders using indirect influence and developing the ecosystem for mutual benefits (Fuller et al., 2019).

Iansiti and Levien (2004a, 2004b) have contributed to research within ecosystem strategies and make the argument that a company strategy shall match the organizational environment for optimal performance. In a networked setting such as business ecosystems, the operating decisions should

be contingent on the dynamics and structure of the relevant ecosystem, and coherent with the role that the firm chooses to play (Iansiti & Levien, 2004b). There are four distinct roles with associated strategies to decide from in a business ecosystem: keystone, dominator, niche player and hub landlord. *Keystone* organizations play a critical role in an ecosystem, where their primary ambition is to enhance the overall health of their respective ecosystems. Keystones enhance the health of their ecosystems by providing a predictable and stable set of shared tools and assets to other players to use for their own offerings (Iansiti & Levien, 2004a, 2004b). By consistently making efforts to improve the entire ecosystem, keystones guarantee their own prosperity and survival. In other words, the health of others is not promoted for altruistic reasons, but since it is an excellent strategy. Iansiti and Levien (2004a, 2004b) argue that a successful keystone strategy consists of two components. Firstly, keystones need to efficiently create value in the ecosystems by e.g. increasing productivity, robustness and niche creation. If not, actors will not be enticed to join or remain in the ecosystem. Secondly, the value shall be shared with other ecosystem participants, in order to ensure a long-term loyalty to the system. Obviously, the health of the ecosystem is vital for the performance of the keystone actor. Likewise, the importance of the keystone is such that its elimination would lead to a collapse of the entire ecosystem (Iansiti & Levien, 2004a, 2004b).

The role of the *dominator* is to exercise the power of its position in a more traditional way than keystone actors - exploiting their central position to either seize value from the network, or absorb the whole ecosystem (Iansiti & Levien, 2004a, 2004b). Dominators are easily distinguished from keystones due to two primary reasons. The first is the physical size or abundance of a dominator, where keystones — by many measures — often are small relatively to their ecosystems. The second is that dominators do not encourage inclusion or diversity, and must either acquire the functions of the actors they eliminate, or remove those functions altogether (Iansiti & Levien, 2004b). The goal of a physical dominator is to directly own and manage a large portion of the ecosystem through vertical or horizontal integration. The dominator will ultimately control much of the network and be responsible for the value creation they capture, which causes a low possibility of any meaningful ecosystem to evolve or endure (Iansiti & Levien, 2004a). In contrast, the *hub landlord* — or value dominator — is recognized by its low physical presence, has a very limited control over its network and pursues a fundamentally inconsistent strategy. The landlord seeks control of value extraction, while at the same time often creating minimal value for the ecosystem. By draining most of the value created from the network, the hub landlord leaves little to sustain the ecosystem, which eventually starves and dies together with the landlord (Iansiti & Levien, 2004a, 2004b).

With the great advantages of the previous mentioned roles in mind, most players in business ecosystems apply *niche* strategies. The purpose of a niche firm is to differentiate from other players in the network by leveraging its specialized capabilities and leading its vertical of expertise (Iansiti & Levien, 2004a, 2004b). When the ecosystem offers the right prerequisites, niche players embody the majority of the system and generate most of the innovation and value creation. The positioning forces them to operate in the shadow of a dominator or keystone, and makes them dependent on fellow participants. This requires niches to investigate their ecosystems and analyze the attributes of both current and potential dominators and keystones (Iansiti & Levien, 2004a, 2004b). However, although a single niche firm may have little influence compared to a keystone, hundreds or thousands of niche players have the power to collectively withdraw from the keystone if its approach begins to convert into domination.

Adner's extensive research on the concept business ecosystems partly covers their associated strategies (Adner 2006, 2017). Strategy in the perspective of ecosystem-as-affiliation focuses on the increasing amount and intensity of actors that are connected with a certain company - how to leverage the relationships to increase its bargaining power and total value creation (Adner, 2017). From this perspective, Adner (2006) argues that ecosystem challenges are comparable to those of traditional project management, including the aspects beyond a company's internal capabilities to encompass external factors as well. However, designing a strategy for ecosystems requires actors to contemplate typical strategic questions in somewhat non-typical ways. Adner (2006) described three classic questions that firms shall address with the ecosystem strategy: where to compete, when to compete and how to compete.

The *where* refers to the assessment of both internal and external risks when prioritizing market efforts and opportunities. An opportunity with high internal risks and low ecosystem risks can often prove to be superior (Adner, 2006). *When* to compete concerns the alignment of innovation development with other actors whom the focal firm have interdependencies with. First to market strategies implies high development costs, which are justified by the advantage it creates. However, in a common ecosystem where value co-creation governs, being done with one's component ahead of direct competitors will not generate any benefits if the complementors are not ready with their respective components. Accurate arrangement of value chain integration and innovation interconnection may cause a slower development cycle, but also reduces costs and enables the firm to leverage a better long-term strategy (Adner, 2006). Lastly, *how* to compete mostly relates to the question of ecosystem leadership. If a company assumes the role of keystone or dominator, it will

be able to direct the development of the ecosystem according to its own strengths or wishes. On the other hand, undertaking leadership carries risks such as requirements of long-term resource investments and patience to find out if the firm has secured the leadership role. Choosing a smaller role also implies new strategic issues to face. Regardless of the positioning, a comprehensive understanding of the entire ecosystem and its dynamics, as well as a solid process for assessing ecosystem risks are critical for a successful strategy (Adner, 2006).

In his later contributions, Adner discusses strategy from the ecosystem-as-structure perspective and then defines an actor's ecosystem strategy as "*Ecosystem strategy is defined by the way in which a focal firm approaches the alignment of partners and secures its role in a competitive ecosystem*" (2017, p. 47). Rather than the search for competitive advantage, the heart of this structural perspective of ecosystem strategy is the quest for alignment. Partnership alignment is relative to a company's ability to coordinate its partners to the roles and positions in accordance with its strategy (Adner, 2017). The alignment entails identifying existing gaps in the value chain and then creating the conditions to close the gaps. The maintenance of multilateral partnerships through alignment is what creates sustainable competitive advantage (Adner, 2017).

Davidson et al. (2015) have also defined four distinct ecosystem strategies to apply and align with the ecosystem archetype the organization is operating within. In a shark tank archetype, differentiation is a key element to avoid being regarded as a commodity player and reduce competition. Participants shall locate new partnerships to engage in the ecosystem and intensify already established ecosystem relationships. A higher degree of integration with the ecosystem increases a participant's chance to sustain in a shark tank (Davidson et al., 2015). In a lion's pride ecosystem, participants should aim to align their strategic goals with those of the keystone. The more a company can become significant to the keystone player in delivering its share of the total value created by the ecosystem, the more powerful it becomes. By playing an essential role in the lion's pride ecosystem, a participant can potentially challenge the dominance of the keystone itself (Davidson et al., 2015).

To optimize their success, hornet's nest participants shall find their own way to capture value in the ecosystem. The better they can meet needs with goods and services, seek opportunities, build capabilities and partnerships, the more successful they will be. Although it is unlikely to be excluded from a Hornet's Nest, firms need to earn each and every transaction to prosper (Davidson et al., 2015). Lastly, participants in a wolf pack ecosystem are constantly threatened by existing or new

competitors to disintermediate their role. The keystone also has the power to weaken or eradicate a firm's position if the keystone is not pleased with the participant. Therefore, a participant must build a sustainable brand, unique attributes and maintain a solid relationship with the keystone in order to remain their position uncontestable (Davidson et al., 2015).

Significant strategic literature from an ecosystem perspective exists, providing valuable knowledge regarding how a firm shall define its ecosystem strategy. Based on a player's specific role in the ecosystem or based on the ecosystem archetype, current research contributes with qualified advice and suggestions for practitioners. Nonetheless, none of the encountered literature covers the concern of how incumbents of an emerging ecosystem shall act and react to the new circumstances implied with an ecosystem environment. Again, current literature appears to assume that ecosystems solely arise from new innovation, and that there are no pre-existing actors as the ecosystem comes to life.

2.4 Identified Research Gaps

There is extensive research which applies the ecosystem perspective to understand and analyze issues of business and management. For instance, the BELC provides a clear and developed understanding of the evolutionary stages of ecosystems from birth to death (or renewal). However, this literature review suggests that existing theories exclusively consider ecosystems to emerge from completely new innovations or prior ecosystems. Thereby, either disregarding or missing to recognize the possibility of ecosystems transforming from preceding forms of structures and organization between actors. Furthermore, ecosystem strategy is a widely acknowledged research topic as many researchers have accomplished to establish knowledge within the subject. Based on a player's specific role in the ecosystem, or based on the ecosystem archetype, existing research contributes with qualified approaches and recommendations for practitioners. Nevertheless, none of the encountered literature have addressed the concern of how incumbents of an emerging ecosystem shall think and respond in relation to the new circumstances implied with an ecosystem environment. Again, current literature assumes that ecosystems solely arise from new innovation, and that there are no pre-existing actors as the ecosystem comes to life.

In general, one can identify a significant lack of research applying the ecosystem lens to understand the financial industry and its development. Palmié et al. (2020) have provided a valuable research paper to trigger this area of interest. They present the evolutionary phases of the FinTech

ecosystem, where they provide the underlying technological changes which sparked each wave. Although they conduct a literature review of ecosystems, they do not focus on providing evidence for why the empirical setting in their study is an ecosystem rather than a classic industry with simple supply chains. Palmié et al. (2020) are establishing that the ecosystem emergence is an evolutionary process, but other than stating that disruptive innovations have influenced the financial industry, they do not explain its prior state and form. The authors are assuming that it is an ecosystem, leaving the reader compelled to figure out why and what it previously was. Furthermore, the paper focuses on the innovations and technological changes which have provoked the evolution of the FinTech ecosystem, while other potential factors of change have been omitted.

Boratynska (2019) makes the point that successful FinTechs shall be agile in their fundamentals to be responsive and quick to changes and feedback. Other than that, research is yet to discover the importance for organizations to be agile in the financial ecosystem. Acknowledging Boratynska's (2019) brief focus on FinTech agility, there is no literature addressing the need of traditional financial service providers to be agile in the complex and dynamic business environment of today. In addition, ecosystem literature does not emphasize the relevance of organizational agility, despite the established fact that ecosystems in themselves are changeable and fast-moving environments.

3. Methodology

In the following section, the authors strive to justify the methodological choices of this paper. Research is based on (but not limited to) a number of assumptions made in the research (Saunders et al., 2019). Whether these assumptions encountered in the research are made on realities faced in the research (ontological assumptions) or about human knowledge (epistemological assumptions), it is of essence to have these under consideration when constructing a research question and developing data collection procedures. With this taken into consideration, Saunders et al. (2019) offer *the research onion,* where the methodological choice for data collection is centered in the research onion. The diagram is utilized to depict the issues underlying the choice of data collection techniques and analysis procedures.

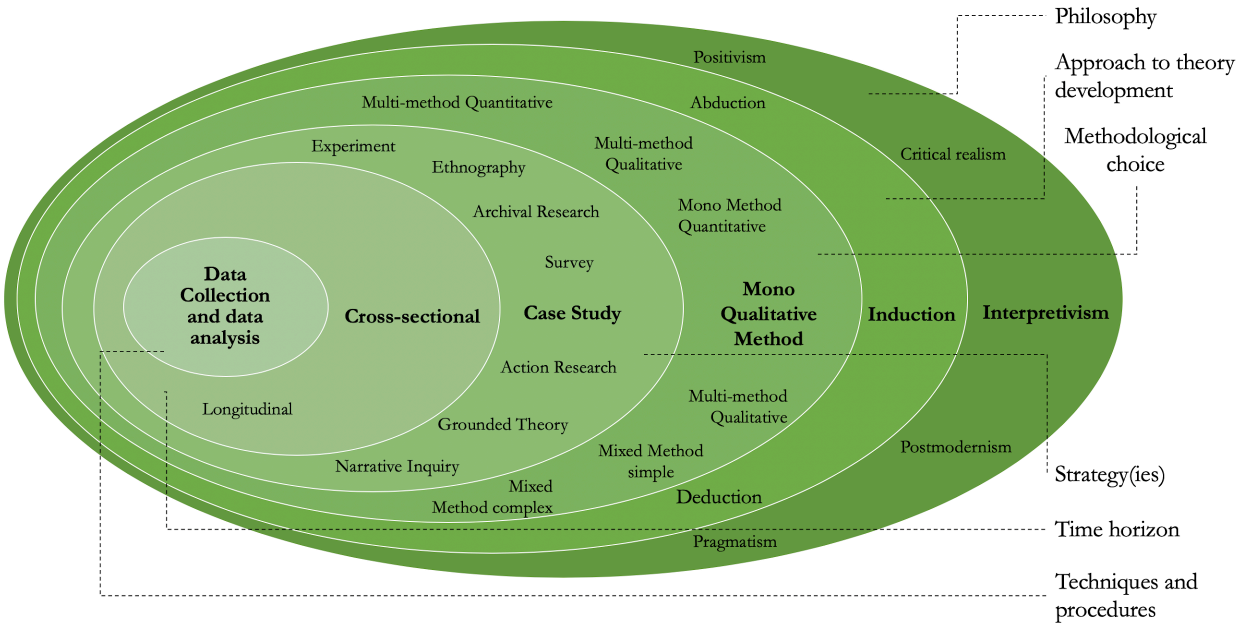

Figure 5. Research Onion Adoption. Source: Saunders et al., 2019, p. 129).

The research onion, adapted from Saunders et al. (2019) in Figure 5 consists of six distinct layers each attributing to the development of the research methodology:

1. *Research philosophy* - The philosophical stance of the research regards the way in which the researcher can collect and analyze data based on the way data is perceived and developed.
2. *Research approach* - The approach is defined by the choice between a deductive, inductive or abductive approach to the research. Often influenced by the philosophy or the assessed aim of the research.
3. *Methodological choic*e - The choice regards which method you elect to use in the research, whether it is quantitative, qualitative or a mixed method.
4. *Research strategy* - The research strategy refers to the style of research which will be utilized to collect and analyze data, which is contingent on the philosophical choice and research approach.
5. *Time horizon* - Time horizon defines the length of the study and contains either cross-sectional, short-term, or longitudinal studies which are carried out of an extended period.
6. *Techniques and procedures* - Techniques and procedures finally dictates how the data will be gathered and the manner to how the analysis will be carried out.

3.1 Research Philosophy

Initially, it is of utmost importance to gain a clear view on the research process, as the researchers make a number of assumptions through each stage of the research. The assumptions are applied to one of three perspectives; (1) the faced realities, or the perspective of ontology, (2) the manner in which a person acquires and views knowledge, also known as epistemology, or (3) how the research is affected by the researchers own prejudice and values, known as axiology (Saunders et al., 2019). Each perspective could be utilized as an alternative to gain and discover a truth to the research. The perspective and assumptions made by the researchers determine in which manner the research will be conducted, and therefore, the choice also affects the subsequent choices of research approach, strategy, methodological choice, time horizon and analytical techniques (Saunders et al., 2019). Hence, the outcome of the choice is derived from how the researchers interpret the data and serves as an expression of the researcher's individual perception on what knowledge is appropriate and how it has come to be. Therefore, this section will serve to clarify the researchers' perception of the knowledge in connection to applicable theory.

The philosophical research approach chosen for this paper is the interpretivist approach within the constructs of *social constructionism*, which suggests that reality is constructed through social interaction in which social actors create partially shared meanings and realities (Saunders et al., 2019). Interpretivism considers realities to be constructed intersubjectively, while social constructionism is an offset of subjectivism, where social realities are considered to be constructed through the perceptions and consequent actions of actors (ibid.). A constructionist research investigates how meaning is formed between research participants and how the knowledge forms a research story (Cunliffe, 2003). In context of a constructivist research approach, interpretivism emphasizes the fact that humans — in contrast to physical phenomena — create meanings and an interpretivist approach studies these meanings (Saunders et al., 2019). Interpretivism is critical of positivists as positivists attempt to create universal 'laws' that apply to all people, whereas interpretivism experiences people from different backgrounds, thus creating and experiencing different social realities (ibid.).

The purpose of an interpretivist research is to gain a deeper understanding and interpretation of social worlds and contexts. Thus, it is of essence for researchers to regard organizations and cases from various perspectives of different groups of people, as various organizational positions may have varying worldviews and may experience cases and organization differently. Additionally, as the data collection within an interpretivist epistemology situates that the research focuses on

narratives and stories to understand new worldviews as contributions, the methodological choice is typically indicative of small-scale and qualitative methods of collection and analysis (Saunders et al., 2019). Due to the manner in which an interpretivist researcher is required to step into the social construct of the individuals to understand their reality, this does in turn affect the axiology. However, in an interpretivist approach it is of essence to understand and explain the subjective meanings created, while recognizing that the researchers own values may affect the outcome. Researcher bias will be further explained and addressed in section 3.7.1 below.

The research philosophy of positivism has been disregarded in the scope of this paper for a number of reasons. Positivism relates to natural sciences and regards working in the context to produce a law-like generalization as a philosophical stance (Saunders et al., 2019). In contrast to interpretivism, positivism entails a promise of unambiguous and accurate knowledge and focuses strictly on scientific empiricist method design to yield data uninfluenced by human interpretation and bias (ibid.). Moreover, the purpose of this research is not to generalize its findings, but to obtain in-depth knowledge regarding the topic of interest.

3.2 Research Approach

The second layer of the research onion concerns the research approach and consists of the deductive, inductive and abductive approaches. Initially, the deductive approach seeks to explain causal relationships between concepts and variables through rigorous testing through a series of propositions (Saunders et al., 2019). Further, the deductive approach starts with theory expressed in a hypothesis in order to perform testing on (Malhotra, 2017).

In contrast, the inductive approach argues that using hypotheses based on existing theory may prematurely close off possible areas of enquiry (Malhotra, 2017). Induction allows for the collection of data in order to establish a general understanding of the nature of the problem and make sense of the qualitative data collected for the analysis (Saunders et al., 2019). The conclusion may still yield the same result, however, in an inductive approach the theory follows the data, rather than vice versa in a deductive approach (ibid.).

Additionally, an abductive approach allows not only for a selection of either top-down or bottom-up, but rather a mixture where the theory can be developed through an iterative process, thus in effect becoming a combination of deductive and abductive approaches (Saunders et al., 2019).

Abductive research is indicative of surprises that come into form at any stage of the research process and thus could be complemented by deduction and induction as logics for testing possible theories (Saunders et al., 2019).

Malhotra (2017, p. 162) argues that *"The interpretivist seeks to establish the legitimacy of their approach through induction"*. Although abduction would be an alternative approach, induction has been the most relevant approach as this report does not seek for generalizable results in all markets but is rather specific in its nature. Hence, the inductive approach will be utilized in the research to understand the Nordic financial industry, participant challenges and theory development. This is in line with the adopted research philosophy of social constructionism within interpretivism, and is the backbone of the qualitative nature of the data collection.

3.3 Methodological Choices

Research design is defined as the general plan of action in order to achieve a goal, and thus, may be defined as the plan to answer the research question at hand. The design is intended to contain clear directives derived from the research question and should specify from where the data is intended to be collected as well as how the data will be utilized and analyzed (Saunders et al., 2019). The third layer of the research onion and initial consideration for the research design is that of the methodological choice, concerning whether to follow a quantitative, qualitative or mixed method design. Given the stated philosophical choices, a rational decision based on the inductive approach is to adopt a qualitative study, in order to make sense of the subjective and socially constructed meanings encountered regarding the topic at hand (ibid.). Qualitative techniques were adopted as they are referred to as *"... naturalistic since researchers need to operate within a natural setting, or research context in order to establish trust, participation, access to meanings in-depth understanding"* (Saunders et al., 2019, p. 179). Additionally, as an elected single data collection technique of semi-structured interview and the corresponding qualitative analytical procedures are utilized, the study is considered a mono method qualitative study.

3.4 Research Strategy

Research strategy is defined as the fourth layer of the research onion and is a continuation of the research design. Initially, the research can be designed to serve an exploratory, descriptive, explanatory or evaluative purpose (Saunders et al., 2019). Depending on the outlook and research

objective of the project, the purpose may differ, and thus, it is of interest to regard the characteristics of the proposed research design.

In accordance with Saunders et al. (2019), the research approach of conducting various interviews which attempt to answer a specific problem or phenomenon through open questions, is considered to be that of an exploratory study. As this paper attempts to answer the question of *'How has FinTech affected the financial industry in the Nordics?'*, it is assessed to be beneficial to apply an exploratory research purpose to the study. This is considered valuable as the exploratory purpose allows for the exploration and investigation of the considered phenomenon, as well as a purposeful analysis of the data (ibid.). The implicit benefits of conducting exploratory research is that of the possibility of adapting and changing direction as a result of new data and discoveries. In this case, the exploratory approach is indicative of the data collection methods, where the literature review and the conduction of semi-structured interviews with industry experts provided deeper insights in regards to the research question, while allowing for further adjustments and considerations to the approach throughout the research process.

In addition to the research design's purpose, it is essential to regard the research strategy, as the strategy functions as a plan to achieve a goal and is utilized to understand how the researcher will go about answering the stated research question (Saunders et al., 2019). The research strategy functions as a methodological link between the philosophy, and elected data collection and analytical methods. The choice of strategy is thus guided by the stated research question and objectives. The connection in which these link to the philosophy, research approach and purpose in addition to external pragmatic factors such as the time horizon, existing knowledge and availability of data sources, further directs the choice of strategy (ibid.).

Saunders et al. (2019) present the eight research strategies as: experiment, survey, archival and documentary research, case study, ethnography, action research, grounded theory and narrative inquiry. The inherent decisive factor of which strategy is most applicable often returns to that of the quantitative or qualitative nature of the research design. *Experiment* and *survey* are in principle exclusively linked to quantitative research designs, whereas *archival and documentary research* may regard either quantitative or qualitative research or that of a mixed method design (Saunders et al., 2019). Additionally, *ethnography*, *action research*, *grounded theory* and *narrative inquiry* are assessed as exclusively qualitative research design methods.

Regarding the exploratory research purpose suggested, it is most coherent with that of a *case study* research strategy, due to the qualitative nature applied through an in-depth inquiry of a topic or phenomenon. Hence, the adopted research strategy is determined to be a case study as it "... *has the capacity to generate insights from intensive and in-depth research into the study of a phenomenon in its real-life context, leading to rich, empirical descriptions and the development of theory*" (Saunders et al., 2019). Flyvbjerg (2011) presents the existing criticism of case studies as they have been identified as faulty in their ability to produce generalizable, reliable and theoretical contributions to existing knowledge. However, Flyvbjerg clarifies that this critique has largely been down to positivist critique of small samples, but that case studies' true value now has been countered to establish recognition of the true value provided.

3.5 Time Horizon

The final layer within the research onion is that of the time horizon for the research design, and refers to whether the research adopts a cross-sectional or longitudinal approach. A cross-sectional research design indicates that the research acts as a "snapshot" time horizon taken at a particular time, while a longitudinal research design is indicative of a series of snapshots or a diary approach to events over a given period (Saunders et al., 2019). Cross-sectional studies typically employ a survey strategy in which they seek to describe the incidence of a specific phenomenon. In comparison, a longitudinal research design has the benefits of being capable of studying change and development over a longer period of time, and thus, also allows for a measurable control over the variables being studied (ibid.).

For this paper a cross-sectional approach will be employed, as due to time restraints it strives to investigate prior and current developments at a certain point in time. This specific snapshot will provide insight to the current situation of the financial industries and an indicative assessment of the impact FinTech has had on the traditional financial industry in the Nordics.

3.6 Techniques & Procedures

This section will describe the chosen methods of data collection, selecting data sources and the subsequent data analysis conducted to answer the research question. Each subsection will respectively provide a specification of the procedure of collecting primary data, how the sources

of data has been selected, who the participants are and the techniques of analyzing the data (Saunders et al., 2019).

3.6.1 Primary Data Collection

This subsection will dive into the collection of data, describing how it was conducted. The data in this research has only been gathered from primary sources and a mono qualitative method was applied. The collection of primary qualitative data can be accomplished using multiple techniques, but needs to be aligned with the purpose and objectives of the research.

In coherence with an exploratory study, this research has gathered data through semi-structured in-depth interviews. Semi-structured interviews are advantageous when seeking to understand the reasons behind opinions and actions. By adopting an interpretivist epistemology, this method addresses the need to investigate the individual meanings that participants ascribe to the particular phenomena (Saunders et al., 2019). The possibility to probe and follow up on interviewee responses, e.g. on words or ideas mentioned, provide meaningful depth to the data set. Additionally, semi-structured interviews allow the open discussion to be flexible and may lead to uncharted areas which have not been considered previously, but can be significant for comprehensively understanding the topic of interest and answering the research question (ibid.). Furthermore, semi-structured in-depth interviews are a solid methodological choice as the personal assurance of speaking directly to the researcher often is perceived to be safer. It enables people to reflect on developments and circumstances without having to write it down, and normally provides a higher response rate than (e.g.) questionnaires (ibid.).

Prior to the interviews, the participants were informed of the general areas of interest in order for them to mentally prepare for the interview. The interviews were also booked for one hour to indicate the time frame. However, due to the less structured nature of the interviews, the length of them varied (between 40 minutes and 1 hour and 13 minutes). To ensure that all key topics are covered in an interview, two interview guides were designed - one for FinTechs and one for traditional financial institutions respectively - consisting of a number of open-ended questions. However, the guides were adjusted to each specific participant, and modified subsequent to every interview to improve the questions, and thereby guaranteeing higher quality of the data. Furthermore, some questions were added to certain interviews to investigate the case and explore research objectives from the perspective of specific organizational contexts and the nature of events (Saunders et al., 2019). Appendix 1 provides an example of an interview guide with a

FinTech, while Appendix 2 demonstrates a more general interview guide drafted prior to the first interview with an incumbent bank. Additionally, the order of the questions and conversation topics varied in each interview according to the flow of the discussion. Again, this provided the paper with a rich and detailed data set. Either way, the defined key topics of interest for the interviews were:

- Introduction. Gaining a deeper understanding of both the individual's professional history, profile and expertise, and an extended presentation of the company which the individual represents.
- Organization. The company's approach to potential relationships with other types of actors in the industry. Strategy and positioning.
- Financial industry. Industry background and what factors have allowed FinTechs to emerge. How the industry and business environment in general have been affected by the rise of FinTech. Mapping the type of actors existing within the industry. Industry congestion and industry platforms.
- Future outlook. Prediction of future industry developments and trends.

Two out of six interviews were conducted in person, while the remaining four were conducted over phone or through other digital communication tools. The main concern regarding the use of semi-structured in-depth interviews is the impact interviewers have on the participants. The manner in which the interviewer asks questions and interacts with the participant will have an effect on the data (Saunders et al., 2019). This will be further addressed and elaborated on in section 3.7 regarding data quality.

3.6.2 Selection Strategy of Data Sources

In certain cases, it is feasible to collect data from the entire population due to a small population size. However, a census is commonly not feasible, and researchers should therefore strive to identify and collect data from a number of data sources which represents the population (Saunders et al., 2019). The population, target population and sample has been defined using Figure 6 below. Considering the research question, the total population is considered to be all actors operating within the Nordic financial ecosystem, while the target population is defined as the FinTechs and traditional financial institutions in the Nordic industry. These companies have been targeted as potential data subjects for this research since they are deemed to possess the relevant knowledge

and expertise, and thereby suitable for providing input in understanding how the financial ecosystem has been affected by FinTechs.

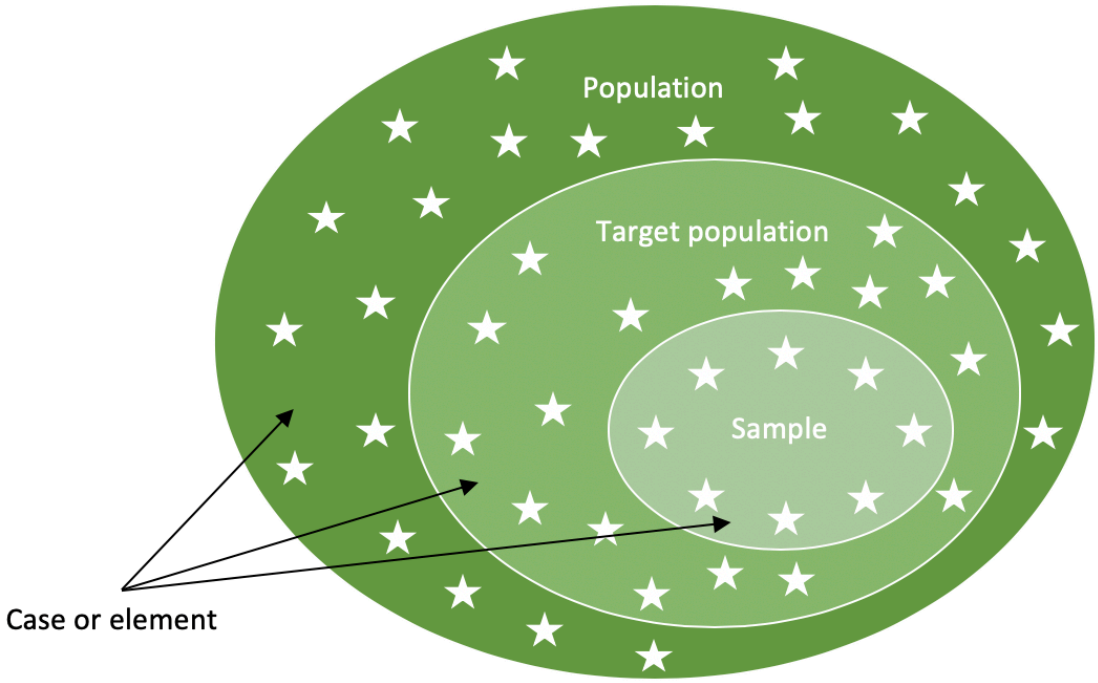

Figure 6. Population, target population, sample and individual cases (Saunders et al., 2019, p. 296).

The process of finding and selecting data sources in this study has followed the structure provided by Saunders et al. (2019). It has not been possible to create an exhaustive list of all the companies in the entire target population due to the number of actors existing within the Nordic financial industry being excessively high. As the research is a case study with relatively few data subjects, the elected participants were determined based on subjective judgment. The participants were selected based on their expertise and informative roles within the target population. This allows the study to meet its objectives and answer the research question in the best way possible (Saunders et al., 2019). To provide an insightful illustration of the current financial industry and how FinTechs have had an effect on its development, specific FinTechs and traditional financial institutions were identified and selected for participation. These organizations are critical in the context of this case, as they appear on two different sides of the financial industry development. By gaining an understanding from both sides of the spectrum, logical generalizations will be made to the entire Nordic financial industry (ibid.).

Unlike quantitative studies, there is a lack of rules deciding the amount of data sources in qualitative research. In a mono method case study such as this, the amount is very dependent on the research

objectives and questions (Saunders et al., 2019). In qualitative studies, there are no guarantees that new insights will increase in relation to the number of data sources. While high numbers enable statistical generalizations, qualitative research is commonly conducted on a small set of participants. Using less sources for data collection allows greater in-depth data, as well as additional time for planning the data collections methods. The validity and findings of the study is more reliant on the procedures and skills of data collection and data analysis, rather than the number of participants (ibid.). Moreover, as no list of potential data sources has been produced of the target population, there is no possibility to calculate the probability of the results and conclusions being generalizable to the entire target population. In other words, no statistical inferences will be made from the data.

3.6.3 Interview Participants

In coherence with the interpretivist epistemology, it is valuable and critical to gain different perspectives of both individuals and organizations, as they may observe events and phenomena in distinct ways. Adopting this philosophy, the heart of interest in this paper lies in the narratives to understand how FinTechs have had an impact on the development of the financial ecosystem. Therefore, six individuals with different positions in various companies have been interviewed to answer the research question. Both the individuals and organizations have been anonymized upon request. Below follows a description of each data source.

- ❑ CEO of Investment Bank.

The first participant studied at Stockholm School of Economics and has spent his entire career within Nordic investment banking ever since. Starting the career as an equity analyst, he has spent many years analyzing companies in various industries, their situation, performance and their future development. Prior to the Investment Bank, the participant has been employed at an asset management firm and one of the biggest commercial banks in the Nordics. Joining the current employer in 2009, he spent his first years as Co-head of Securities, and got promoted to CEO of the bank in 2015.

The Investment Bank is an organization of 600 employees located in six different countries. They consider themselves an advisory firm which provides advice to three different types of clients in a broad context. The first is corporate finance, where they give advice to corporations and their owners, the second type is wealthy individuals to whom they provide financial advice, and lastly, the bank advises institutions which are interested in Nordic equities. The main focus of all

operations is helping the client to deal with financial problems or improve the performance of its financial assets.

- ❑ Board Member of Crowdfunding Platform.

This participant graduated from Stockholm University, has been active in the financial industry for almost 40 years and has a background in a national central bank, one commercial bank and multiple investment banks. He is also an entrepreneur who has founded a hedge fund, co-founded the Crowdfunding Platform, and most-recently, is running an investment company. The participant was operative in the platform from the beginning, but is no longer needed on a daily basis and acts solely as a member of the board.

The equity Crowdfunding Platform was launched in 2015, but started the operations properly in 2016. It assists smaller companies — with about 50 to 100 million SEK in turnover — to find new owners and capital commonly between 20 and 100 million SEK. With their digital platform and legal shareholder agreements, they gather all investors in a holding company, which provides the capital-raising company with a single new shareholder. This is beneficial if the company wishes to sell their shares at a later stage. Utilizing this approach, the company only has to deal with one other shareholder instead of thousands. The platform has raised over 1 billion SEK for 35 companies since it started.

- ❑ Digitalization Associate at Retail Bank.

The third interviewee has an academic background within engineering; a Computer Science bachelor's degree and master's degree in Industrial Engineering and Management from the Royal Institute of Technology in Stockholm. He joined the bank about 8 years ago, starting off as a developer. Later working with banking for a short while, before joining the department of Digitalization and Innovation in 2018.

The bank is one of the biggest commercial banks in the Nordics, operating in six home markets and having in total over 800 branches. The Retail Bank also possesses an investment division dealing with capital markets. The bank is focused on a local digital approach — meaning that they offer all customers a personal banker, not only the wealthy ones. The goal of the bank for the past 40 years is to have higher return on equity than competitors, by having happy customers and lower costs. The Digitalization and Innovation department is a smaller team of five people aiming to

assist the entire organization with developing and enhancing capabilities within the space of digitalization, using factors of the digitalization to make the bank more innovative.

- ❑ Market Launcher at B2B FinTech.

This person grew up in France, later moved to Sweden and currently resides in Denmark. The participant holds a bachelor's degree in Business Administration and a master's degree in Entrepreneurship. Joining the FinTech in 2018, he has pursued a commercial role initially onboarding clients, which later on developed to a position of launching new markets. The participant decided to join the FinTech because of the exciting product, the company culture, its growth and the company ambitions.

The B2B (business-to-business) FinTech was founded in Denmark in 2015, but did not have an actual product for the two initial years, as it took two years to develop the platform it provides today. It proved quite complex to build the system and partnerships with other actors, but the product was finally launched in Denmark and the United Kingdom in 2017. During the subsequent year, the product launched in Sweden and Germany as well, and is currently being launched in four to six other European markets. The FinTech offers solutions to make company spending and expense reporting easier for companies and their employees. Its mission is to cover companies' entire range of spending pains and needs.

- ❑ Research Director at Open Banking Platform.

The participant's professional background lies within industry research, as he spent seven years as an industry analyst, forecasting and sizing the market shares of the software industry, firstly in Western Europe and later responsible for the EMEA region (Europe, the Middle East, Africa). In 2015, this interviewee launched a digital transformation team at his employer at the time. During this period, he began writing about open banking - before anyone else was talking about it. This led the way to employment at the Open Banking Platform, as the participant got the opportunity to make a difference in the financial industry and change the dynamics of the market. As a Research Director, the interviewee is supporting the business with the market insights required to ensure that the communication to the market is aligned with customer expectation. The platform aims to educate customers regarding the developments of open banking and what the key trends are in the market. Moreover, the market insights are further used as input by the marketing and sales departments in their activities to ensure an aligned strategy.

The Open Banking Platform was founded in 2012 to function as a consumer application and provides a tool for personal financial management (PFM). The mobile application gave the user a holistic overview of all of their finances within a single interface. Then, the company shifted to become the platform of open banking for all markets which it is today. The company positions itself as the rails and brains of open banking, providing consumers with the PFM capabilities to manage their finances by developing applications for banks. The platform aggregates information from bank accounts across Europe and is able to connect over 2,500 thousand banks, which is equivalent to nearly 250 million customer bank accounts.

- Executive Vice President at Universal Bank.

This participant has been employed in the bank for eleven years and has since 2018 been head of the Corporate and Private Customers division. The Executive Vice President (EVP) is responsible for the main part of the Swedish activity which includes the card division, the life insurance division, corporate and private customers, and the respective channels they are interacting in. Prior to this employment, the interviewee was employed in one of the other major banks in the Nordics for 21 years, acting both as head of the Swedish division and executive vice president. In total, the participant has spent more than 35 years in the banking industry.

The Universal Bank is one of the major banks in the Nordics, employing about 15,000 people. They consider themselves a universal bank with a full-scale offering to all customer segments, delivering diverse products and services for both private and corporate customers. The bank is operating in the Nordics, the Baltics, Germany, the UK, Ireland and other smaller strategic sites. Although the main focus is the Nordic market, they assist corporate customers to expand internationally and reach new markets. Furthermore, they are a exclusively corporate bank outside the Nordics, targeting the higher end of the corporate segment.

3.6.4 Data Analysis

This section intends to describe the process and techniques applied to analyze the collected qualitative data. The entire process has been visualized below in Figure 7. The philosophical standpoint of a research project guides the conduction of data analysis. The interpretivist epistemology and the aligned inductive approach has enabled this study to pursue the flow of the gathered data (Saunders et al., 2019). This data reflects a disparity between individual experiences, interpretations and socially constructed realities. In coherence with interpretivism, the analysis of data is required to acknowledge and be sensitive to the significance to this variation of perspectives

(Saunders et al., 2019). When analyzing and coding the data, the ecosystem lens was applied by the researchers.

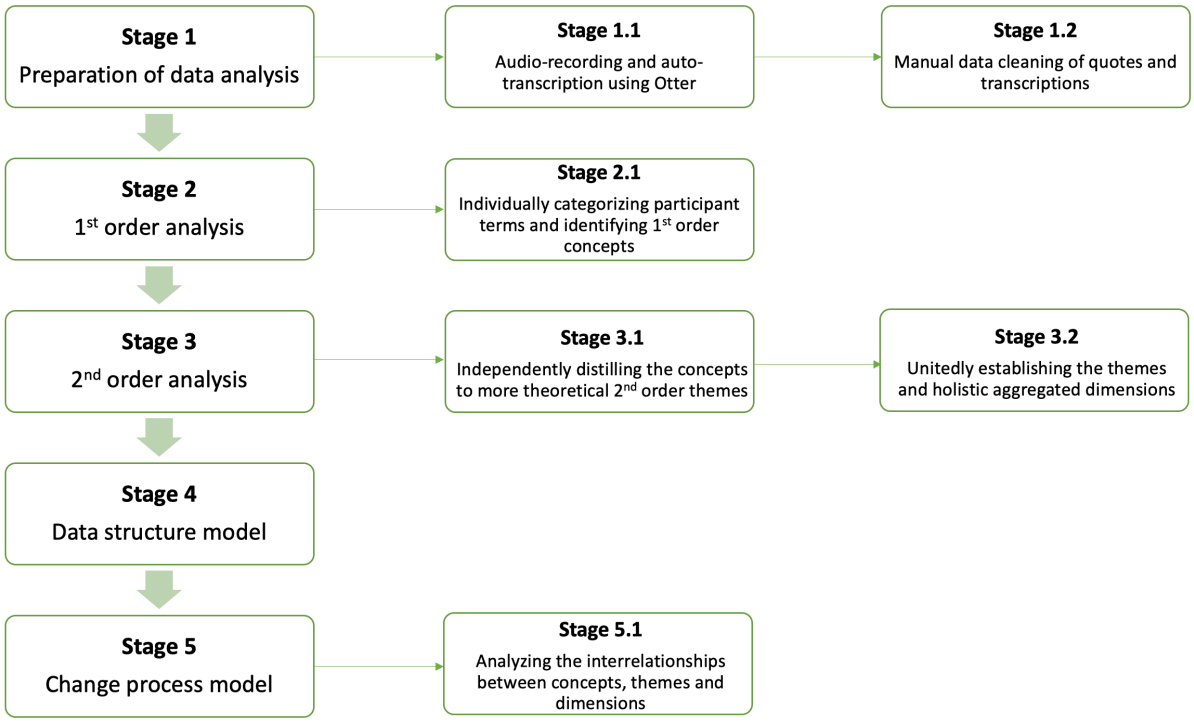

Figure 7. Data Analysis Process.

3.6.4.1 Preparation of Data Analysis

The qualitative data was captured through the use of the audio-recording mobile application Otter. The service has developed voice-recognition technology which can learn to recognize one's voice, and successfully achieved to distinguish between the interviewers and the interviewees. One main benefit of utilizing Otter's application is that the audio files are automatically transcribed. Although the service accomplished to produce adequate transcriptions, data cleaning was required to ensure correct quotes.

3.6.4.2 Thematic Analysis

Thematic analysis is widely considered as the common approach to analyzing qualitative data. The fundamental objective of this technique is to seek themes or patterns that occur across a data set — and in this case — across the six conducted interviews. Thematic analysis has been conducted in this research as it is considered to be the most suitable analysis technique for its purpose. It offers an adjustable yet systematic approach with a logical and orderly way to analyze qualitative data (Saunders et al., 2019). Applying an interpretivist inductive approach, the researchers explore

the various themes and interpretations for how FinTechs have affected the Nordic financial industry at large, examining the entire data set to identify occurrences and reoccurrences of patterns (Saunders et al., 2019). The thematic analysis was conducted using the qualitative data analysis software NVivo — a tool which enables a simple, transparent and efficient categorization of qualitative data.

The conduct of data analysis began by coding. Separately, the researchers analyzed the data set and categorized data based on the themes identified. In the 1st order analysis, one shall adhere to the concepts, terms and topics used by the interview participants and not attempt to distill categories (Gioia et al., 2012). As the analysis in this stage was carried out individually, a large number of categories were derived from the informant terms that may be difficult to draw conclusions from. When the 1st order concepts were identified in the data set, the researchers considered them at a more theoretical level, in terms of themes and dimensions which address the research question. The subsequent 2nd order analysis concerns the themes emerging from the data and 1st order terms that might explain the observed phenomena (ibid.). This stage of the analysis was also conducted independently by the two researchers. Once these more abstract themes were derived individually, a discussion took place to establish which distinct themes emerge from the data. Subsequently, the researchers analyzed how they distill to the 3rd order dimensions in the next phase of the analysis. When the aggregated dimensions were defined, all elements for building a *data structure model* (see Figure 8 below) were in place. The data structure encourages a theoretical perspective of the data and functions both as a graphic aid and as a visual representation of how the analysis process progressed from raw data to the factors which — according to the data — explores how FinTech has had an impact on the Nordic financial industry (Gioia et al., 2012).

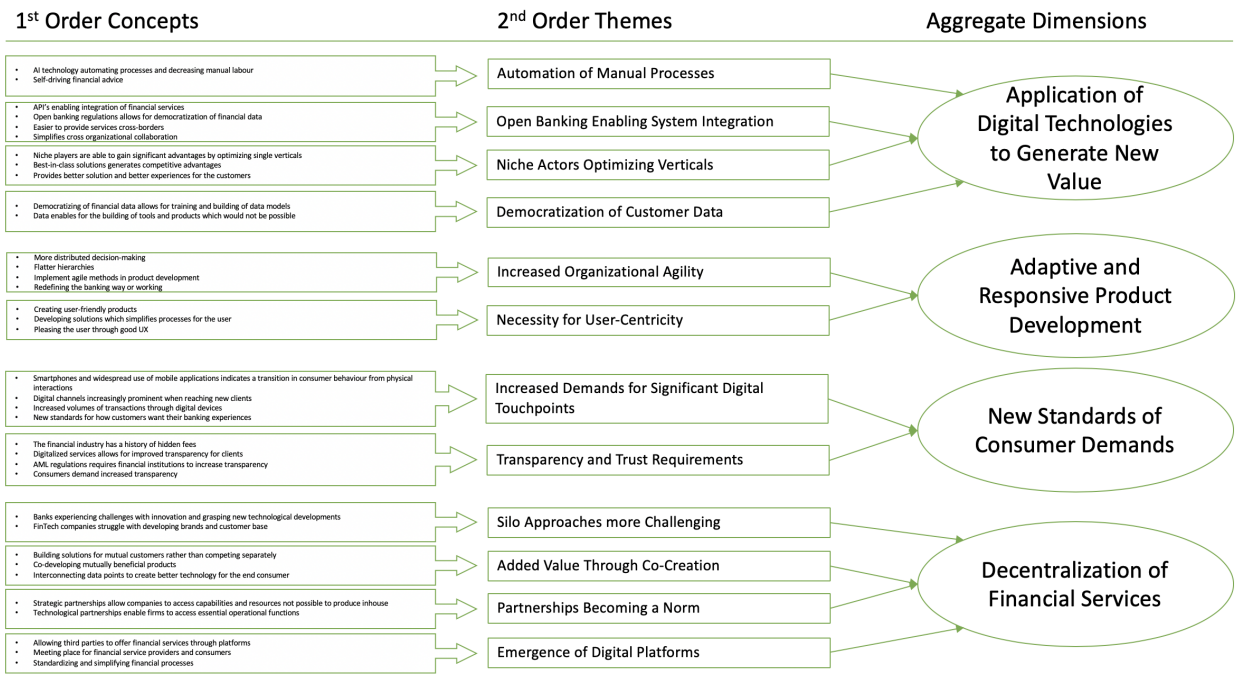

Figure 8. Data Structure Model.[1]

How helpful the data structure might be in visualizing the flow of data and analysis, it is merely a static portrait of a dynamic phenomenon. Thus, the data structure model was developed to an inductive model which captures the subjective understandings of the interview participants in theoretical terms. This *change process model* of the Nordic financial industry developing to an ecosystem (see Figure 9 below) demonstrates "*the dynamic relationships among the emergent concepts that describe or explain the phenomenon of interest*" (Gioia et al., 2012, p. 22). This required an analysis of interrelationships between the concepts, themes and dimensions, as well as their relation to the development of the Nordic financial industry. The change process model will be further explained in the Discussion section.

[1] The 1st Order Concepts, 2nd Order Themes and Aggregate Dimensions will be elaborated on in section 5. Findings.

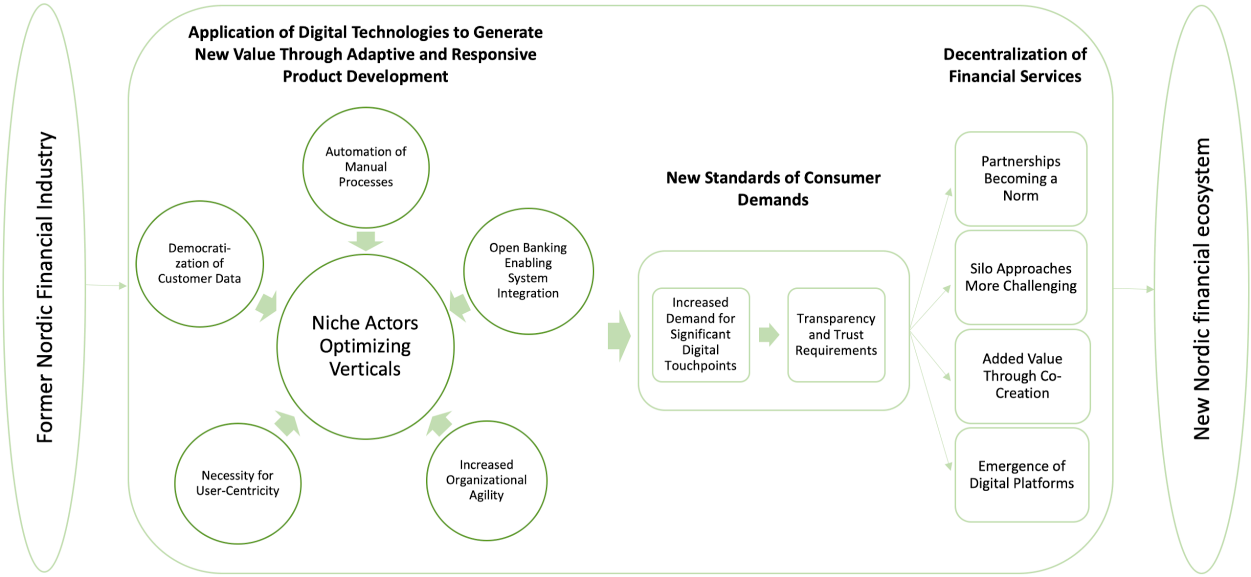

Figure 9. Change process of the Nordic financial industry developing to an ecosystem.

3.7 Data Quality

The following section will examine the quality of the research and its findings. As a consequence of the nature of an exploratory and qualitative study, the research relies on the quality of the contributions of the interview participants. In other words, both the results of the study and the research design must be evaluated and examined. To address the quality and trustworthiness of this qualitative research, the researchers have chosen to evaluate the quality criterions of dependability, credibility and transferability, and have applied measures to enhance each respective concept.

3.7.1 Dependability

The criterion of dependability is corresponding to reliability and measures how reliable the study is. If this research and the associated methods were to be replicated by other researchers, using the same procedure and data sources, the results and conclusions shall be equivalent to the ones produced in this study. However, the purpose of conducting semi-structured interview studies is rarely to repeat them, as the findings reflect the reality and circumstances of a certain point in time, which are subject to change — especially since this is a cross-sectional study. Furthermore, the exploratory and flexible nature of semi-structured in-depth interviews would be undermined by a perfect replicability (Saunders et al., 2019). Since it can be difficult to achieve absolute dependability in interpretivist research and case studies, it is crucial to ensure some extent of dependability by recording all changes in the research process and carefully documenting the entire progress to make

it simple to follow and replicate (Saunders et al., 2019). The entire process is composed of distinct procedures — such as literature review and data analysis — which have been visualized to make the research progress comprehensible for the reader and easy to duplicate (Figure 2 and 7).

These criteria can also be guaranteed by reducing biases and errors of both the researchers and the interview participants. *Participant error* refers to factors which affect the performance of a participant (Saunders et al., 2019). This threat was addressed by allowing the interviewees to determine the times of the interviews, which were suitable to their work schedules and left room to both prepare prior to the interview, and leave extra time after the interview if it was prolonged. This reduced the element of stress and reassured the focus of the participants. To address the issue of *participant bias*, potential elements of distraction which could lead to false responses were eliminated. The two interviews conducted face-to-face were performed in private meeting rooms to reduce distractions and encourage honest answers. To gain the confidence of these participants, the researchers tried to wear similar style of clothing as expected in the setting of the interviews (ibid.). However, due to limitations, four interviews were conducted over phone or other digital communication tools. Conducting these interviews, it was more difficult to assess the potential distractions. Another identified distraction which could make interview participants uncomfortable is the audio recording.

In terms of *researcher error*, several factors could potentially impact the researcher's interpretation of responses. To minimize the risk of researcher error, all important information regarding the financial ecosystem, the firm and the participant were consumed prior to the interviews. This reduces any risk of misunderstanding and misinterpretation of concepts or terminology used by the participant (Saunders et al., 2019). However, semi-structured allows probing questions to responses including undiscovered topics. Lastly, the threat of *researcher bias* refers to factors which induces the researcher to display his or her subjective view of the topic in question. The important factor to consider in the role as researcher is to act neutral — both in body language and the manner in which questions are asked (Saunders et al., 2019). The questions of the interviews were consistently open to avoid leading the participant to certain answers. Moreover, the researchers refrained from using theoretical concepts, such as ecosystems, digital platforms and value co-creation, unless they were used by the interviewee. Only then were probing questions including such concepts.

3.7.2 Credibility

Credibility is parallel to internal validity, which in an interpretivist philosophy concerns ensuring that the findings of personal understandings of the studied phenomenon actually matches what the interviewees intended, and have been generated through a rigid research design, rather than the opposite (Saunders et al., 2019). Credibility in qualitative studies is generally not regarded as a problem, since the detailed nature of qualitative methods implies that themes and findings can be shown in a rich set of data. Furthermore, proper probing in semi-structured and in-depth interviews enables an extensive and careful investigation from multiple perspectives (Saunders et al., 2019). Nonetheless, threats to credibility must be acknowledged and addressed.

Prior to the interviews, the interview participants were provided the topics of the upcoming interview to allow them to prepare accordingly — promoting credibility. Besides that, triangulation is an effective measure to guarantee research credibility and adds richness to the data (Saunders et al., 2019). As mentioned previously, six various interviewees of six different organizations were utilized as data sources. Additionally, multiple researchers have executed the study throughout the entire research process; reviewing literature, conducting interviews and analyzing the data. This enabled the researchers to initially analyze the patterns in the data individually, before conducting the 2nd order analysis collectively. This ensures reliable results, since multiple interpretations of identified themes facilitates a reduction of bias.

3.7.3 Transferability

The final criterion of data quality, transferability, can also be referred to as external validity or generalizability. Either way, it covers the results and conclusions of a research being generalizable to other relevant contexts (Saunders et al., 2019). In this case study, the financial ecosystem in the Nordics is the phenomenon of interest, whereas the goal is to go into depth in the ecosystem, not to generalize findings to other settings. Furthermore, the generalizability of qualitative research is often questioned because of the small and unrepresentative number of cases (ibid.). One could argue that the results and conclusions produced in this study could be transferable to other companies in the Nordic, other markets, industries or ecosystems with similar circumstances or settings. However, even in such cases, it would be imperative to duplicate the research in that particular context to be able to establish generalizability. Conclusively, the paper leaves the reader to assess the transferability of the findings of this study.

3.8 Limitations and Scope

The following section focuses on the limitations derived from the research as well as decisions of scope which occurred throughout the progression. Limitations entail factors which have an effect on the outcome of the research, which however, are not within the control of the researchers, and thus, may cause shortcomings or restrictions in decisions. Delimitations on the other hand, are established from decisions taken by the researchers during the progression and are stated as to show why certain decisions have been made.

3.8.1 Limitations

Initially, the research has been limited in terms of the substantiality due to limited time and space for the research. Such limitations factored in the methodological choices as time limitations canceled possibilities for an extensive longitudinal study and instead a cross-section "snapshot" perspective was elected. Additionally, this restraint decreased the number of participants able to interview. Due to the large amount of companies within the scope of the research, a selective approach was applied to attempt to gain a holistic image of the industry. However, due to external circumstances during the research process, difficulties of receiving a significant number of valuable interviews increased, and thus, limited the scope somewhat. Additionally, the aforementioned circumstances also limited the possibility of conducting the scheduled interviews in person at private locations — thus decreasing the possibility of ensuring no distractions for the interviewee.

Additionally, due to the conditionalities of the research, certain limitations may affect the result in a research regarding platform and ecosystem dynamics in particular. de Reuver et al. (2018) discuss that research on platform and ecosystem dynamics conducted with a short time horizon are generally considered as lacking. Hence, due to the applied cross-sectional time horizon a complete understanding of causality may be lacking. Thus, the preferred method of choice for the case at hand would have been to utilize a longitudinal research to gain a comprehensive understanding of platform dynamics.

3.8.2 Delimitations

Certain choices in terms of research boundaries had to be established prior to the study, in order to have a clear scope and present a comprehensible analysis. As implied in the research question, this study has been limited to the Nordic financial industry. Partly due to the poor feasibility — in terms of resources — to collect data from the global financial industry. However, the focus on a

regional market allows for an easier generalizability of the paper's results and conclusions. Despite that the purpose of this case study is not to generalize its findings, but to understand the Nordic financial industry in-depth, it is desirable to ensure an extent of transferability for the total quality and trustworthiness of the research. Although the study is focused on a particular market, it addresses a holistic scope of the financial industry in terms of the business functions the industry covers. The entire financial industry offers a wide range of products and services towards both companies and individuals, which in practice encompasses a large number of business areas. Even though the applied scope enables the researchers to comprehend the dynamics of the whole industry on a higher level, it prohibits the research from diving into the impact which FinTechs have had on individual verticals and investigating those ecosystems specifically. In reality, actors and dynamics of niche ecosystems may differ a lot between each other. In other words, the findings of this research will apply to the general financial ecosystem in the Nordics, and not to any other markets or specific business functions.

Another delimitation is the empirical decision to apply the ecosystem perspective to address the research objectives. By observing the development of the financial industry through the lens of ecosystems, this study has managed to draw numerous conclusions. If future researchers were to view the phenomenon using alternative theoretical lenses or frameworks, one has to acknowledge that it may lead to other findings.

Additionally, the active choices of the research design delimit the study. Mono-method qualitative case studies such as this, encounter limits in regards to generalizability. In alignment with qualitative research, this paper applies an interpretivist study, and is thereby interested in the socially constructed experiences of the data subjects. This can cause criticism towards the data, since it is subject to individual interpretations — both in terms participants' understanding of questions and researchers' analysis of the data. For instance, poorly formulated questions may be misinterpreted, resulting in untruthful responses. However, the implementation of semi-structured in-depth interviews has enabled the researchers to revise the interview guide subsequent to every interview in order to avoid weak questions

4. Empirical Setting

This section of the research paper is intended to create a setting in which to regard the research from. This research is a case study investigating the phenomenon of FinTech and its effect on the

financial industry in the Nordics, and thus, it is of essence to incorporate literature regarding the financial industry in the Nordics to further establish the setting. The setting takes a historical perspective on Nordic banking and regards aspects of consideration as well as recent difficulties.

The financial industry in the Nordics was from all indications a market which bloomed late. The Nordic region capital markets emerged at least 100 years later than that of the UK and the fragmented German markets pre-1871 (Andersen, 2011). Leaping forward in time to the 1900's, and the Nordic banks are considered early adopters of new technology and new ways of working, which sets the Nordic banks ahead of many other regions (Maixé-Altés, 2015). Nordic banks were traditionally savings banks, but in the early stages of the 1900's, the banks across the Nordic regions started collaborating amongst themselves to establish national associations in the industry and later created the Central Savings Banks as wholesale of retail finance (ibid.) Additionally, in the 1970's, further legislation permitted greater diversification in the savings banks operations indicating that banks could transition to more business-oriented functions while maintaining their relationships with households. Due to this increase in business-oriented functions, the banks were incentivized to further increase the adoption of new technologies and collaborations with other banks (ibid.). Regulatory changes have provided large changes for institutional cooperation between Nordic savings banks. The 1960's was defined by the electronic data processing cooperation setting up data centers in the Nordic countries allowing for banking to improve on all digital and computerized technologies, allowing for further automation of services in back office and front office processes which came to revolutionize banking management (Maixé-Altés, 2015).

In the 2000's, the collaboration and inter-bank borrowing and lending had functioned as a core to sustain services during times of recessions. However, when the banking crisis of 2007 - 2009 hit, the banks were severely impacted. Andersen (2011) states that 60 of Denmark's approximately 100 banks were subjected to various reconstructions, closures or bankruptcies. The reasoning for this was mainly due to large exposures to real estate projects as well as that in comparison to previous crises' that inter-bank lending and borrowing had decreased and expanded to international inter-bank loaning (Andersen, 2011). The higher gearing towards international bank loaning and borrowing meant that the Danish banking sector in specific had borrowed a total of DKK 500-600 billion. This high rate of international loans was made possible due to lower capital requirements introduced by authorities (Basel I and II) (ibid.). The following breakdown of international banks caused a massive issue and downturn in domestic banking across the Nordics. This downturn was seen in all of the Nordic markets, and as a result, the Nordic countries

introduced bank support and rescue programs as well as internal regulations creating new boundaries for the banking sectors.

As previously noted, the financial crisis in 2008 caused extensive regulatory changes in the industry and the fallout for the banking industry meant that online banking could serve as a larger enabler to the industry, as well as directly indicating transformations to come for the financial industry (Gomber et al., 2017). Increased digitalization efforts within the industry identified distinct opportunities to grasp market share and develop improved services and customer centric products. Dapp (2015) describes that the consumption behavior of many tech and internet-savvy individuals, and increasing amounts of traditional consumers constantly changes and adapts to structural changes. The transition from the desire of digital ownership, to digital access has indicated an increase in the need for digitalization of services across a multitude of sectors, which also includes that of the banking sector. Çokçetin (2017) stresses that the digitalization will not make banks obsolete, however, the customer will want to ensure that their money is safer now than ever in the digital services and applications. As FinTech companies offer clients faster and almost free services from payments to wealth management, the most valuable assets to banking in the digital world remains the customer base and consumer data (Çokçetin, 2017). Although banks produce financial data, European customers now own their personal data due to PSD2, or the Revised Payment Services Directive, which is an EU legislation adopted in 2015. The revised directive promotes open banking and aims to "*protect consumers better when they make payments, promote the development and use of innovative online and mobile payments and make European payment services safer*" (European Commission, 2015). This endorses an integrated market for European payments, which updated the prior Payment Services Directive (PSD1) from 2007. The original purpose of the PSD1 was to escalate pan-European participation and competition in the payment industry — also welcoming non-bank actors by providing equal market prerequisites (European Commission, 2007).

Dapp (2015) highlights that many traditional companies are making great efforts to move from their analogue origins or develop digital strategies and remain competitive, but that they are making slow progress and have been implementing fragmented siloed solutions. The emphasis is that *"Digital change, however, requires fundamental structural reforms with extensive adjustments"* (Dapp, 2015, p. 5).

5. Findings

The findings chapter in this paper is intended to state the outcome from the qualitative interviews conducted throughout the process of the research. The findings are ultimately the result of the research and are used as a basis for the following analysis and discussion. First off, the findings will initially account for the various types of stakeholders that each interviewee has identified as an influential actor in the respective company's business environment. These findings will enable a mapping of the type of actors that reside in Nordic financial industry. The chapter will subsequently follow the format of the data structure visualized in Figure 8, by introducing an aggregate dimension and then analyzing the 2nd order themes. From the analysis the following aggregate dimensions were identified; (1) *application of digital technologies to generate new value,* (2) *adaptive and responsive product development,* (3) *new standards of consumer demands,* and (4) *decentralization of financial services*. Each respective dimension will present the underlying themes and supporting arguments.

5.1 Co-Creators of Value in the Nordic Financial Industry

By identifying the industry actors, the aim is to categorize the various stakeholders and provide a mapping of the co-creators of value in the Nordic financial industry. Each interviewee was asked to contemplate the type of actors which engage in the co-creation of goods and services in their respective business environment. Based on the data derived from the interviews, the concluding section attempts to categorize which types of actors are a part of the Nordic financial business environment.

5.1.1 Actors of the Nordic Financial Industry

The B2B FinTech has several interdependencies with actors who complement its value creation and are essential for the infrastructural aspects of its products. The B2B FinTech cooperates with JP Morgan and Danske Bank as they do not possess a banking license themselves, and thereby, can not hold the funds of their customers (Market Launcher, 14:23). A function which is obvious, yet fundamental for their product. Similarly, they are dependent on the services of MasterCard and the Finnish card processor NFuse to enable card transactions, in addition to the UK card manufacturer Nitecrest who produces and sends credit cards to the customers of the B2B FinTech (Market Launcher, 15:37). Additionally, they are dependent on the cloud computing services of Amazon Web Services for their infrastructure (Market Launcher, 37:42). Furthermore, the B2B FinTech company has commercial partnerships with accounting firms for mutual benefits. The accountants are resellers of their product, meanwhile the B2B FinTech modernizes and improves the service offering of the accounting firms (Market Launcher, 24:49). Competitors such as Revolut were also

mentioned as a relevant actor in their business environment since they are also a neo bank challenging the large banks in holistic markets (Market Launcher, 04:26).

In the business environment of the Investment Bank, the clients, which to a large share are institutions, pension funds, and mutual funds, are a crucial stakeholder. The bank considers itself "*a meeting place between ideas and capital*" (CEO, 19:05). In other words, an intermediary between people with ideas that need capital, and people without ideas but possesses financial resources. These entrepreneurs with business ideas are attractive for the Investment Bank, as many private customers are highly interested in investing in non-listed equity. To grow both sides of the market and stimulate value creation, the bank has developed thorough processes to help entrepreneurs raise equity (CEO, 39:57). Moreover, the CEO mentioned the big banks and stock exchanges as critical collaborators in their daily operations (CEO, 18:04, 20:01). Lastly, the CEO argues that the value creation facilitated by the mediation of capital and ideas benefits the society at large since it creates growth, jobs, and wealth (CEO, 19:08).

The Board Member recognizes benefits of co-creation in the business area of the Crowdfunding Platform, as the fundamental purpose of a platform is to facilitate the interactions and transactions between different sides of a multi-sided market. As an equity crowdfunding platform, the FinTech company has created a place to meet for investors and companies seeking funds. The investors engaged with the Crowdfunding Platform concerns business angels, venture capitalists, and private investors (Board Member, 10:33). Furthermore, they are using the services of audit firms such as PWC and E&Y in the due diligence process conducted before a company can be announced on their platform (Board Member, 23:32). Lastly, banks are another stakeholder often cooperating with the Crowdfunding Platform to easier find good investment opportunities (Board Member, 14:13).

The Digitalization Associate at the Retail Bank emphasizes that they tend to involve their core customer group in the value creation process, including both private individuals and SMEs (Digitalization Associate, 22:44). For innovation purposes, collaborations with smaller FinTechs is common, with whom they also initiate strategic partnerships (Digitalization Associate, 08:53, 23:59). In the past years, regulatory instances have also been one of the more prevalent partners of the Retail Bank due to the significant number of new regulations in the industry (Digitalization Associate, 23:22). Additionally, the Digitalization Associate explains that they are quite involved with large technology companies who help the bank accelerate its digitalization process

(Digitalization Associate, 24:09). Competitors are also recognized as a group of stakeholders in the industry. There are competitors such as Klarna and Revolut, who are building a brand of being a challenger of banks and incumbent actors (Digitalization Associate, 15:53). Other than bank challengers, the Digitalization mentions other large incumbent banks as competitors with individual target groups (Digitalization Associate, 17:29).

In contrast to the Digitalization Associate, the EVP of the Universal Bank speaks of fellow incumbent banks as partners today. The large banks are jointly investing in developing infrastructure which can be exploited by all of them. The EVP provides the example of P27, a new shared initiative between the large banks with the mission to reshape the Nordic payment infrastructure (EVP, 21:47). The EVP also recognizes regulators and authorities as a critical stakeholder as of late, referring to the recent wave of new regulations (EVP, 23:15). Especially in the context of AML, the Universal Bank and authorities collaborate to detect people and organizations attempting money laundering and funding of criminal activities through banks. FinTechs are by the Universal Bank observed as potential partners since 2-3 years back, observing them as useful complements to the total value creation (EVP, 35:58). The bank is investing in some of these FinTechs to access their technology (EVP, 13:07). The EVP has also identified an increase in various digital platforms in the Nordic financial industry, aiming to become intermediaries in the market (EVP, 08:20). In the future, the EVP expects the industry landscape to change as the big technology companies may enter the financial services market on a much broader scale than today, with the disclaimer that the tech companies might consider the regulatory aspect of banking too burdensome (EVP, 36:14).

The Open Banking Platform acts as a facilitator, connecting different sides of the financial market — financial institutions and their customers. The platform mostly serves large financial institutions, building digital solutions for their corporate or private customers (Research Director, 22:58). The consumers are also critical as consent to use their personal data is required to create their third-party products customized for them. Other than these two sides of their platform, the Research Director was able to identify multiple additional stakeholders in the financial industry. He categorizes the technology side as an aggregation of software companies such as SAP, Wolters Kluwer, Sage, and freelancing developers (Research Director, 33:38). The regulator side of the financial industry consists of legislators, financial authorities as well as lobby groups, whereas the Open Banking Platform has bi-weekly meetings with local bank authorities or lobbyists (Research Director, 31:43). Furthermore, the Research Director acknowledges banking platforms, such as

Backbase, as its own category, with whom they have co-opetition relationships with (Research Director, 32:47). The FinTech community is identified as an additional stakeholder which the Open Banking Platform attempts to nurture and engage with (Research Director, 34:13).

5.1.2 Categorization of Actors in the Nordic Financial Industry

In an attempt to categorize all the aforementioned co-creators of value in the Nordic financial industry, categories have been refined from the results presented above. This provides the following types of industry actors: (1) *FinTechs,* (2) *traditional financial institutions,* (3) *regulators,* (4) *platforms,* (5) *technology providers,* (6) *customers,* (7) *neo banks,* and (8) *complementary service providers.* The definition of FinTech has been provided in the literature review, but the remaining categories will briefly be described below.

Traditional financial institutions entail banks and financial service providers which have existed in the industry prior to the emergence of FinTech. *Regulators* refers to governments, legislators, authorities and other regulatory instances which have an impact on the laws and rules of financial activities. *Platforms* encompasses stock exchanges, open banking platforms, banking-as-a-service (BaaS) platforms and other digital platforms which facilitates the interactions and transactions of multiple actors in the financial market. *Technology providers* is a wide classification of actors who offers technological or infrastructural components for other stakeholders in the industry. This includes general technology services such as cloud-computing provided by the big technology and software companies, industry-specific technology such as card processors, and freelancing developers. *Customers* include private and corporates on both sides of the market — providing capital and receiving capital. *Neo banks* are differentiated from the FinTech category since both the Market Launcher and the Digitalization Associate identify actors who are challenging incumbent banks, instead of seeking to collaborate with them. Lastly, *complementary service providers* are included as the last category and refers to services such as audit and accounting firms. Although they most definitely operate in their separate industries as well, they have clearly proven to co-create value in the Nordic financial industry.

5.2 Application of Digital Technologies to Generate New Value

Digitalization in general has enabled a previously unimaginable range of opportunities in terms of business models and products. This also applies to the financial industry, where FinTechs have exploited various technologies in their offering to provide value for customers. The data in this study produced four main outcomes of the digitalization which FinTechs have utilized to change

the dynamics of the financial industry; (1) *automation of manual processes*, (2) *open banking enabling system integration*, (3) *niche actors optimizing verticals*, and (4) *democratization of customer data*. This section will present and analyze the results relating to this application of digital technologies in the empirical setting.

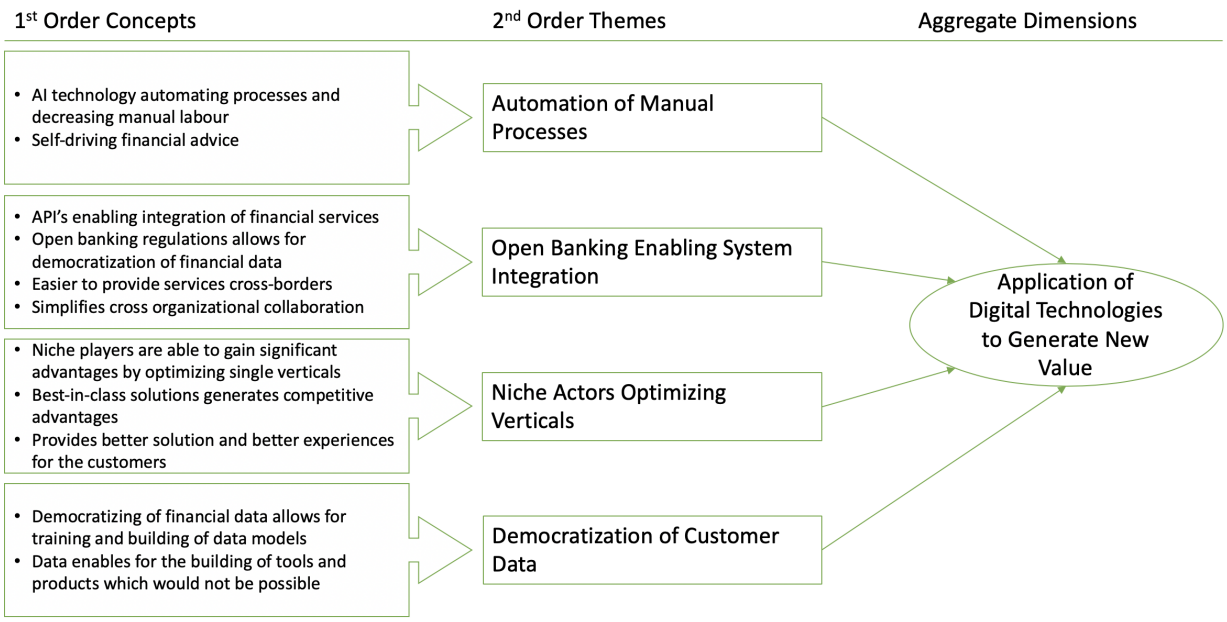

Figure 10. Data Structure Model. Application of Digital Technologies to Generate New Value.

5.2.1 Automation of Manual Processes

One change which FinTechs have provoked by exploiting technology to create better services and products, is that of automation. A traditional industry such as the financial industry has many old and manual processes which could be more efficiently managed. Both the Market Launcher and EVP have identified services such as accounting, invoicing, salary management and expense reporting which are managed automatically today (Market Launcher, 12:00; EVP, 13:15). The Market Launcher at the B2B FinTech explains that their system is able to categorize expenses, as well as retrieve receipts from email accounts to automatically create expense reports (Market Launcher, 28:48). Such automated solutions are technically cutting edge to the magnitude that the Universal Bank has decided to invest in them primarily to access their excellent technology (EVP, 14:56).

This automation for the benefit of the end customer has also been implemented in the area of financial and banking advice. The Digitalization Associate claims that it is sometimes referred to

as "self-driving finance", which is the current trend of moving from the transactional style of banking towards realizing personal financial goals in banking applications, rather than meeting an advisor in person (Digitalization Associate, 46:01). The following example of self-driving finance was provided: "*Instead of saying I need to have 100K on my account in order to buy a house, you can tell your bank (app) that I want to buy a house in two years, and they'll be able to help you or help explain to you if that's possible or not. And also say that it's possible that you can buy a house in five years, and we'll help you take the measures you need to take in order to get there.*" (Digitalization Associate, 47:07). The general banking customer service is becoming better through personalized advice on demand. The EVP argues that new technologies such as machine learning and AI create better grounds for providing customized financial advice, rather than generic recommendations (EVP, 37:33). What we can observe is a commoditization of the banking experience, according to the Digitalization Associate. Removing the daily routines and habits of transferring money and investing by yourself, and instead focus on the larger decisions in life (Digitalization Associate, 46:22).

One defined business function within financial advice where FinTech and automation has been recognized is asset management (EVP, 05:22). FinTechs have been able to develop robo-advisors — algorithms which have learned to optimize investing from a mathematical point of view — and offer these services at a low price (CEO, 43:56; Board Member, 28:39). According to the CEO, these automated asset management services are competing with their private banking operation by providing a new offering for certain target groups (CEO, 08:56). Additionally, the Board Member claims that the competitive advantage of robo-advisors also has enabled them to gain market share from fund management companies and banks (Board Member, 28:52).

Both the Digitalization Associate and the EVP believe that we are only in the beginning of the application of machine learning and AI in the financial and banking sector (Digitalization Associate, 45:45; EVP, 38:02). The EVP believes that the technologies will be integrated further in the financial industry in increasing areas of application (EVP, 38,08). Furthermore, the Digitalization Associate estimates that in five years, we will have a different set of banking applications where most of them will be based on automation (Digitalization Associate, 46:32).

Conclusively, automation of the financial industry concerns the modernization of processes. The replacement of manual processes is mostly facilitated by applying machine learning and AI. FinTech exploits these technologies to create new services and products, resulting in a better and more efficient customer experience.

5.2.2 Open Banking Enabling System Integration

The PSD2 regulation has been established to be one of the great open banking enablers in Europe. However, both the Digitalization Associate and the Research Director argue that open banking was practiced even before PSD2 was implemented. The Digitalization Associate claims that PSD2 merely formalized the sense of urgency of open banking, and that the phenomenon will continue to revolutionize the industry (Digitalization Associate, 29:03). The Research Director encountered the application of open banking when discovering the consumer app of the Open Banking Platform, which also was prior to the time of PSD2 (Research Director, 04:55). Even earlier than that, German banks developed FinTS (Financial Trading Services) — which is an open standard protocol — allowing companies to connect to the FinTS API and access financial data from all banks which also are connected to the protocol (Research Director, 13:33). Nonetheless, PSD2 has been crucial for the advancement of open banking. In line with the Digitalization Associate, the Research Director explains that PSD2 "*created an incredible enthusiasm and excitement in the market around open banking"*, which has created substantial momentum for the Open Banking Platform (Research Director, 10:49). The European Commission wants to encourage innovations such as open banking, and likes the idea of improving the quality of services and the digitalization of financial services to meet the demand of customers. However, they identified a gap in the legislation as many of these parties are engaging with great volumes of sensitive information, thereby realizing the need to regulate these parties to ensure that they are transparent. (Research Director, 14:43).

No matter whether one chooses to acknowledge PSD2 as the enabler or not, open banking creates an infrastructure which permits companies to integrate their systems and products using APIs. This technology encourages innovation and has made it easier to invent, produce and implement FinTech products in the market (Market Launcher, 18:57; Digitalization Associate, 28:30). The ability to create a product which can be integrated with the systems of incumbents lowers the barriers to enter the financial market drastically. For instance, The B2B FinTech chose to partner with the banks JP Morgan and Danske Bank as their digital infrastructures were better and technically more advanced (Market Launcher, 17:40). Meaning that those banks possess better APIs, and thereby, the B2B FinTech can integrate their product to a greater extent — creating more value for the end customers (Market Launcher, 17:50). The development of open banking through APIs was an inflection point in the financial industry. FinTechs went from providing additional services on top of the basic banking functions, to integrating the services into financial products which then can cover a wide spectrum of services (Digitalization Associate, 41:14). This

generates value for the customers as they are able to have one single (or a few) banking application(s), instead of "*18 different apps to do banking*" (Digitalization Associate, 41:46).

Although open banking promotes and simplifies cross-organizational collaborations, it has also resulted in increased competition. As per the purpose of PSD2, open banking breaks down the national borders and the financial market approaches a single European digital market and a single European payment area. This facilitates cross-country competition within financial services and increased competition for all financial service providers (Research Director, 16:38).

One can synthesize that open banking is one of the essential infrastructural pillars of success which has allowed FinTech to emerge and enter the financial market. In extension, FinTechs create products independently or in cooperation with other actors. Either way, the new products generate supplementary value for the customers. Furthermore, the data suggests that the application of open banking and API technologies has boosted collaboration and competition in the financial industry, both between individual organizations and between national markets.

5.2.3 Niche Actors Optimizing Verticals

Subsequent to the financial crisis in 2008, many incumbent banks were primarily eager to acquire more customers, targeting all market segments rather than addressing certain target groups (Digitalization Associate, 34:44). By executing this strategy, universal banks are providing a wide range of financial services and solutions, but at the cost of quality in each vertical. The lack of focus of the incumbent banks enabled niche FinTechs to emerge and optimize verticals, or even create completely new verticals. For instance, the B2B FinTech consider themselves one of the actors which established the company spending field within the financial industry (Market Launcher, 47:46). For the more holistic banks, company spending is such a small portion of their operations and total revenue, which has offered the B2B FinTech the opportunity to specialize in that vertical (Market Launcher, 06:03). One can synthesize that FinTech has been a provoker of a vertical disintegration of the financial market, from a strictly horizontal market to consisting of multiple verticals. Customers are moving from having a single financial service provider for all their financial needs, to using particular services and solutions for specific purposes.

The rise of FinTech and the optimization of verticals can also be related to new business models and strategies in the financial industry. The strategy to focus on a specific niche enables companies to specialize in addressing a specific need. However, a narrow scope also pressures a company to

be one of the best players in the vertical. The CEO of the Investment Bank explains with an example: "*What it's all about is to be number one in what you're doing, maybe number two, but you have to be. Because in the end, I doubt that - and I think this goes for all industries - that you don't want to go to the 10th best restaurant, you want to go to the best. So therefore, if you are top in your niche, you will survive. What happens if you're number 10 or number 15 is more difficult (to know)*" (CEO, 33:38). Naturally, niche actors provide solutions which are best in their respective vertical and most appreciated by the customers (CEO, 34:42; Market Launcher, 06:25; Research Director, 56:52; EVP, 09:51). Other than the possibility to specialize, FinTechs gain competitive advantage from applying niche strategies as they can exploit comparative advantages. Even though smaller organizations enable lower costs, the relatively weaker brand of FinTechs forces them to offer services at a lower price than universal banks (CEO, 12:50; Research Director, 57:02). In other words, FinTechs can in general exploit lower opportunity costs to attract customers.

An outcome of niche vertical optimization from the perspective of the end consumers is that they are offered more options, better solutions and better customer experience (Market Launcher, 06:25). The narrow scope and the digitalization are a key combination for FinTechs to capitalize as they develop superior digital solutions (EVP, 15:31). An increasing number of niche players in each vertical, including the incumbent holistic banks, implies increased competition. This is another benefit for the customers as they are now provided lower switching costs as well as lower prices (Research Director, 57:02). Synthesizing this perspective, vertical optimization creates more value for the customers in multiple ways.

As FinTech entered the market and began to grab market share from incumbents, they mostly focused on basic niches within the business-to-consumer (B2C) market (CEO, 07:24; EVP, 04:19). One can now observe FinTech increasingly engaging in more complex and traditional bank services such as mortgages and insurances (Market Launcher, 07:04; EVP, 05:22). Moreover, FinTechs are progressing to the B2B space, developing new financial verticals for corporate customers (EVP, 08:02). The CEO predicts that certain services and niches will be subjected to change in future. It is difficult to predict exactly which business areas that will be changed, but the CEO believes that FinTech products will still generally be solution-specific, competing in specific verticals rather than with the entire operations of the incumbent banks (CEO, 35:13).

In conclusion, FinTechs have leveraged niche strategies to optimize verticals. By exploiting lower opportunity costs, FinTechs can lower prices and decrease switching costs for customers.

Additionally, the specialization of FinTechs attracts customers as they are able to provide better customer experience and superior digital solutions. Ultimately, the vertical optimization has stimulated the development of the financial industry to convert from a horizontal market to containing multiple verticals.

5.2.4 Democratization of Customer Data

Although open banking was applied before the introduction of PSD2, the regulation officially provides customers with the ownership of their data. At the request of a customer, EU member states and its banks are forced to share this data and open up their payments infrastructure to third parties (European Commission, 2015). Firstly, the democratization of financial data increases competition as financial services and financial advice now can be provided by other actors than the biggest banks in a market (Research Director, 16:24). Especially, the cross-border competition facilitated by open banking and PSD2 is dismantling the monopoly of financial services in Europe. This is also aligning with the EU mission of creating a single digital market in Europe and one single European payment area (Research Director, 16:52). Secondly, by giving the power to the people in terms of ownership of data, switching costs are lowered — which implies stronger bargaining power of buyers (Research Director, 57:02). This is beneficial for the customers as the businesses are required to offer better customer experience, higher quality products and lower prices.

The Research Director states that although the Open Banking Platform had already begun to realize its vision to break down the monopoly of financial data, the implementation of PSD2 was prosperous for their company (Research Director, 10:49). They are now enjoying an easier time than ever to connect customers and financial institutions across borders. For example, a Danish credit institution is currently applying their technology in order to acquire and onboard credit customers in Spain (Research Director, 17:20). This supplies the Open Banking Platform with a greater volume of transactions processed by its platform. In fact, they process more transactions than any single bank in Europe does within its own country (Research Director, 28:09). This is advantageous as it allows their data models to be trained to an extent previously not possible. The data models are used when building digital financial products and tools, and these can be tested on billions of transactions — which ensures the security and performance of the products (Research Director, 28:55). The Research Director argues that the well-trained data models has made the Open Banking Platform a "*critical banking infrastructure in Europe*" (Research Director, 28:31). To enhance data models further, the Market Launcher believes that firms need to interconnect their

data points and older systems. This will ultimately create better data flows, technologies and more value for the end customer (Market Launcher, 58:53).

Customer data can be applied to create value through more convenient and improved digital financial services. The EVP makes the point that data is feeding technologies such as machine learning and AI, which can be applied in personalized financial advice (EVP, 37:12). Instead of providing general financial advice to customers, companies are increasingly able to provide personal recommendations through digital channels (EVP, 37:52). In other words, customers gain value from receiving better services through more convenient tools. Both the EVP and the Digitalization Associate believe that customer data will become progressively valuable and will be increasingly implemented to create better financial service products (EVP, 37:43; Digitalization Associate, 48:05).

To conclude, the democratization of financial customer data has decreased switching costs, and thereby, customers are acquiring higher bargaining power. This generates value for the customer in three similar, yet distinct ways. Firstly, stronger bargaining power of buyers encourages players to enhance the services and customer experience they provide, as well as decrease price levels. Secondly, by allowing third parties to use one's financial data, companies are able to build and provide better products and personalized solutions tailored to the needs of the customer. Lastly, by enabling third parties to create complementary services, customers are now able to advantageously choose their own combination of financial service providers — a feature of modularity precedingly not possible.

5.3 Adaptive and Responsive Product Development

This dimension is an aggregation of the organizational methods and procedures which leads the industry in terms of innovation and product development. Managing an agile organization with a user-centric philosophy facilitates a good foundation for being adaptive and responsive to market developments, trends and consumer needs. This is naturally easier to implement and adhere to by smaller actors, rather than for traditional, hierarchical organizations such as traditional financial institutions.

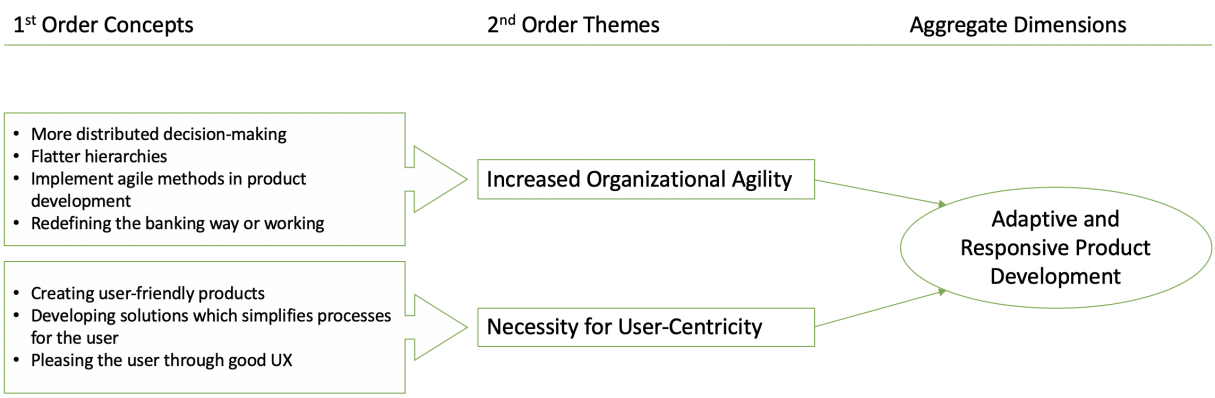

Figure 11. Data Structure Model. Adaptive and Responsive Product Development.

5.3.1 Increased Organizational Agility

FinTechs have entered the financial industry operating young and small organizations. This has provided them the advantages of organizational agility, which on a company culture level entails more distributed decision making and flatter hierarchies (Market Launcher, 51:32). By trusting and empowering the employees, they are able to make quick and important decisions in their daily work. The transparency and trust enable a company to act fast and effectively to market developments and consumer demand — which is at the core of being agile — and is reflected in the company's ability to provide relevant and usable products (Market Launcher, 52:13).

The Digitalization Associate has observed that during the last 5-10 years, traditional banks have also begun to look at FinTechs and agile organizations to initiate an organizational transformation to become more agile in their way of working. For instance, the Retail Bank is becoming increasingly agile and is inviting other stakeholders in their development processes (Digitalization Associate, 31:14). Banks have realized that they must update what the Digitalization Associate defines as a very "*banking way of working*", which involves making big decisions, factoring risks into those decisions and then building long-term projects on that basis (Digitalization Associate, 32:03). They should abandon long-term projects and attempt to swiftly launch minimum viable products (MVPs) (Digitalization Associate, 31:20). The Market Launcher confirms the view that even the big corporations are progressively becoming more agile and make decisions on lower levels in the hierarchies (Market Launcher, 51:48).

One can synthesize that the agile organizations of FinTechs and their ability to adapt to the market have evoked traditional incumbent players to initiate organizational transformations to become more agile and discard the "banking way of working".

5.3.2 Necessity for User-Centricity

As FinTechs often operate younger and more agile organizations, they are not restricted by old legacy systems. Thus, the FinTechs can avoid shortcomings in their development opportunities or technology — obstacles which banks encounter in their operations and development procedures (EVP, 24:55). Additionally, as completely new actors in the market, FinTechs neither need to take development capacity, nor opinions of (non) existing customers into account when developing their products. This provides FinTechs the advantage of taking an outside-in perspective, whereas banks generally are applying an inside-out approach (EVP, 25:26). Characteristically when taking an inside-out perspective, the banks believe that internal capabilities and resources guide decision-making and the interest of the bank itself is of highest importance. In contrast, FinTechs' outside-in approach is more customer-centric, whereas value creation for customers is most significant (EVP, 25:45).

A central component of the competitive advantage of the B2B FinTech is their user centricity, creating product features which "*provides magic*", or delights the user (Market Launcher, 29:08). Another crucial element of user-centricity is the user-friendliness of systems. Creating pleasant user experiences, especially in digital environments which is the reality of the financial industry today, is paramount when aiming to provide a good customer experience. As a part of their strategy, the B2B FinTech have gambled on user-friendliness (Market Launcher, 27:54). The Market Launcher claims that their users love their product to the degree that it makes the users shift attitude from hating expense reporting, to actually appreciating it. The smooth experience is what makes customers become excited about the product itself (Market Launcher, 28:16). In comparison to competitors, including other FinTech actors such as Spendesk, the edge of the B2B FinTech lies in the user-centricity of their product development and user-friendliness of their system (Market Launcher, 28:38).

In conclusion, an outside-in and user-centric approach in the product development process can provide companies with competitive advantage. Further advantages can be gained by creating solutions which are user-friendly and delights the customer experience, making the customer prefer one product to another.

5.4 New Standards of Consumer Demands

The dimension derived as new standards of consumer demands is indicative of a transition in needs from the consumers, in response to the increased digital aspects in day to day life. The dimension has been identified — as the data clearly describes — a transition from previous consumer demands to that of a new digital era where technology is a primary touchpoint, which emphasizes the need for increased transparency and trust from organizations. Customers demand new technology and applications for their daily activities and as the physical touchpoints decrease, the need for transparency and trust from alternative providers is established as a staple in new developments. The data in this study produced two primary outcomes regarding consumer demand setting new standards in the industry; (1) *increased demand for significant digital touchpoints*, and (2) *transparency and trust requirements*.

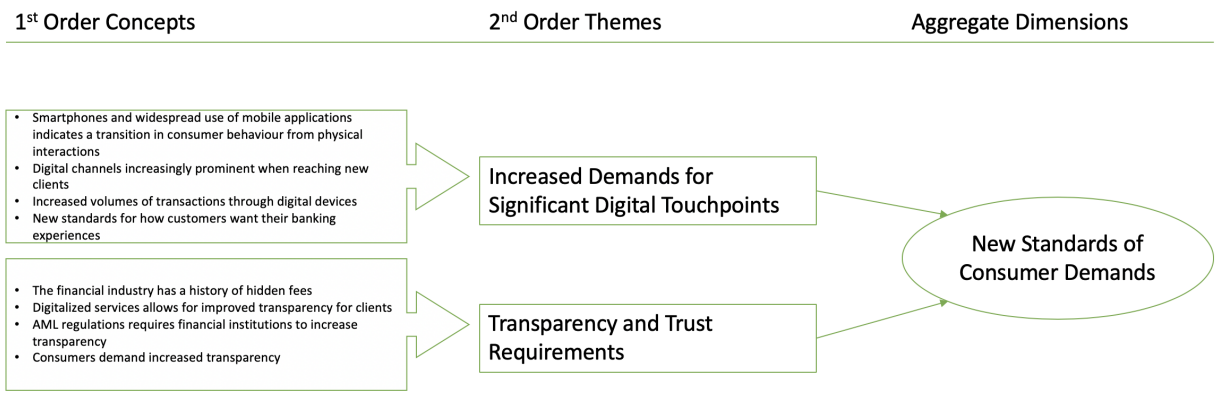

Figure 12. Data Structure Model. New Standards of Consumer Demands.

5.4.1 Increased Demand for Significant Digital Touchpoints

The initial factor to take into consideration based on the data collected, is that of the new digital consumer behavior which, although not new per se, has had a significant impact on the financial industry. The use of digital technologies existing within customers' phones and applications has altered consumer behavior, and thus, demands of new alternatives and solutions for existing services. The Market Launcher states that a factor to be considered is the rise of the digitalization and app society (Market Launcher, 43:08). He explains that not only have these factors allowed their specific FinTech solution to function, but also that the rapid growth of their vertical would in essence not exist if smartphones were not capable of handling their solution (Market Launcher,

43:24). The Research Director argues that the negotiating power of customers increases as they are provided with information regarding alternative solutions, while simultaneously, the amount of digital devices increases the pressure on the banks for additional digitalized solutions (Research Director, 17:42). The substantiality of devices available is argued to have increased the amount and volume of transactions recorded on digital devices and this aspect is further supported by the improvements made in broadband infrastructure (Board Member, 31:38). Especially, the modern mobile phone has revolutionized consumer behavior. The possibility to manage a great extent of one's life using applications in smartphones, facilitates convenient experiences. In accordance with this development of the society, consumers demand efficient apps to handle their financial services in new ways (CEO; 09:51). In the empirical setting of this study, consumers have been observed to manage most their investments using their smartphones (Board Member, 31:51).

The growth of the number of digital devices has increased the amount of services available through digital solutions. The Market Launcher suggests that a vertical which is likely to change in the future due to digitalization, is that of card transactions (Market Launcher, 50:57). In this space, new digital initiatives such as Apple Pay, Google Pay and similar services are decreasing the amount of transactions made through cards with a chip, as they are capable of ensuring the same level of security. The Market Launcher argues that the need for a small plastic card diminishes as the capabilities are transferable to that of digital devices (ibid.). The CEO also mentions the money transfer solution, "Swish", which has been created by the Swedish banking institutions to mitigate the migrations to external providers (CEO, 35:43).

With an increasing amount of verticals within the banking sector becoming digitalized, it is adherently clear that digital channels might be the way forward for banks. The CEO questioned the last time a physical bank was actually visited, and that he himself struggled to remember his last visit (CEO, 29:28). He argues that due to the decreasing needs for physical locations, the financial services are perfectly suitable for digital channels as they do not require physical interactions per se, and emphasizes that electronic devices will be used for these actions to a larger degree. The CEO also discusses the possibility for the Investment Bank to open up new branches in the Nordics and questions whether the best way forward is really to open physical branches, or to instead opt for more digital banking (CEO, 41:24). The transaction from traditional meeting places to digital is stressed as the Board Member states that banks will quite dramatically need to slim down in the end, and possibly in the long run, turn to operating simply as an application (Board Member, 35:00).

The increased digital demand is an aspect that is not only relevant for the financial industry but rather something that entails all aspects of life. The Digitalization Associate explains that no specific part of the banking sector has alone been affected, but rather that the banking sector *"... has been woken up by a new set of standards for how customers want their banking experience to be like"* (Digitalization Associate, 07:21). The Market Launcher described how these digital demands are an outcome of our digital life as we are a part of a generation which has grown up with technology and that we have demands for our digital touchpoints, but also want inspirational and connected workplaces and environments (Market Launcher, 52:38). He also argues that the next generation is evolving to become more demanding in terms of technology than previous generations, and thus, it is important that the industry is shaped and formed in response to this demand. Furthermore, the Digitalization Associate clarifies that they are as a bank aware that customers are increasingly desiring more innovative products and technologies (Digitalization Associate, 16:34). It can be derived that there is a need for banks to accommodate increased demand for digital services. Although the Digitalization Associate stresses that the personal relationships are still a major factor for retail banks, they need to scrutinize the phenomenon of FinTechs as they have made customers consider what a bank could be if it was all made completely digital (ibid.). The CEO argues from their perspective, as they deal with very wealthy customers, that even the wealthiest can be young and that the younger customers definitely desire digital solutions. Therefore, the Investment Bank is compelled to develop digital solutions, albeit not for the mass market (CEO, 09:33).

An increased demand for significant digital touchpoints was denoted as the data collected in this research described an increase in digital awareness, demand and use. The aspects concerning the increased demand all regard the need for more digital interactions, something which have become more apparent in recent years as technological improvements have been made. The arguments indicate a transition in behavior where digital technologies become more at the heart of consumers day-to-day life, especially the smartphone. Thus, the demand for relevant and updated services increases. The transition to digital solutions and services is indicative of a need for participants to consider digital channels to gain prospects and interact with customers. The customers have increased digital demands, and thus, the industry must follow in order to remain relevant.

5.4.2 Transparency and Trust Requirements

In conjunction with increased digital demands, a supplementary demand of increased transparency has arisen as consumer data becomes a high value commodity and regulatory changes demand

insight. The CEO explains how the financial industry has previously been good at hiding fees and transaction costs (CEO, 37:04). He believes that the customers' increased desire for transparency will cause an increase in the amount of regulations. The Market Launcher concurs with the CEO on this topic, as he states that hidden transaction costs and fees across countries has meant that customers want alternative solutions — where they know that their transactions are not leading to large percentage fees (Market Launcher, 31:09). He further states that their business has decided to be completely transparent due to the large hidden percentages fees commonly being taken from the customers. He believes that FinTech providers like themselves are taking the need for transparency to heart, and are deciding to avoid hidden fees and be completely fair and transparent to their customers (Market Launcher, 31:015).

Similar to that of the hidden fees, an increase in trust issues have risen as money laundering scandals have been on the rise. The EVP states that money laundering scandals which have been in the spotlight in the media and among politicians, has caused an increase in anti-money laundering (AML) regulations, and for banks to be increasingly cooperative and transparent with regulatory instances and authorities (EVP, 23:16). The Research Director describes how AML regulations have become more stringent and have created certain expectations on the banks to screen and ensure that there is no illegal activity occurring (Research Director, 37:01). The Research Director provides evidence of several international banks which in recent years have been fined large sums as they have not been able to verify transactions or customer identities in an appropriate manner. He further describes how the increase of AML regulations have caused heightened anxiety amongst banks to ensure that there is no wrong doing in their business (Research Director, 38:00).

The combination of increased mistrust for banks due to hidden fees and fraud cases has pressured the banks to become increasingly transparent, while at the same time opening up for new digital initiatives that might have a different and more transparent approach. However, the Research Director states that the increased pressure of regulations and transparency might not contribute to innovation, as it deters new actors from entering the market, due to them being required to establish trust for their business over time (Research Director, 39:51). On the other hand, the Market Launcher argues that these regulatory changes have benefited certain FinTech providers as they can base their business on being outliers who are completely transparent and show all fees (Market Launcher, 31:09). However, he clarifies that their business has benefited greatly from collaborations with large bank institutions as they have in their infancy not been able to supply the transactional trust in the same manner as larger banks. Thus, using the banks to hold all monetary

risk for the customers ensures the customers that their money is safer than placing it in a smaller unknown FinTech (Market Launcher, 31:09). The Market Launcher further argues that new companies are finding alternative business models as measures to gain trust. He mentions Revolut, who have gained reputation by supplying a demand where they remove international card transaction fees, which traditionally have been a large source of profit for banks. The CEO agrees in this context that the increased transparency which can be observed in all corners of the financial industry today, may benefit the new actors. Additionally, the CEO predicts an increase in digital services as customers desire increased transparency and digitalized services to function as a medium to provide said transparency (CEO, 37:25).

It can be derived that customers are finding it increasingly important to know what is happening with their money and to ensure that they are not losing any value from fees. Due to previous AML scandals and the increased awareness of hidden fees, the industry has been pressured to become increasingly transparent in order to retain the trust of the customers. It can be clearly stated that there is a need for increased transparency, and although new actors in the market may not have achieved sufficient trust due to their infancy, they have the opportunity to address this requirement through digital services. Hence, the increased transparency and trust requirements may indicate the opening for new verticals, as well as new opportunities for banks and FinTechs to consider cooperation.

5.5 Decentralization of Financial Services

Prior to the emergence of FinTech, many actors of the financial industry were universal banks. Meaning that they could offer customers all financial and banking services needed through internal resources and capabilities. However, as the FinTechs have begun to offer customers complementary products using technological advantages, the strategy of producing and providing all services in-house have become increasingly difficult. The data in this study produced four primary outcomes regarding the decentralization of financial services; (1) *silo approach more challenging*, (2) *added value through co-creation,* (3) *partnerships becoming a norm*, and (4) *emergence of digital platforms*.

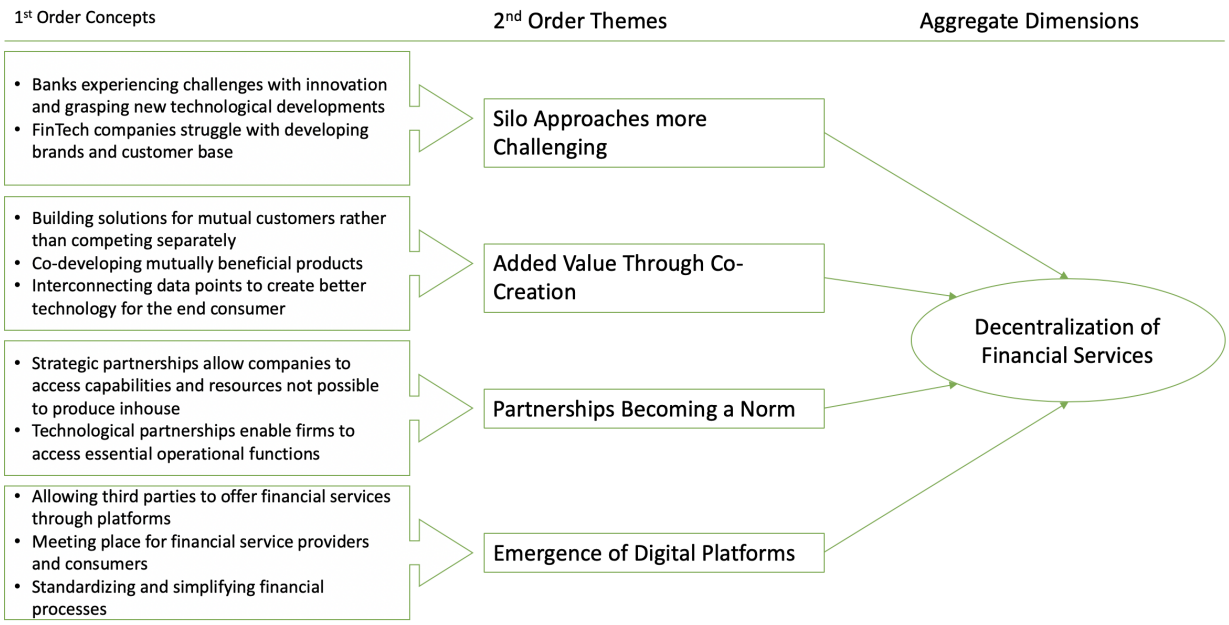

Figure 13. Data Structure Model. Decentralization of Financial Services.

5.5.1 Silo Approaches more Challenging

Working individually has proven to be increasingly difficult for the actors within the financial industry as each participant may lack specific abilities which are crucial for future development. Historically, banks have attempted to do everything in all verticals, and in that manner, they have instead of doing some things very well, they have been providing adequate services across all verticals. The Digitalization Associate expands on this as he states that banks have previously tried to be universal banks and are now required to move towards being a much more focused bank (Digitalization Associate, 34:45). The issue originates from banks trying to be full service, meanwhile their emerging competitors are focusing on just a small portion of the market. The Market Launcher describes it as what they are offering is such a small piece of what banks offer today, and thus, they can offer the service at a better quality (Market Launcher, 06:25). The CEO describes how the financial institutions may struggle to compete against the emerging technological developments, and thus, turn to alternative methods to acquire new technologies or services (CEO, 13:36). In this manner, the Digitalization Associate agrees as he clarifies that the bank may have attempted to develop new products and services in-house 50 years ago. However, this way of working may be transitioning as the banks are speaking in terms of utilizing a hybrid approach to development instead.

As mentioned previously, FinTechs have identified opportunities to obtain merely a small piece of what banks are offering and optimize that specific vertical. As discussed in relation to the issues of

trust for new FinTechs, they struggle to gain customers as they have not, as of yet, reached sufficient brand recognition. The Digitalization Associate argues that customer relationships in banking are still relevant, as the established loyalty exceeds the attraction of the new, less established FinTech brands (Digitalization Associate, 14:22).

It can be identified that the financial industry has come to a point where the respective actors may be creating significant value in one aspect of their service offering, but that there have arisen difficulties in generating substantial value alone. Financial institutions are struggling to compete in the technological aspects as new FinTech companies offer game changing alternatives. Similarly, FinTech companies have significant difficulties in gaining new customers due to their infancy and lack of significant reputation and brand name.

5.5.2 Added Value Through Co-Creation

One can recognize the value of servicing customers mutually rather than competing separately. Initially, it can be simple actions such as the instance described by the Market Launcher, where rather than setting up a banking platform themselves, they elected to use Danske Bank and JP Morgan respectively. The rationale for this was that customers may be more inclined to use their service if they know that a reputable bank is supporting the banking aspect of the service (Market Launcher, 19:51). The Digitalization Associate does not subscribe to the idea that FinTech will turn into the bank killer. Instead he argues that they have been adjusting their way of working where rather than competing, they now are inclined to create and develop products together as the benefits can be reaped mutually rather than exclusively (Digitalization Associate, 09:56). The EVP argues that the increasingly collaborative manner also regards collaboration amongst banks where rather than all the various institutions investing capital individually, they can turn to mutual investments and create services which benefit all the institutions and their customers (EVP, 21:48).

Financial institutions can offer significant value when collectively creating services and products with FinTechs, as they provide knowledge, customer insights and reputation which smaller organizations have yet to obtain. However, the EVP argues that similarly to the benefits yielded by the FinTechs when mutually creating a product or service, the banks can also benefit greatly by co-developing with the FinTechs (EVP, 13:07). He argues that some FinTechs encompass highly interesting technologies and therefore a mutually beneficial development can not only allow the FinTech to progress, but also for the financial institution to leapfrog some of their own developments in certain verticals. The Digitalization Associate discusses how the Retail Bank

realized that an accounting services provider called Fortnox shared many of the same customers and that they in this instance decided to mutually create a platform for their shared customers. In this circumstance, they realized that they could offer their customers an additional service through the external FinTech company, while at the same time benefiting from being able to attract new customers from the shared platform (Digitalization Associate, 12:19). The Market Launcher argues that this type of mutually beneficial project generates value by sharing data points to create better products (Market Launcher, 58:53).

Addressing the issues of working in an enclosed silo operation allows for the possibility of providing better services and products to the customers, while at the same time being able to improve on the company's core services. Not only can companies gain more customers from collaborative actions, but they can also improve on developments and innovative projects by combining the mindset of a different set of contributors. Hence, there are advantages to be gained from co-creating mutually beneficial products to reach the ultimate objectives of economic outcomes and value creation.

5.5.3 Partnerships Becoming a Norm

A relatively closely connected aspect of the value co-creation is that of the partnerships, which are increasingly becoming more apparent in the Nordic financial industry. Banks are increasingly investing more in the technology sector, and in many instances, this is not through in-house developments, but rather in the acquisition or investments made in FinTechs. Applying this strategy, the banks can gain significantly from knowledge sharing and from being able to focus on their core capabilities, while not decreasing their presence in industry developments. The CEO describes how banks and financial service providers are realizing that new actors are creating services which are changing the industry (CEO, 13:36). For instance, the Digitalization Associate identifies how the emergence of blockchain caused a stir as banks did not know what was going on or how to deal with it (Digitalization Associate, 26:59). The EVP emphasizes how they now regard FinTechs with these sophisticated technical capabilities such as blockchain as very interesting (EVP, 08:38). He further argues that these FinTechs will most probably not be seen as competitors but rather as technology partners (EVP, 09:02). However, in the instances where collaborative efforts are not established, financial institutions are better positioned to acquire new ventures and incorporate them in their service offering instead of competing against them. The CEO argues that certain verticals may be changing so dramatically that the role of banks becomes increasingly obsolete and more or less disappear from this area. This comes down to FinTechs'

ability to optimize and develop these specific verticals, but he stresses that we can not exclude the factor that it still is the banks who have the financial resources and capabilities to purchase the competitors in the long run (CEO, 35:57).

The EVP argues that at the Universal Bank, they do not commit to a partnership with a FinTech if they have not also invested in said FinTech. In this way, the bank both contributes to value creation through their brand name and by indicating that they are fully invested in the partnership (EVP, 16:48). The CEO argues much like the EVP, as the Investment Bank has a good brand name and the resources to invest in FinTech companies which do not have the funds to establish a brand name, they can access new technology through acquisitions (CEO, 14:58). The Market Launcher clarifies from the FinTech perspective that he believes that banks are more than happy to partner with them because they can innovate and develop together, and thus, adapt their offering to that of the FinTech's (Market Launcher, 18:08).

Moving towards finding collaborative solutions, partnerships have become the norm of financial institutions in this period as this allows them to decrease investments in internal development. It can be seen that the financial institutions have to a larger degree adopted partnership strategies where they clearly define what type of companies and values they are looking to partner with. Due to the vast amount of FinTech companies on the rise, it is important to be able to define what type of company suits for a partnership. The Digitalization Associate clarifies that they look for solutions and products which can help their customers, and thus, they are inclined to create a joined model for that partnership (Digitalization Associate, 09:56). Additionally, he clarifies that they are putting their brand and reputation on the line as well as the monetary cost, and thus, it is crucial to emphasize the importance of shared cultural values in order for the partnership to be sustainable (ibid.). In these circumstances, the partnership will yield increased benefits as both the bank and the applicable firm can better understand each other, and thus, have reasonable expectations from the start. The EVP also subscribes to the idea that there is a need for a strategy or criteria in partnerships, as they receive a large number of requests for collaborations and partnerships, and without guidelines, the research will become quite cumbersome in the long run (EVP, 19:41). The EVP provides a successful example where a partnership yielded significant amounts of new ideas and services, which can be developed and incorporated in the bank quicker than if they had done it in-house (ibid.).

The due diligence required for partnerships is something that has been increasingly important for the banks of recent years. Not only does the decision come down to the monetary costs of investing, but also to the costs of reputation, brand name, in-house development and loss of market share if they elect not to partner up. The FinTechs may mainly gain positive effects from partnerships, as they are in need of funding but also of the experience and name of the partner. However, it is observed that in recent years, the banks have identified new opportunities and possibilities to acquire or gain new services from investing and mutually developing services and products for their customers with the FinTechs. The EVP believes that all banks have in this sense guidelines and strategies for partnerships and FinTechs as it has become prominent and the norm that partnerships are a new pipeline to innovate and offer services to their customers (EVP, 20:32).

5.5.4 Emergence of Digital Platforms

What can be identified from the increased collaborative efforts is that in conjunction with these, new platforms are on the rise to facilitate the interactions. The Research Director of the Open Banking Platform discusses the future outlook where he believes that there will develop three separate types of archetypes in the banking industry (Research Director, 54:48). In the first archetype, he discusses how banks in some circumstances will increase collaboration with large tech companies such as Citibank and Google, Morgan Stanley and Apple, or Goldman Sachs and Amazon, and that this trend will happen in the European markets as well. The second archetype regards the bank taking steps back in order to become more of a banking utility (ibid.). This second archetype is where the banks emphasize the open banking platforms, and will to a larger degree allow third party actors to a greater extent engage with the banks' large pool of customers and offer them services through the platform. Lastly, the Research Director discussed that some banks will dive deep into specific niche verticals in order to secure that vertical and remain the market leader. However, the Research Director differentiates banks and states that large incumbent banks will not be doing one or the other, but rather be all the archetypes simultaneously as they always have done (Research Director, 56:43). As the archetypes develop, there is going to be increased competition which as a result for the customers is going to mean lower switching costs, high service quality and lower cost of service. The various archetypes and the amount of services offered digitally entails that a transition in how customers consume banking services has occurred.

Companies are creating supplementary products and platforms in order to facilitate needs from the customers, while simultaneously creating new value and attracting additional customers. The Board Member describes how their organization has created an additional platform which targets newly

founded start-ups that have yet to earn significant revenues, and the platform mediates the process of finding suitable investors (Board Member, 41:31). Their platform is offering a service to standardize and simplify investment processes, and thus, allow new firms to scale at a faster pace than previously. Entrepreneurs are typically technically excellent in product development, but lack the ability to present their company and write professional annual reports, balance sheets and P&L (profit and loss) statements (Board Member, 16:09). Platforms are in the digital age becoming the quickest way to gain an influx of customers and for customers to find one another and interact. The Research Director describes their company history and explains how they transitioned from a PFM application to the open banking platform it is today (Research Director, 04:30). Now they are able to connect over 2500 banks across Europe, which is equivalent to 250 million customer accounts.

The digital platform not only enables services to be offered in a practical manner, but it functions as an enabler to gain new customers and interact with new actors. The emergence and importance of digital platforms is significant as the implicit low switching costs reduced the barriers to enter the industry, and intensifies competition across borders. As the customers are changing how they consume banking services, so do the banks, and incumbents need to change and adapt in order to stay relevant. The question is if one archetype will prove better than the other in the long run, however, it is clear that the emergence of digital platforms has altered the way banking is done.

6. Discussion

The findings provided multiple factors of how FinTech has had an impact on the financial industry and its incumbents. The two initial sections will begin by summarizing the findings, followed by elaborating on how the respective dimensions and themes are affiliated in relation to the research question and objectives. The subsequent subsections will dive into the theoretical contribution of this study, where the findings of this study are combined with existing theory. Lastly, the researchers suggest what the findings and conclusions entail for the participants of the financial ecosystem with previous research in mind. The following topics of discussion are covered; (1) *summary of findings,* (2) *change process of the Nordic financial industry developing to an ecosystem,* (3) *theoretical contribution,* and (4) *practical implications.*

6.1 Summary of Findings

FinTechs have managed to implement digital technologies in the financial context to create new value for the end customers. The modernization and automation of manual processes has been addressed by FinTechs through the implementation of technologies such as machine learning and AI. These technologies generate new value by replacing outdated processes and providing a more efficient customer experience. Palmié et al. (2020) describe how new technologies such as AI now can assist in understanding and interpreting tasks as well as take decisive action to solve the task. Furthermore, the concept of open banking has allowed FinTechs to enter the financial market and initiate collaborations with incumbents. Although open banking enables more collaboration, it also suggests fiercer competition in the pan-European financial industry. Finally, open banking enables new products from third parties which creates supplementary value for the consumers. FinTechs have also leveraged niche strategies to exploit lower opportunity costs — proposing a decrease in prices, and thus, reduced switching costs. The optimization of verticals using digital capabilities indicates superior solutions and customer experience, which ultimately have contributed to the financial industry transforming from a horizontal market to a market containing multiple verticals. The democratization of financial consumer data indicates stronger bargaining power of buyers in the market. Firstly, this incentivizes actors who wish to retain and attract customers to decrease prices and enhance the quality of the customer experience. Secondly, third parties' access to customer data encourages innovation and personalization of financial services. With the digitalization, new actors were enabled to develop and provide financial services. This demonstrates a simplification of the activities in the financial ecosystem, implying a low complexity (Davidson et al., 2015). In turn, this has led to lower barriers to entry, more actors in the market, and a commoditization of the banking experience (ibid.).

The findings suggest that the organizational approaches and principles towards market developments are essential among the actors of the financial industry of today. In the processes of product development, organizational agility and user-centricity were indicated to be key success factors in order to be adaptive and responsive to the dynamic market trends and consumer needs. The agile FinTechs have influenced the hierarchical incumbent players to become more flexible and abandon the "banking way of working". Moreover, FinTech's ability to apply an outside-in and user-centric approach potentially provides them with a competitive advantage against the incumbents and actors employing opposite methods. Providing user-friendly solutions which delights the customer is a tactic which in certain cases has proved to generate further advantage.

One consequence derived from the emergence of FinTech is the elevated consumer demand. FinTech firms have enhanced the quality of products and services, which has raised the standards of the customer expectation — pressuring traditional financial institutions to live up to these new standards. As technological improvements and the use of digital devices are increasing on a constant basis, customers expect the financial industry to adapt to this trend. In addition, as FinTechs are very capable of supplying digital solutions, consumer needs are changing and incumbents are encouraged to follow in order to remain relevant. Furthermore, the financial industry has a questionable and nontransparent history of scandals and hidden fees. Çokçetin (2017) argues that the digitalization and the history will as an effect make customers want to ensure that their money is now safer than ever. FinTechs have identified this flaw and attempted to ensure trust to customers as their digital solutions often enable full transparency. This has made customers demand more clarity from incumbent banks — providing opportunities to improve either on their own, or in cooperation with fellow ecosystem participants.

In the former financial industry, many actors were holistic in their service offering, targeting all segments of the market. With internal resources and capabilities, these banks could meet the needs of consumers with low bargaining power. However, the data of this research suggests that with the rise of FinTech, the lack of focus has become increasingly evident as a weakness among the incumbents. Dapp (2017) states that despite already having adjusted as a fallout from the 2008 financial crisis, stringent regulations, and changed consumer behavior, banks now need to change and adapt in relation to the competition and demand. At the same time, FinTechs often struggle to grow due to insufficient funds or an unestablished brand, or both. The players began to acknowledge these gaps and realized that they could complement each other to co-evolve. Thus, FinTechs and incumbents, initiated collaborations to co-create better services and products for mutual benefits. As the advantages and needs of collaborating have become clearer, the industry has matured to a common practice of established partnerships. In addition, traditional financial institutions have begun to formalize partnership strategies and processes for due diligence. The decentralization of financial services has further progressed with the evolution of digital platforms. In this context, digital platforms have contributed to the decrease of switching costs, lowering the barriers to enter the ecosystem. Furthermore, they facilitate the interactions between other ecosystem participants, supporting the co-creational infrastructure of the ecosystem.

6.2 Change process of the Nordic Financial Industry Developing to an Ecosystem

Figure 9 indicates how FinTechs have influenced the Nordic financial industry to evolve to the ecosystem it is today. This section expands on the interrelationships between the themes and dimension of the model. FinTechs have applied various technologies to develop and create products. Irrespective of whether they are using machine learning, AI, financial data, open banking, or any other technology as instruments to generate new value, their agile and user-centric approaches have enabled them to provide services which are leading market trends, satisfying and delighting customer needs. The combination of adaptive and responsive product development, and digital technologies has allowed FinTechs to specialize their capabilities to optimize particular verticals within the wide spectrum of the financial sphere. Initially, FinTechs optimized simpler B2C verticals, progressing to optimize more complicated markets such as mortgage, insurance, and later even the corporate markets. The new superior solutions provided by FinTechs in these verticals have updated consumer needs and expectations by generating supplementary value. Consumer demand has also been highly affected by the technological trends in society, where there is a dramatically increased use of digital devices in consumers' daily life. In particular, the smartphone has created a habit and expectation by consumers of being able to manage most aspects of your life in your phone. Additionally, FinTechs' ability to provide transparent services has contributed to customer's demand and requirements of financial service providers.

The data suggests that the aggregation of the increased digital demand and transparency requirements have set new standards of consumer demand in the entire industry. Actors are incited to meet these standards by providing better customer experience and more value. This is when the decentralization of financial services begins. As both incumbents and FinTechs cope with separate challenges while striving to provide the full scope of value that customers now demand, collaborative initiatives were launched to co-create the value delivered to end-consumers for shared benefits. As the collaborations mature and advantages of respective parties become increasingly obvious, the traditional banks have developed and defined guidelines and strategies for FinTech partnerships. Further decentralization and promotion of co-creation is facilitated by the emergence of digital platforms, which support the interactions among different types of actors in the business environment. The financial industry has now evolved to a harmonized ecosystem where FinTech disruptors and incumbents co-evolve to enjoy mutual benefits.

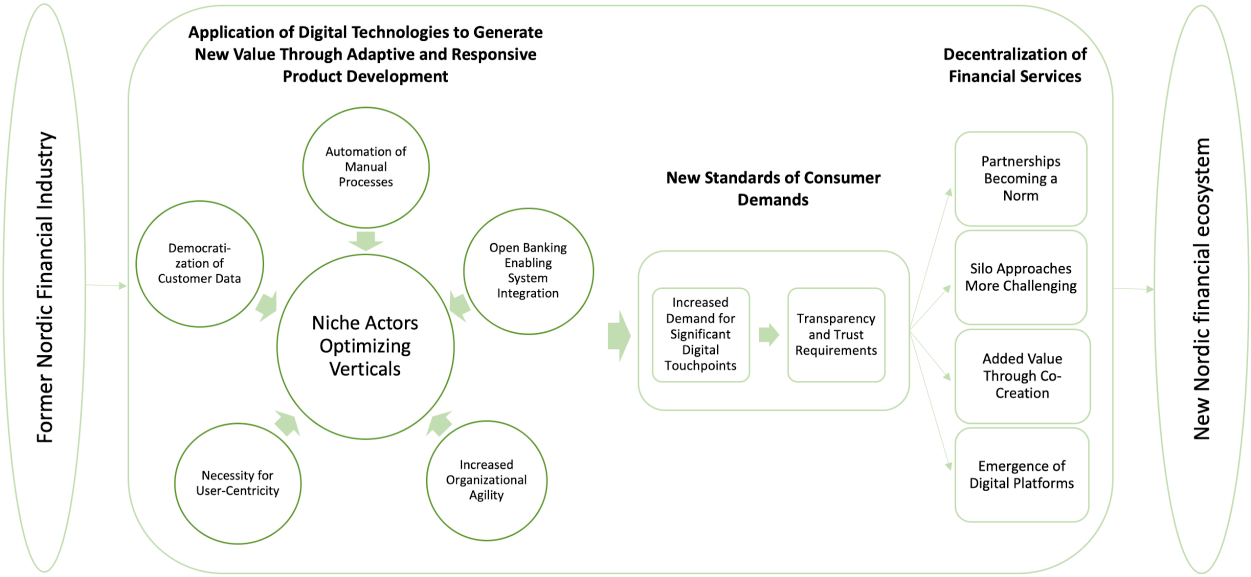

Figure 9. Change process of the Nordic financial industry developing to an ecosystem.

6.3 Theoretical contribution

The theoretical contributions of the research underpin the knowledge which is brought forth from the research, and proposes how the findings achieve a greater or new understanding of the research topic. When it comes to the research question at hand; *"How has FinTech affected the financial industry in the Nordics?"*, relevant preceding literature has applied a general view on FinTech and attempted to identify key factors which affected the financial industry. This paper regards the topic through an ecosystem perspective and regards how the organization and structure of firms have changed from that of an industry to that of an ecosystem, consisting of many interconnected verticals. Contrary to existing literature, this paper visualizes the findings and illustrates the changes from a banking industry to that of a financial ecosystem through the change process model in Figure 9. In addition, the research suggests what phase the financial industry has come to at this point in time by utilizing the BELC in the context of findings from the Nordic financial industry. Furthermore, the change process model is placed in relation with the BELC, and thus, allows for an indication as to when the factors of change came into play.

6.3.1 Nordic Financial Ecosystem Life Cycle

The following section is intended to illustrate the life cycle of the Nordic financial ecosystem thus far. The relevance of reviewing the life cycle is derived from the need to regard how new developments have affected a traditional industry, and also to regard whether there are more changes to come in the future. The contribution of reviewing the life cycle of the financial ecosystem is that it is possible to identify how the industry has developed, and in which stage it

currently resides. Additionally, the contribution of the life cycle in Figure 14 is not to generalize, but rather to function as a contribution to how the specific case of the Nordic financial ecosystem has developed and is set to continue to develop in the coming years. The basis for the Nordic Financial Ecosystem Life Cycle takes the offset from the conceptualization provided by Moore (1993) as he developed the BELC. However, as the theory has been further developed and improved upon by Thomas & Autio (2014) as well as Rong & Shi (2014), it is of greater value to apply a more updated life cycle in this circumstance. While Thomas & Autio (2014) present a very much identical life cycle to that of Moore, Rong & Shi (2014) claim to have updated the BELC to cope with emerging dynamics in the business environment, and thus, their lifecycle may be more applicable to this case.

While previous literature has to an extent contemplated and researched the evolution of the financial ecosystem, there has been little consensus to which factors have been the core catalysts in the phases of the ecosystem's development. Palmié et al. (2020) provide a structure of investigating the evolution of the financial technology ecosystem, and while the study provides valuable insights in the underlying factors of change in the ecosystem, it remains focused on the technological factors. They describe the evolution of the FinTech disruptive innovation ecosystem through three stages of technological developments. While the technological developments may be a root cause to the emergence of the financial ecosystem, this paper argues that it can not conclusively be stated to be the sole contributing factor to the development. Additionally, Palmié et al. (2020) describe the disruptive nature of technology to the financial ecosystem, while not defining the origin of the current financial ecosystem or elaborating on external factors which may contribute to the adoption of new technologies. This paper argues how FinTech has provoked a change in organizing and structuring within the financial industry. The research expands on the ideas of Palmié et al. (2020) as to how technology has in various phases affected and contributed to the development of the financial ecosystem. However, as this paper utilizes Rong & Shi's (2014) BELC in the context of the financial ecosystem, the research contributes by aggregating existing knowledge, especially incorporating underlying reasons provided by Palmié et al. (2020).

The additional contribution to the life cycle is the combination with the change process model proposed by this paper. Thus, identifying when the change process of the Nordic financial industry started, and thereby providing additional arguments in conjunction to the reasons supported by literature. Figure 14 visualizes an aggregation of the phases in the BELC model and the proposed allocations for the stages of the change process model.

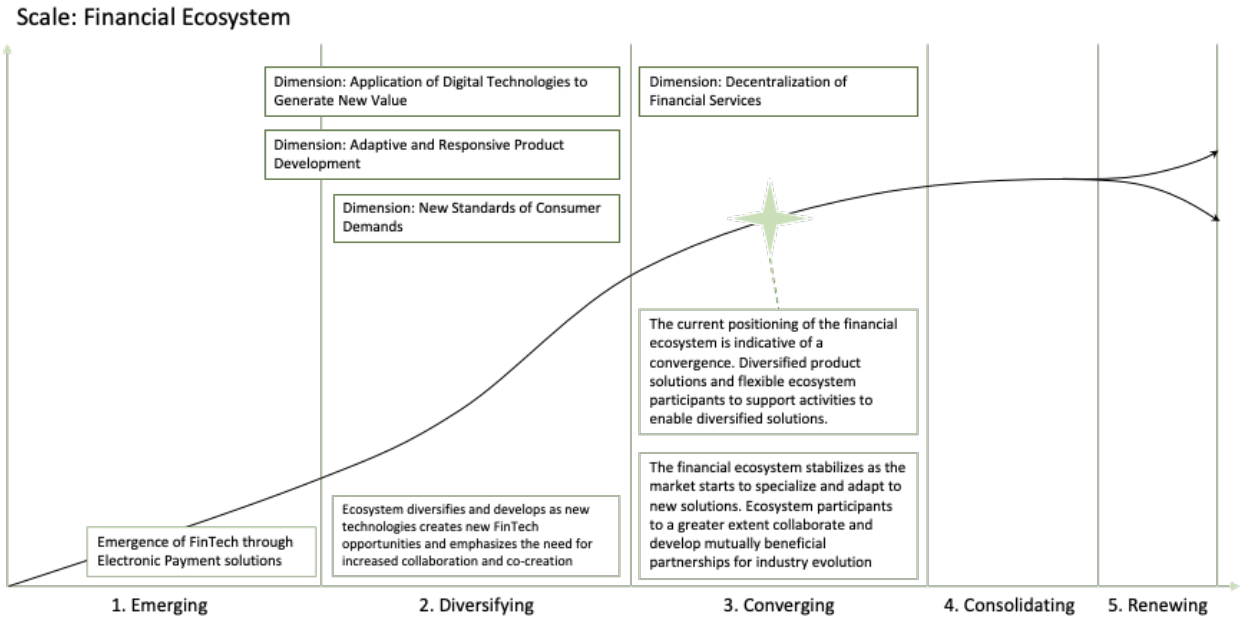

Figure 14. Nordic Financial Ecosystem Life Cycle.

6.3.1.1 Life cycle phase 1: Emerging

Moore (1993) defines this initial phase as birth, where the innovators focus on understanding and defining the value of the new innovation. Similarly, to Moore's definition of the initial phase, Rong & Shi (2014) emphasize the importance of understanding the value and delivering the solution simplistically with a straightforward supply chain. Banking has previously functioned as a standalone industry where banking services have been offered collectively. As stated by the Digitalization Associate, subsequent to the financial crisis, many struggling banks elected to attempt to target all market segments rather than addressing a specific group (Digitalization Associate, 34:45). The lack of focus enabled new FinTechs to emerge and optimize verticals at the cost of financial institutions. Additionally, Palmié et al. (2020) discussed FinTech in terms of facilitating technologies and established that FinTech emerged in three distinct waves. The authors therefore build upon the waves model established by Palmié et al. (2020) and allocate the waves in the BELC.

This paper suggests that the initial emergence of electronic payments was indicative of the emergence of FinTech solutions. The CEO and the EVP respectively argued that as FinTech emerged, they initially competed for market share with incumbents in the B2C market (CEO, 07:03; EVP, 04:46). Palmié et al. (2020) argues that these initial B2C FinTech initiatives were that of crowdfunding, payments and banking. In the emerging phase of the Nordic financial ecosystem life cycle, FinTech and the new technologies allowed for alternative methods of payment in daily

purchases, facilitated through online banking and mobile devices (Palmié et al., 2020). Gomber et al (2017) classify the segment as digital payments and argue that the initial electronic payment solutions of online banking were established as digital account-based transfers. The rise of electronic payments developed during the last quarter of the twentieth century, and was distinguished through an influx of transactions not only between customers but also between a variety of countries (Çokçetin, 2017; Lee & Shin, 2018). Çokçetin (2017) described how this period was significant for substantial growth, large amounts of funds being transferred between countries at any given time and that banking and investment solutions were becoming increasingly complex. In this phase, consumers have been offered more payment methods than previously, and the introduction of digital currency has changed the way we regard payments (Palmié et al., 2020; Gomber et al., 2017). The emergence of FinTech and new payment methods would not have been possible if not the digital devices available were capable of facilitating the innovations. The Market Launcher clarifies that the digital demands and capabilities are an outcome of a generation raised with technology, and which to a greater degree demands digital touchpoints (Market Launcher, 52:37). He argues that in the business function of digital payments, new solutions such as Apple Pay and Google Pay are to an extent even diminishing the need for cards.

This initial phase of the Nordic financial ecosystem life cycle stresses the importance to clearly comprehend the value, applicability and implementation of new technologies in the financial context. In conjunction to Figure 14, the dimensions of the change process model are applicable in the life cycle as to identify where and when the changes began to establish. Although none of the aggregated dimensions of the data structure are a direct reason for the emerging phase of the financial ecosystem, it could be argued that both the dimension application of digital technologies to generate new value and the dimension adaptive and responsive product development commence in the emerging phase. Although the 2nd order themes of the former dimension regard somewhat more advanced technologies than might have been the initial FinTech enablers, the necessity to apply new technologies in an appropriate and customer-centric manner was established early on — in the emerging phase. FinTechs have exploited these technologies and market opportunities by applying agile and user-centric approaches in their product development. The emergence of the initial electronic payments was indicative of the market's need to adapt and react to new digitalization trends to provide user-centric and demanded services. Although these two dimensions come to blossom in the next phase of the life cycle, this study indicates that they were initially detected in the emerging phase of the ecosystem, where iterative processes of innovation and development is needed (Moore, 1993).

This paper suggests that the transition from the emerging phase to that of the diversifying phase was an outcome of the financial crisis in 2008. A result of the financial crisis was the introduction of extensive regulatory changes which conclusively permitted online banking to serve as a larger enabler to the industry. The fallout of the regulations was indicative of an increase of digitalization efforts within the industry, in order to address the distinct opportunities and apparent market gaps. Additionally, as the consumer trends were changing, so did the consumer demand for appropriate solutions and services with modern technologies and devices.

6.3.1.2 Life cycle phase 2: Diversifying

The second phase of the BELC proposed by Rong & Shi (2014) is the diversifying phase. In this phase, solution diversity is highly encouraged in order to meet an uncertain market. Additionally, the partner network is highly flexible and contains a high interoperability (ibid.). Therefore, due to the mentioned circumstances, new technologies and business functions arise to diversify and meet market demands. Rong & Shi (2014) argue that in the second phase, services and solutions become increasingly diversified and simultaneously increased collaboration occurs for co-evolution and development. It can be argued that the initial FinTech companies were part of the first phase, and thus, creating the infrastructure required for the future development and diversification of the ecosystem.

Palmié et al. (2020) identify that in the second and third waves of technological developments, an influx of new technologies allow for new business functions and FinTechs to be developed. The second wave entails blockchain, the digitally shared database which most famously supports cryptocurrencies such as Bitcoin (Palmié et al., 2020). This enables blockchain and cryptocurrency to be categorized within the phase of diversifying, as it is merely a diversification of common currency. The Digitalization Associate argues how blockchain in the early stages unsettled the banks as they were unsure as to how to engage with them (Digitalization Associate, 26:58).. However, as the technology and respective FinTechs developed, the Universal Bank for instance, instead started to regard them as very interesting as they can provide value through technological partnerships (EVP, (08:55).

The third wave presented by Palmié et al. (2020) is also considered to be a part of the diversifying phase of the BELC. The concepts of AI in the financial sector is presented as the third wave and entails the computerized artificial capabilities of interpreting and understanding tasks in order to

serve customers (Palmié et al., 2020). This wave is closely related to the theme automation of manual processes, whereas AI is one of the drivers. The Digitalization Associate referred to the abilities of AI as self-driving finance, which is heading the current trends from transactional banking towards more automated realization of personal finance goals through banking applications (Digitalization Associate, 46:05). The EVP further emphasized the value of new technologies such as machine learning as they are creating better grounds to provide personalized financial advice (EVP, 38:03). In addition to the new technologies applied during the diversifying phase, new verticals within the financial ecosystem are also being created and optimized in a manner which has previously not been done. FinTech as a definition might have initially entailed payments, financing alternatives and B2C target groups, however, services previously viewed as complementary are now being identified as FinTech as well. For instance, The B2B FinTech addressed and optimized the specific market of company spending, as well as contributing to the establishment of that new vertical in the market (Market Launcher, 47:46).

Corresponding to the definition of the diversifying phase, this phase entails comprehending the true capabilities of machine learning and AI in the financial sector. It can be seen that the technology is still in its infancy and a further specialization of these new technologies is expected. AI and new technologies will be increasingly integrated to a greater extent as the Nordic financial ecosystem matures and moves to later phases in the Nordic financial ecosystem life cycle. In relation to the increased specialization in the industry, incumbents are to a larger degree advised to consider their capabilities of incorporating and adapting new technological developments in their offering.

The diversifying phase is where the change process of the Nordic financial industry truly comes into play to a larger extent. The transition from an emerging ecosystem to that of a more specialized ecosystem, had its effect through a number of the dimensions of the change process model (Figure 9). This study argues that the financial crisis in 2008 sparked the transition from the emerging phase to the diversifying phase and facilitated the dimension regarding the application of digital technologies to generate new value to fully flourish. New technologies, such as AI, enabled the automatization of manual processes to become a core service in and of itself. The regulatory impacts of the financial crisis enabled an increase in open banking platforms as the utilization of API's came into place. The open banking trend was boosted by the democratization of financial data, allowing new and personalized FinTech products to be created. These developments are suggestive of many new opportunities in specific verticals to be optimized by new actors. This

aligns with the diversifying phase proposed by Rong and Shi (2014), where new technologies and solutions are developed to satisfy the market demand. On top of this, the significance of adaptive and responsive product developments became more apparent as new technologies required a more flexible and quick reaction from both FinTech and incumbents in order to meet consumer demand and maintain competitiveness. New demands and niche actors created an increasing amount of user-centric and optimized solutions, which in extension encouraged the incumbents to attempt to regard traditional services from a more modern and digital perspective.

New standards of consumer demand in the Nordic financial ecosystem is a result of diversified product offerings and FinTech's abilities to generate new value by applying agile and user-centric approaches. The influx of niche actors providing improvements on specific verticals served as a catalyst in the industry, as the expectations of what a financial service can be, appear increasingly demanding to adhere to. Simultaneously, as the market became more diverse and dynamic, the new technologies and democratization of financial data entailed new requirements from both regulatory instances as well as consumers which relates to trust and transparency. The modernized consumer demands not only in this essence entail that the institutions were suggested to become more agile and dynamic to exploit new innovations, but also guarantee sufficient security to the consumers and regulators that they are not cutting any corners.

6.3.1.3 Life cycle phase 3: Converging

What can be derived from the second phase of the Nordic financial ecosystem life cycle, is that new forms of organizations and diverse solutions have entered the market. The third phase entails converging, where the market to a greater extent turns to specializing and adapting the new solutions (Rong & Shi, 2014). This is the phase which the financial ecosystem is considered to be in as of now. The market has realized new capabilities such as machine learning, AI and blockchain, and are attempting to specialize and integrate these solutions in the partner networks. The integration of the new technologies across organizations will serve as the catalyst in the further convergence of the financial ecosystem. The Digitalization Associate believes that this transition will become apparent in the coming years and that we will have a different set of banking applications based on automation (Digitalization Associate, 46:32).

The converging phase is indicative of the transition to a more cooperative way of working. Rather than the siloed environment of the prior financial industry, banking and the interconnected business functions have now converged into a financial ecosystem. Previous literature has assisted

in identifying changes and the development within finance. However, the application of BELC and the ecosystem's progression in this context has not previously been done. The implicit value of identifying the life cycle phase is the observable changes in the industry and financial ecosystem over time, in addition to being able to comprehend the changes which may occur or rather need to occur in the future.

The convergence phase is considered to be where the ecosystem currently is situated, and includes the final dimension in the change process for the Nordic financial industry. The final dimension regards the decentralization of financial services, which entails the vertical disintegration of incumbent bank monopolies and increased collaboration amongst stakeholders. The new technologies and increased capabilities of the specialized niche actors not only provides opportunities for certain players, but also implies difficulties for incumbents to compete, as they are not able stay competitive in all verticals with an independent approach. The decentralization of financial services concerns the transition from a silo approach, as competing on all frontiers simultaneously becomes increasingly tedious. Both the ecosystem perspective and the data collected in this study suggest that the solution in many instances is increased value generation through co-creation, as incumbents find it more efficient to collaborate and supply mutually beneficial innovations. Thereby, the market establishes tendencies of a new norm where the establishment of partnerships or collaborations is preferred, rather than competing on all fronts. An additional aspect of the convergence is the vertical disintegration where rather than finding all financial services in one holistic provider, digital platforms now serve a role as an intermediary, connecting stakeholders of the ecosystem with one another. These platforms are commonly observed as industry platforms in the context of the Nordic financial ecosystem, where the platform merges external capabilities and data from various actors to create a meeting place for the multi-sided market (de Reuver et al., 2018). For instance, the equity Crowdfunding Platform has developed a core system where investors and companies can meet. The imperative, complementary third-party capabilities and resources provided by these parties, in terms of information, innovation, and capital, completes the value-creation of the platform to facilitate the transactions and interactions of the investment market (Tiwana et al., 2010; Ghazawneh & Henfridsson, 2015).

6.3.2 Affirmation of the Financial Ecosystem Evolution in the Nordics

While previous literature states factors for why change and development has occurred in the industry, this research emphasizes the contributing factors enabling the industry to transform to an ecosystem. Not only does the paper indicate as to how the emerging technologies and business

models have affected the incumbent firms, but the research also underlines the fact that the integration of the FinTech enables the industry to now be regarded as an ecosystem in itself. The paper suggests how the financial sector has transformed from an industry structure with traditional supply chains, to that of a network-based ecosystem. The transformation from an industry to an ecosystem, visualized in Figure 9, could be argued to merely be a modernization process sparked by digitalization. Although digitalization is acknowledged to be one of the underlying factors, the authors of this research suggest that FinTech has influenced the Nordic financial industry to a greater extent, and will apply existing research to discuss and build an argument for why it has evolved to an ecosystem specifically as a result of FinTech emergence.

Moore (1993, p. 76) defined one of the main characteristics of the development of an ecosystem as the progression "*from a random collection of elements to a more structured community*". In coherence with Moore's hypothesis, this study has established that suppliers, producers and competitors of the financial industry now organize to a greater extent, in order to allow interaction and mutual innovation to satisfy customer demand. These close relationships and co-evolutionary tendencies between different stakeholders have not been identified in the financial context prior to the entry of FinTech. The new networked structure of the financial industry is facilitated by the open banking infrastructure and digital platforms which promote vertical disintegration and complementarity of services. Vertical disintegration and complementarity characterize a business ecosystem where participants combine capabilities and resources to collectively co-create value (Thomas & Autio, 2015; Fuller et al., 2019). In fact, these features within the financial ecosystem describe the modularity discussed by Jacobides et al. (2018). Jacobides et al. (2018) argue that modular architecture is a structural perspective of ecosystems which accurately symbolizes the distinct stages in a production or delivery process, and in this case, symbolizes the vertical disintegration of financial services. One key characteristic of modularity which was not achievable until the financial ecosystem evolved to its current form, is that customers now have ownership of their own personal data. This provides customers with the possibility to grant third parties access to their data and consequently receive personalized services and solutions. The customer's ability to pick and choose solutions from independent complementors or financial service providers is a convenience not possible in the prior industry structures with market-based transactions and supplier-mediated relations (Jacobides et al., 2018).

Further evidence which suggests the shift to an ecosystem, are the characteristics of the Nordic financial ecosystem which correspond to the characteristics of a wolf pack ecosystem. The tight

orchestration of a wolf pack is observed in the financial ecosystem in primarily two ways. Firstly, both the Market Launcher and the CEO witnessed that the large banks have significant influence over other participants as they are dependent on the banks to provide essential components of their service delivery. Secondly, the financial ecosystem is tightly governed by regulators, who to a remarkable extent control financial transactions and activity through laws and policies. Furthermore, the low complexity is identified in the low barriers to entry, caused by vertical disintegration, democratization of personal financial data and implementation of open banking. Additionally, the wolf pack attributes of the financial ecosystem can be detected in the dramatic increase of cross-organizational collaborations to co-create value. Finally, the sophisticated experiences and value generated in a wolf pack can indeed be compared to the modern and personalized services and solutions that the Nordic financial ecosystem provides today (Davidson et al., 2015).

Valkokari (2015) argues that the system boundaries of an ecosystem must be defined to be able to distinguish and investigate a specific ecosystem. The boundaries of the financial ecosystem in this research have been determined by the geographical scope of the research question. In other words, delimiting the ecosystem to the region of the Nordics. Lee and Shin (2018) argue that in order to understand the dynamics in competitive and collaborative FinTech innovation, it is of essence to regard its ecosystem. They state that the FinTech ecosystem is derived from five essential elements; (1) *FinTech startups,* (2) *Technology developers,* (3) *Government,* (4) *Financial customers,* and (5) *Traditional financial institutions* (Lee & Shin, 2018). In relation to the FinTech ecosystem identified, this paper suggests that the Nordic financial ecosystem entails all these essential elements of a FinTech ecosystem (or identical), as well as three additional elements supported from the findings. This paper therefore expands on the Fintech ecosystem (Figure 3) presented by Lee and Shin (2018) and proposes the Nordic financial ecosystem. The findings suggest that in addition to the aforementioned elements of the FinTech ecosystem, the Nordic financial ecosystem entails platforms, neo banks, and complementary service providers. Thus, it is suggested that the Nordic financial industry entails all elements of a FinTech ecosystem, but due to the additional elements, is regarded as a separate ecosystem. Hence, the expanded proposal of the Nordic financial ecosystem.

6.3.3 Urgency for Incumbent Agility in Financial Ecosystems

Several papers are claiming that a business ecosystem is emergent, dynamic, collaborative in its nature (Iansiti & Levien, 2004b; Adner, 2006; Li et al., 2012; Rong & Shi, 2014; Fuller et al., 2019). In comparison to an ordinary industry, ecosystems have a network-oriented structure, vague boundaries, and are based on mutuality. However, neither when defining ecosystems nor when discussing potential participant strategies, the existing literature address the issue of how to adapt to the new market conditions. The main emphasis of strategic ecosystem literature is how to compete and position yourself in relation to other actors, or how to position yourself according to the BELC, in order to secure your role in the ecosystem.

In the context of the financial ecosystem, Boratynska (2019) describes through the DIPLOMA model that FinTech best practices are agile. FinTechs shall apply the principles of agility in their software development to promote an iterative process where the firm is quick and reactive to empirical feedback and market changes. FinTech agility emphasizes the essential innovative aspect and value creation that digitalization and FinTechs are contributing to the financial sector (Boratynska, 2019).

This study has managed to confirm the agility element of the DIPLOMA model, defined as the 2nd order theme increased organizational agility in this paper. Additionally, this paper suggests how the dynamics of ecosystems have affected incumbents in general, and specifically how FinTech agility has made an impact on traditional financial institutions. The research provides further knowledge to support existing theory by discovering that organizational agility has spread to incumbent banks in the Nordics for the last 5-10 years. Incumbents are initiating organizational transformations to introduce the principles of agility in aim to become more adaptive and responsive to changes in consumer needs and market trends. The new financial ecosystem in the Nordics and its implications proposes the need of abandoning the "banking way of working", in other words, dispose of long-term projects and large decisions being made on high levels in the hierarchical organizations of traditional financial institutions. By gradually becoming more agile, incumbents are not only becoming more responsive, but are adapting their large organizations to the dynamic and unpredictable environment of ecosystems. However, this study cannot claim that this contribution is generalizable to a wider application than the Nordic, financial context.

6.4 Practical Implications

The following section covers and elaborates on the practical implications regarding the development of the Nordic financial ecosystem. This research is indicative of a transition in how banking and all related services are delivered and viewed. A transition from conventional in-house, technology and service developments within banks are being to a large extent reconsidered as the banks are able to find suitable partners and collaborations from external partners. The change process illustrated in Figure 9 indicates how changes in the industry are derived from the convergence of a multitude of external factors. The factors of change which triggered the essential transformation were identified in three progressive constellations as; *Application of digital technologies to generate new value through adaptive and responsive product developments, New standards of consumer demands,* and *Decentralization of financial services.* This development of structure and organization among participants is incentivizing players to adjust to the new situation. Thus, the practical implications of the findings of this research mainly concerns the adaption to the new circumstances of the financial ecosystem.

6.4.1 Strategic Implications from the Ecosystem Perspective

The design of an ecosystem strategy in relation to the new and dynamic environment suggests profound assessment. All players are recommended to continually evaluate the internal risks as well as the external risks of the ecosystem. This assessment and strategy definition can be conducted with assistance from the questions of where, when and how to compete (Adner, 2006). In the case of the Nordic financial ecosystem, the question of *where* to compete relates to which vertical(s) to compete for market share.

An inherent element of a typical niche strategy applied by FinTechs is that they address one or few closely related target markets. Niche players leverage specialized capabilities to pursue the lead of the verticals in which they operate (Iansiti & Levien, 2004a, 2004b). Despite a smaller market opportunity, they reduce the external and ecosystem risks by targeting a narrow portion of the market (Adner, 2006). On the contrary, FinTechs have higher internal risk as they are burdened by a high interdependence risk as they are dependent on several components from other actors to provide a complete product. For instance, the B2B FinTech described multiple interdependencies with banks, card processors and card manufacturers which they rely on in the delivery of their services. They are dependent on the fact that partners live up to their promises within a specific time frame. In other words, the more a FinTech product is contingent on the performance of others, the less control the FinTech has over its own success (Adner, 2006).

In contrast, universal banks are traditionally targeting multiple target markets within the financial ecosystem — implying a higher external risk in an ecosystem. These banks are dominators whose powers have been diminished by the vertical disintegration provoked by FinTechs. Nonetheless, incumbent banks possess a reduced interdependence and integration risk, and thereby, a lower internal risk (Adner, 2006). Despite the disintegration of their services, banks control crucial elements of the value chains, and still fully dominate some verticals of the financial market. Hence, they are less dependent on other producers and intermediaries — in comparison to FinTechs.

As the collaborations and partnerships of the financial systems begin to establish, the alignment and value chain between co-creators of value is increasingly settling. This relates to the issue of *when* to compete and creates implications which have previously been discussed. Incumbents are now compelled to regard the developments in the industry and the production of services in a more collaborative manner. Rather than conducting all developments and innovations in-house, the strategies of financial institutions are now approaching collaborations or partnerships with ecosystem participants, in order to be able to innovate and deliver in a competitive manner. In other words, they are required to decide which risks to maintain internally and which are better shouldered by a collaborative partner.

The question of *how* to compete concerns the position of the leadership in the Nordic financial ecosystem. Although the incumbent banks may in many ways be adjusting their operations and organizations to accommodate the changes which are occurring, they are still the economic powerhouses in the ecosystem. Coherent with Iansiti and Levien's (2004a) description of physical dominators, the CEO predicts that the financial resources of large banks is such an advantage, that it will make them the ultimate winners to control much of the value creation in the networked financial ecosystem in the Nordics. The developments may be indicative of a progression towards a more collaborative organization. However, the competition of the industry has increased with the emergence of FinTech and the financial power of the financial institutions can not be overstated. The concern of how to compete in the new financial ecosystem creates a strategic implication for the large banks. The new setting of the industry is suggesting a development of three archetypes roles in the Nordic financial ecosystem. The initial archetype is when the banks collaborate with large technology companies. The second is banks who will dive into specific markets and ensure that they remain market leaders in that vertical. The third archetype is where banks become a utility and embody open banking-as-a-platform to facilitate and allow third party

interactions between financial service providers and their customers. Adner (2017) clarifies that the key strategic priority for platforms in multi-sided markets is to grow both sides of the market in order to stimulate value creation through direct and indirect network externalities. However, certain large banks and institutions will remain resilient and stick to their guns as they always have, and will attempt all three archetypes simultaneously. Synthesizing, incumbent actors seem to face a large strategic decision of which direction to choose when attempting to adapt to the new reality.

6.4.2 Incumbent Partnership Strategy

The most obvious stakeholder to be affected by the environment conditions of the new ecosystem is the incumbents. In this case, this mostly concerns banks and other traditional financial service providers. Individual FinTechs have begun to optimize certain verticals of the banks' value chain — progressively invading more components of the banks' total service offering. This situation places the incumbents in a difficult position as they are losing many lucrative revenue streams, while being left with the regulatory constraints and the associated costs. For the financial institutions, the transition from what could be considered an industry to that of an ecosystem has in recent time suggested the design and formalization of an explicit strategy for the new ecosystem approach. Current research argues that participation in an ecosystem requires a distinct strategy which reconsiders strategy beyond competition to include increased collaboration between the ecosystem participants (Adner, 2017; Fuller, 2019).

The increased decentralization and accessibility of financial services has allowed customers to mix and match to find their most appropriate services. As this indicates lower barriers to entry, more actors are encouraged to leverage niche strategies and join the ecosystem to grab market share. However, as the ecosystem functions in such a manner that most FinTech companies are in dire need to collaborate with the banks, the downfall of losing a customer to a partner in FinTech may reduce the initial impact. The vast amount of partnership and collaborative requests directed to the banks pinpoints the implication and necessity for them to define a strategy for partnerships. Incumbents are advised to develop a structured process to ensure that they initiate partnerships or acquire FinTechs which are aligned with the corporate strategy, values and culture of the bank. The financial institutions should regard their specific needs, as holistic or retail banks may be suffering from losses due to the implied vertical disintegration which harms the business model that has served them so well previously. However, potential implications of a partnership must also be considered by the financial institutions ahead of commitment. The findings of this study suggest that financial institutions are placing their time and good name on the line with each partnership

they commit to. The model for a shared platform utilized by the Retail Bank does have the upside that they are able to offer their customers a superior product while simultaneously being able to gain new customers. However, the downside of losing an existing customer, albeit to a competitor, must be evaluated and taken into consideration. Financial institutions are wise to not underestimate the consequences of losing an increasing amount of touchpoints and relations with customers in cases when the collaborative FinTechs are facilitating the customer interactions. Nonetheless, by taking the current industry outlook into regard, this paper argues the necessity for an established strategy. Financial institutions are closely following the developments as they decide to acquire or partner with FinTechs, or to transform and become a de facto facilitator or platform for the FinTech revolution, in an attempt to reclaim market share which is being lost to FinTechs.

6.4.3 Incumbent Agility Strategy

Dapp (2017) argues that financial institutions should consider entering strategic partnerships with external technology and financial service providers along their entire value chain. However, the challenge is to simultaneously develop the internal organization appropriately to the digital and platform-based ecosystem of today. In alignment with, and in extension to Dapp, this paper suggests an urgency of incumbent agility in the Nordic financial ecosystem. This contribution to knowledge emphasizes the implicit implication for the banks to formalize a strategy for how the bank can act with agility, although a history of rigid processes and bureaucracy. Dapp (2017) stresses that success only comes from a holistic commitment where all parts of a firm adopt an appropriate digitalization strategy. Although the banking industry has had their stringent ways of working, the implication of an ecosystem concerns the potential necessity of attempting to fit the organizational environment to a higher degree (Iansiti & Levien, 2004a, 2004b). Not only does this relate to the complementary capabilities to ensure a mutual and enhanced value co-creation for all stakeholders, but also entails the technical fit to enable an integration of fellow ecosystem participants. However, first and foremost, this research proposes that incumbents shall achieve internal agility across the entire organization to break down silos and become flexible towards the sudden market trends and developments of ecosystems. The full-scale implementation of agile principles in such large and complex organizations will most likely be a difficult, time-consuming and costly process, but is argued to be a vital prerequisite to stay relevant and competitive in the financial ecosystem of the Nordics.

6.4.4 FinTech Implications

Despite that FinTech players already possess the fundamental agile element of ecosystems, they are recommended to cope with the challenge of proving that they are not merely a shooting star. Although many FinTechs have succeeded to grow remarkably in recent years, they are encountering the necessity of demonstrating that they operate a sustainable business model, and are a participant to rely on in the future Nordic financial ecosystem. This will most likely be an increasingly imperative feature for niche actors to highlight, considering the growing number of FinTech. As the banks develop processes and strategies to become more selective concerning partnerships, they will have higher expectations on FinTechs. Even if a FinTech can deliver and integrate an impressive innovation, the findings of this study propose that entrepreneurs should develop the ability to properly present economic outcomes and the company profile, when seeking to settle a partnership with an incumbent bank. This especially concerns the actors that need banking infrastructure to complement their solutions and complete their production lines of value creation. The Board Member recognized that a big challenge for entrepreneurs and startups today is the ability to sell their company and draft financial statements. In other words, it appears essential for FinTechs' independent future that they are capable of providing a compelling case when seeking to partner, collaborate or be acquired by an incumbent actor.

6.4.5 Lack of Keystone Player

Although the large banks are the dominators and orchestrators of the financial ecosystem, this research has not identified any keystone organization in the Nordic context. The absence of a keystone can both illustrate the young age of the ecosystem, as well as the extensive scale of services that it encompasses. Achieving the critical role of keystone in the entire Nordic financial ecosystem will require massive amounts of resources over a long-term perspective to be able to establish whether an actor has succeeded in reaching that position (Adner, 2006). As the Nordic financial ecosystem is considered to currently reside in the converging stage of the BELC, it is reasonable to believe that a keystone will not be established until the leadership phase has crowned an ecosystem leader.

One can speculate that three different actors may pursue the keystone role. Firstly, a bank could attempt to transform to the third archetype mentioned above, where they would be able to facilitate the transactions between third party service providers and all market segments. The second possibility is that one of the big technology companies which have begun to enter the financial ecosystem will create a superior platform which is integrated with its current systems that already

serves extraordinary amounts of customers. Third, a digital platform could create a service which is able to accommodate all possible interactions between stakeholders in the financial ecosystem. The platform approach may be categorized as a concept which provides opportunities for distributed development and innovation through modularization (de Reuver et al., 2018). In this context, a platform approach may stipulate a hub position in the market and through a position of power may dictate the governance through choices of incentives, control and access in the entire Nordic financial ecosystem (Adner, 2017). Whomever determines to compete for the keystone position, there are substantial risks, mostly referring to the aforementioned commitments of resources and time. To achieve a successful attempt, the contender is required to assess ecosystem risks and formulate a strategy by obtaining input from all stakeholders of the ecosystem, followed by a thorough firm-wide implementation of the strategy (Adner, 2006).

Indifferent of who will become the keystone organization, the practical implication for the other ecosystem participants is that they may be forced to adapt to a new leader. This paper suggests that if a competitor pursues the keystone role, participants should stay alert and flexible to enable any quick, strategic, and reactive maneuvers if necessary. This is another motive for both FinTechs and especially for incumbent banks to become and maintain agile organizations. Since banks are the orchestrators of the ecosystem today, they are unlikely to be keen on the idea of losing more influence over the ecosystem. Moreover, the establishment of a keystone would most likely shift the Nordic financial ecosystem from a wolf pack to a lion's pride, characterized by the ability of the single orchestrator to monitor and facilitate the activities in the ecosystem. The dynamics of a typical lion's pride archetype are distinctive and further incites participants to become flexible to the directions that the ecosystem develops (Davidson et al., 2015).

7. Conclusion

In recent years, consumer banking has experienced an increased disruption by FinTech. The prevalent trend of escalating mobile device use has enabled consumers to access digital services and applications within consumer banking at an unforeseen level. The adherent implication has been the transition from traditional banking channels to an increase in mobile banking channels. Changes in consumer behavior has altered the expectations of how services should be received, and thus, pressured the traditional financial institutions to remain vigilant to adhere to the change in times. New companies have benefited from the increased digitalization of the financial industry, and an influx of FinTech companies have established themselves across many verticals of the

financial services industry. Interviews with industry experts from the Nordic financial industry revealed that the industry has seen a change in demand and expectations due to increased competition and solutions available. Therefore, this paper sought to inquire as to how the changed landscape of the financial industry has changed incumbent behavior or perceptions. Additional questions revealed that FinTech in particular has served as a catalyst of change, forming the research question of "*how has FinTech affected the financial industry in the Nordics*?". This research emphasized input from FinTech companies as well as traditional financial institutions as these are argued to make out the largest contributors to the financial industry in this context.

This paper established a research design which adhered to the views of interpretivism, through an inductive approach to support the qualitative methods used to answer the research question. Therefore, the research was established as a case study using a mono-method approach, thus allowing for the conduction of six semi-structured interviews with industry experts from different backgrounds within the Nordic financial industry. In order to establish a valid contribution to knowledge regarding FinTech's impact on the industry, the participants were asked how FinTech has affected their companies, the Nordic financial industry and its future outlook. The data analysis was conducted through thematic analysis where the qualitative data could yield themes or patterns specific for the case.

The thematic analysis permitted the establishment of a data structure model where the identified themes concluded in an aggregate dimension. In turn, the aggregate dimension assisted in visualizing the change process which the Nordic financial industry has undergone due to the emergence of FinTech. The aggregate dimensions in the change process model expand upon the interrelationship of the factors resulting in the development of an ecosystem. The data suggests that the interrelationships between new technologies, processes, regulations, user-centricity and the democratization of customer data enabled niche actors to optimize financial services verticals in the Nordics. In relation, the increased number of niche actors functioned as a catalyst of new consumer demands, where customers request increased digital services as well as increased transparency regarding their financial service interactions and the implications these may entail. The suggested pressure placed on the traditional financial institutions, due to these new standards of consumer demands, resulted in an operational change where the financial services industry realized the difficulties of a siloed approach to product development and innovation. This development pushed many traditional financial institutions towards partnerships in order to co-develop and add value through co-creation, in some cases facilitated through digital platforms.

Thus, indicative of a transition to a Nordic financial ecosystem rather than a Nordic financial industry.

This paper utilizes the BELC model in order to present the Nordic financial ecosystem life cycle. The findings suggest that the industry has as of yet gone through two phases of the ecosystem life cycle, and is currently residing in the convergence phase. The emerging phase was defined by FinTechs arrival, as electronic payments became increasingly prominent the application of digital technologies allowed for new value creation. Entrepreneurs were quick to react, and in this introductory phase realized the value of adaptive and responsive product development. The data indicates that the diversifying phase of the Nordic financial ecosystem life cycle was defined by the increased application of new digital technologies through adaptive developments to create new products and add new value. Additionally, as new firms optimized verticals, consumers realized new standards of demands which the traditional financial institutions needed to adhere to. The implications of the suggested diversification and increased vertical disintegration indicated a need for traditional financial institutions to reconsider their operations and strategies for competition. The data suggests that the converging phase of the ecosystem life cycle is where the market is currently situated. The pressure derived from the diversification of financial service verticals, resulted in a decentralization of financial services in the Nordics. The traditional financial institutions have to an extent developed mutually beneficial partnerships and collaborations with FinTech companies in order to facilitate innovation, as well as to adhere to the increased consumer demands for digital touchpoints. The stabilization of the industry and convergence of market participants is indicative of the transition to an ecosystem where dynamic capabilities allow for increased dependability.

The application of previous literature has further allowed for the affirmation of the Nordic financial ecosystem. The suggested modular architecture of the current financial industry not only enables customers increased flexibility in decision making, but is also a derivative of the financial industry's transformation to an ecosystem. Thus, benefiting the customer as companies are pressured to offer improved services, better customer experience and higher quality at lower prices. In addition, previous definitions of a FinTech ecosystem enabled the suggested affirmation of a Nordic financial ecosystem through the combination of previous ecosystem elements, in connection with the derived categories of the Nordic financial industry.

In conclusion, the data suggests that due to the transition from industry to ecosystem caused by FinTechs, the incumbent financial institutions are now required to conduct internal adjustments to be able to remain competitive. The need for dynamic and collaborative capabilities is suggestive of a modernization of the Nordic financial industry. The effect FinTech has had on the industry encourages incumbent participants to become agile and not only be reactive to new competition, but also to new trends and market changes. FinTechs' agility emphasizes the crucial innovative and agile characteristics of value creation that digitalization and new financial technology are establishing within the Nordic financial ecosystem.

8. Future Research

There are multiple directions which are interesting for further research in the context of the financial ecosystem. This research is raising the awareness and relevance of observing the financial industry from an ecosystem perspective, and can be utilized as one of the base components for future research within the topic. Below follows an agenda for further research and recommendations regarding the potential paths to take in order to develop current knowledge of the financial ecosystem.

Firstly, this paper is delimiting the scope of interest to the financial ecosystem in the Nordics. Future research can not assume that the data and findings are applicable to any other market of the financial ecosystem. Thus, an interesting direction to extend on this study would be to either replicate, or conduct a similar research in other markets. As PSD2 is an EU legislation, it could be hypothesized that a research will achieve more comparable findings if this study is duplicated in an European setting, compared to applying the research process in any other part of the world. Nonetheless, it is still relevant to investigate the emergence of the financial ecosystem in all geographical settings to expand on existing knowledge. Additionally, replicating this study would test the change process model proposed in this research and validate or reject its transferability.

Another research decision of this paper is the focus on the entire sphere of the financial market, which in practice encompasses a distinct breadth of products, services and target groups. In other words, this research applies a very holistic approach to understand the general and considerable factors in which FinTechs have affected the Nordic financial ecosystem. No matter which market, this study empowers future research to dive into the particular segments of the financial industry to understand how FinTech has had an impact on each vertical specifically. The researchers believe

such studies would enable more accurate and implementable recommendations for actors operating in a specific vertical, as it would produce more explicit and detailed findings.

The choice to interview experts from incumbent banks and FinTechs was exclusively motivated by their ability to provide a representative illustration of the financial ecosystem and its evolution. However, for research with more available resources and a less limited time horizon, it would be reasonable and legitimate to conduct a greater number of interviews with additional types of stakeholders in the financial ecosystems. Applying a wider scope to include all defined categories of actors in the ecosystem as data subjects would most definitely provide a richer data set, and thus, generate additional and more detailed findings. Likewise, as the study is researching the change process of the financial industry developing over a long period of time, a longitudinal study would be suitable to gain a substantial understanding of the dynamics in the Nordic financial ecosystem. Additionally, it would be of interest to recreate this research in a number of years, both to examine the findings of this paper, and to see how the evolution of the financial ecosystem has progressed at that point in time to compare the findings.

One of the contributions to knowledge that this study makes, is emphasizing the significance of incumbent banks in the Nordic financial ecosystem to transform their internal organizations to become more agile and adaptive. This contribution guides future research regarding organizational agility in the context of the financial sector. One could test the transferability of this finding in similar contexts by following the demonstrated research process in an ecosystem which has emerged as a result of disruptive actors leveraging agile organizations and the digitalization to decentralize and vertically disintegrate an industry consisting of few, large actors. Additionally, it would be of high interest to understand how large and traditional participants in the financial ecosystem could make an efficient and cost-effective transformation to acclimate to the circumstances of the new environment.

An alternative approach to expand on the points and conclusions made in this research, would be to analyze the same case and phenomenon, while applying an optional perspective — other than the ecosystem lens. This would be an interesting approach to evaluate whether the research would achieve similar or completely different findings. Either way, the outcomes would elaborate on the intelligence of how FinTech has influenced the financial industry.

Lastly, digital platforms in the financial sector is a research topic which lacks existing theory in general, and especially in the Nordic context. There are opportunities for a deep dive into the function and role of digital platforms in the financial ecosystem going forwards. Furthermore, it would be interesting to expand on this study by investigating the keystone position in the Nordic financial ecosystem, how that role might arise, be designed and function as a holistic orchestrator. A disclaimer here is the aforementioned detail that a keystone might not be established in this context for a long time.

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10. Appendices

Appendix 1: Interview Guide - FinTech

Interview Guide - B2B FinTech

Location: Carl Bernhards Vej 13B, Copenhagen

Time & date: 17/3-2020 10.00

Setting: Meeting facilitated over Google Hangout where both the Market Launcher and the researcher were situated in private areas in our respective homes.

1. **Introduction**

First of all, thank you for participating in this interview. We'll begin by repeating what we want to investigate and find out during this interview. Then we'll ask you to describe your role at B2B FinTech and your background to gain a basic understanding of your professional profile and expertise. Then we will ask you about B2B FinTech, the financial industry and its incumbents.

We're interested in the industry developments, the industry outlook in general and how B2B FinTech specifically regards their positioning moving forward. A part of this is also to capture your insights regarding the future development of the financial industry.

1.1 Please introduce yourself and briefly describe your professional background.

1.2 We have gained the understanding that B2B FinTech mainly offers a company spending solution, which provides company cards to employees to simplify business purchases as well as expense reporting. Please briefly expand on who B2B FinTech is and the services you offer.

2. B2B FinTech and incumbent banks.

2.1 B2B FinTech works within a niche market of spending and expense control, what factors permitted the B2B FinTech and similar firms to grow and grab market share?

a. Where does this need come from?
b. How do you define your target group?
c. Does this mean that someone else has lost market share?

2.2 How has B2B FinTech affected incumbents in the market?

a. Who are or were the actors previously?

2.3 How is B2B FinTech's relationship with incumbents and traditional financial institutions?

a. Do you regard the incumbents in a sense of possible collaboration or competition?
b. Does B2B FinTech have any interdependencies with incumbents in their business environment?

If they have collaborations:

2.4 What can a collaboration with a financial institution look like for B2B FinTech?

a. What type of incumbents do you collaborate with?
b. What are the advantages of collaborating rather than competing?
c. Is the collaboration beneficial for both parties? How?

If they compete:

2.4 . Why have you chosen to compete with FinTechs rather than initiating cooperation?

a. What are the advantages of acting more independently?

2.5 Could you please explain your partner program. What type of companies is this program targeting?

a. How has this program been received by the target group?
b. Can you describe what a typical partnership looks like?

2.6 B2B FinTech offers one way to handle business purchases and expenses, how do you position yourself in comparison to competitive firms who offer alternative spending solutions?

a. Why do you believe this positioning is effective in your business environment?
b. What are the benefits of choosing B2FinTech's services over other spending solutions?

3. Financial industry

3.1 Within the financial industry, we have discussed actors such as traditional banks. Can you please map the other types of actors that the B2BFinTech interacts with in your business environment?

a. What other types of stakeholders exist within the business environment of the B2B FinTech?

3.2 How has the industry changed since the financial crisis in 2008 apart from the regulatory changes which followed?

a. What trends have emerged from the financial crisis?

3.3 Which industry trends and developments has allowed the B2B FinTech to emerge?

3.4 Is the industry of the B2B FinTech congested today?

a. Is the development of the industry sustainable?

3.5 How do you predict the financial industry to develop in 10 years, considering the emerging number of FinTech?

3.6 What new trends and developments do you believe will remain and prosper in the next 10 years?

3.6 Will the way of working in B2B FinTech remain the same in 10 years?

3.7 From the B2B FinTech's perspective, what would the ideal industry development look like?

3.8 Within the travel industry, there are digital services (platforms) such as Momondo, who connect individuals with service providers within tourism and hospitality. Can you identify any similar digital services within the business area of the B2B FinTech?

a. If yes, which companies offer these services?
b. Have B2BFinTech considered to provide such services?
c. Are you able to identify any actor who provides these services across the entire financial industry and not only in your niche?

3.9 That was all the questions we had for you. Do you want to add any insights or interesting perspective to this discussion before we end the interview?

Thank you for participating in this interview and contributing to our research!

Appendix 2: Interview Guide - Financial Institution

Interview Guide - Financial Institution
Location: N/A
Time & date: N/A
Setting: N/A

1. **Introduction**

First of all, thank you for participating in this interview. We'll begin by briefly repeating what we want to investigate and find out during this interview. Then we'll ask you to describe your role at (Bank) and your background to gain a basic understanding of your professional profile and expertise. Then we will ask you about (Bank) and the financial industry.

We're interested in the industry developments, how the industry in general, and (Bank) specifically have been affected by the digitalization and evolution of FinTechs. A part of this is also to capture your insights regarding the future development of the financial industry.

1.1 Please introduce yourself and briefly describe your professional background.

1.2 We know that (Bank) is a traditional bank with services towards both individuals and companies. Please briefly describe who (Bank) is and what your role is.

2. (Bank) and FinTechs

2.1 All of your business areas may not have been affected by the FinTech revolution. Therefore, it is of interest to us to understand which markets have been affected and are most relevant in regards to the rise of FinTech?

a. Why do you believe that these markets are targeted?
b. Why not the other business areas?

2.2 What FinTechs or type of FinTechs have you encountered in the relevant markets?

2.3 Has (Bank)s internal processes or ways of working been affected by the emergence of FinTech? If yes, how?

2.4 Have (Bank) identified if FinTechs have affected your customers in any way?

a. If yes, how have (Bank) reacted to this?

2.5 How is (Bank)s approach in regards to FinTechs and other emerging actors in your industry?

a. Do you regard FinTech companies in a sense of possible collaboration or competition?

If they have collaborations:

2.6 What can a collaboration with a FinTech look like for (Bank)? Example?

a. What are the advantages of collaborating rather than competing?
b. Is the collaboration beneficial for both parties?

If they compete:

2.7 Why have you chosen to compete with FinTechs rather than initiating cooperation?

a. What are the advantages of acting more independently?

2.8 Does (Bank) have a formalized strategy in regards to these emerging actors? (partnership strategy?)

a. Is this strategy aligned with the long-term vision of (Bank), or is it developed due to recent industry circumstances?
b. To the best of your knowledge, is this strategy a trend(common) within the financial industry or is it specific for (Bank)?

2.9 What type of FinTech are suitable for (Bank) to engage with?

3. Financial industry

3.1 Within the financial industry, we have discussed traditional financial institutions like (Bank), as well as FinTechs. Can you please map the other type of actors that (Bank) interacts with?

a. What other types of stakeholders exist within (Bank)'s business environment?

3.2 Speaking in general terms, what factors have allowed FinTechs to emerge, and how have they succeeded to do so?

3.3 How has the industry changed since the financial crisis in 2008 apart from the regulatory changes which followed? (Business Environment participants)

a. What impacts did the financial crisis have on (Bank)?
b. What trends have emerged from the financial crisis?

3.4 If you consider all the stakeholders in the financial industry that you just mentioned. Did the industry consist of other types of actors prior to the financial crisis? Have any actors joined or left the industry since then?

a. If yes, what did the industry look like before?
b. Which type of actors didn't exist in your business environment before?
c. Have any actors left the business environment?
d. How has your relationship with other industry actors changed?

3.5 Are the business areas you operate in congested today? The financial/banking industry in general? Is the banking industry congested today?

a. Is the development in the industry sustainable?

3.6 How do you predict the financial industry to develop in 10 years, considering the emerging number of fintech?

a. What new trends and developments do you believe will remain and prosper in the next 10 years?

3.7 Will the way of working in (Bank) remain the same in the next 10 years?

3.8 Are you able to identify any actors within the financial industry who facilitate digital exchanges and interactions between multiple groups of actors? E.g. connecting suppliers and consumers.

3.9 That was all the questions we had for you. Do you want to add any insights or interesting perspectives to this discussion before we end the interview?

Thank you for participating in this interview and contributing to our research!