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BANK AND FINTECH COMPETITIVE DYNAMICS AND THE PERCEIVED VALUE OF PARTNERSHIPS IN AN OPEN BANKING MARKET ENVIRONMENT

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ABSTRACT OF THE MASTER'S THESIS

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Abstract

This thesis discusses the relationship of banks and Fintech companies in the changing European financial markets. In order to answer this thesis’ research questions regarding bank and Fintech competitive advantages and the perceived value of collaboration, a closer look at the underlying market conditions is required. A literature review of previous research reveals that new regulation in the form of Payment Service Directive 2 (PSD2) is being implemented to correct the poor competitive pressures and consequent lack of innovation in the European financial markets. The regulation aims to create more options for consumers and drive consumer benefit by opening the financial markets to new service providers. As a result, an increasing amount of Fintech companies enter the market space and create competitive pressures towards banks by providing superior customer experiences in specific niche service areas. This thesis provides a perspective on bank and Fintech relationship that goes beyond competition and discusses also the possible value of collaboration.

This thesis is conducted as a qualitative case study and the data is collected via theme-based semi-structured interviews with three executive-level bank representatives and six Fintech executives. The interviewees from the bank have extensive experience working with PSD2 and open banking related initiatives and Fintech partnerships. The six Fintech case companies originate from Sweden, UK, USA, Canada and Singapore, and all of them have previous experience collaborating with banks.

The key findings of this research conclude that bank and Fintech competitive advantages are complementary in nature. Banks are trusted actors in the market that benefit from an existing customer-base and established distribution channels, whereas Fintechs are fast, technologically capable, and have niche expertise in specific service areas. The complementarity of bank and Fintech competitive advantages creates opportunities for mutually beneficial collaboration models and incentives for the creation of platform solutions, where greater customer value can be achieved. While open banking and platformization are deemed to have significant effects on incumbents, the results indicate that PSD2 alone is likely to have a smaller effect on banks than suggested by previous research, as the effects are restricted to payments. PSD2 is, however, seen as a catalyst for the larger change towards open banking and platformization.

The findings of this thesis can be utilized by financial market stakeholders, primarily bank and Fintech executives, to position themselves strategically to the development of open banking and platformization. The results can also help bank and Fintech executives understand the core competences that are emphasized in an open banking market and furthermore, understand how to benefit from complementary competences via partnership. This thesis provides a clear managerial implication that bank and Fintech partnerships can unlock significant value for both parties.

Keywords
Open Banking, Competitive advantage, PSD2, Fintech, API, Collaboration

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1 INTRODUCTION

The banking industry is currently experiencing a fundamental change in the way new financial services are created and offered to customers (Romanova et al. 2018). The field of financial services is being opened up to new entrants and more innovative services to drive forward competition. While also other markets globally are adopting increasing efforts in innovation, the European market is facilitating this change with regulation. Regulation combined with developments in the technology that new services are built on, such as artificial intelligence (AI) and machine learning, implies a need for industry incumbents to adapt to a rapidly changing competitive environment. The changes currently taking place have been discussed by industry and academic professionals to be significant, even revolutionary, shifts towards a more innovative and customer-centric financial industry (Cortet et al. 2016, Gomber et al. 2018, Romanova et al. 2018).

The financial industry has been going through an incremental period of process digitalization since the second half of the 20th century. The transition began with bringing simple back-office processes into a digital form and further evolved into comprehensive digitization across back-office and customer-facing channels. The adoption of online banking in varying degrees since the end of the century brought the digitalization of banking to the daily lives of customers as well, and by the beginning of the 21st century banking was characterized as an increasingly online-forward industry. More recently online banking has been transferring from web to mobile due to changing customer behaviour. To further increase consumer benefit and respond to changing demands, current regulation is opening up the financial market to third-party service providers and requiring banks to give these third parties the ability to utilize customer data within the banks. (Puschmann 2017.)

While Europe has introduced a very structured way to carry out the changes to the financial industry via regulation and supervision, other financial markets such as the US and Asia are also showing a shift towards a similar, more open market space in financial services (Brodsky & Oakes 2017). With the new regulation, the opening of financial markets will enable small innovative financial technology companies, Fintechs, to provide much of the same financial services to customers related to payments and personal finance, which have previously been exclusively offered by banks (Vasiljeva & Lukanova 2016, Romanova et al. 2018). On one hand Fintechs will have the ability to increase competition and pressure of innovation for banks, while on the other hand the surge of new Fintech companies is also a resource for new ideas and partnership candidates for banks. The altering structure of the banking markets is requiring incumbent banks to rethink their offering and adjust their strategies to remain competitive amongst new, more agile players (Cortet et al. 2016). Many banks are yet to develop fully-formed strategies on how to answer to the challenge of increasing competition, but essentially, the strategic considerations are related to finding a fit in the new value chain and positioning themselves to compete or partner with Fintechs. (Mulder & Westerhuis 2015, Cortet et al. 2016.) This thesis will inspect both the competitive dynamic of banks and Fintechs, and the implications of partnership for both parties.

Radical change has been known to be a bigger challenge to big companies who have highly formalized operations and who are operating in heavily regulated industries (Powell & DiMaggio 1991). Consequently, the entering of Fintechs to the financial market space is proving to be challenging to banks, because Fintechs have the advantage of agility due to smaller size and a lighter regulatory burden compared to the incumbents (Cortet et al. 2016). However, while Fintechs can be fast, banks maintain the advantage of having an established position and accumulated experience in the financial markets, which makes the relationship between these two industry players compelling to research further.

This thesis examines the competitive dynamic and the relationship between banks and Fintechs in the financial market at the time of significant regulatory change. The empirical research conducted in this thesis is executed as a case study focusing on one of the largest financial institutions in Finland and six international Fintech companies in its network. For the purposes of this research, the main focus will be on the European market, as regulation is providing a unified and systematic approach to the opening of the financial markets. However, in addition to companies that are directly under the EU regulation, the topic of open banking will also be reflected on from the viewpoints of Fintechs from North America and Asia based on their activities in both Europe and their respective home markets.

1.1 Definitions and key concepts

1.1.1 Fintech

Fintech is simply a combination of the two words “financial” and “technology” (Puschmann 2017). Fintech companies are usually small-to-medium sized companies, startups or scaleups, pursuing fast growth and applying new technologies to produce innovative financial services (Vasiljeva & Lukanova 2016, Puschmann 2017). In the context of open banking, Fintechs can be generally referred to as Third Party (Service) Providers (TPPs) (Cortet et al. 2016).

1.1.2 Open banking

Brodsky and Oakes (2017) define open banking to be the enhanced data-sharing capabilities between banks and TPPs to bring new services to the financial markets. Essentially, the new financial market environment, where third party companies such as Fintechs can offer financial services by accessing banks’ customer information, is referred to as open banking (Basso et al. 2018).

1.1.3 APIs

Application Programming Interfaces or APIs are a channel of communication i.e. sharing data between different software platforms. APIs are a pathway through which TPPs can retrieve specific data that is hosted on another platform. (Cortet et al 2016.) For the purposes of this thesis, APIs will be discussed as the main method for Fintechs to access customer data within banks’ information systems.

1.1.4 PSD2

Payment Services Directive 2 (PSD2) is an EU directive imposed on European financial institutions to deregulate payments. PSD2 requires financial institutions to share customer account information and enable payment initiation for third-party service providers based on customer consent. In practice, the directive enables TPPs to fetch customer account balance and transaction information and make payments from customer accounts via standard APIs. The possibility to offer services based on account information and payments has previously been exclusive to the financial institutions possessing the customer information. (Cortet et al. 2016, Haubrich 2018.)

1.2 Purpose and research gap

The purpose of this research is to examine the developing competitive dynamic and relationship between banks and Fintechs in a changing financial market environment. This research is executed at a time when new regulation, more precisely the Payment Service Directive 2 (PSD2), is being implemented in the EU, and the market incumbents are affected by an uncertainty of how it will exactly affect the market.

This thesis is motivated by the current importance of the topic and the impact that PSD2 regulation will have on the European financial market. The change towards open banking is not exclusive to Europe, but the most structured approach to the transition is being implemented by the EU in the form of PSD2 (Brodsky & Oakes 2017). While this thesis focuses its research on the European open banking environment, the principles of open banking are applicable to the other financial market systems going through the same changes. The value of this research is heavily rooted in the fact that it can provide perspective to banks, Fintechs and other industry stakeholders on a phenomenon that is affecting the development of future financial markets and creating uncertainty in the market participants.

Previous research on the subject matter is scarce and somewhat fragmented (Cai 2018). Presumably this is a consequence of the newness of the phenomenon and the early stage of development of open banking globally. The small amount of research done on the subject matter has focused largely on examining the ways Fintechs will disrupt the market and how the market offering will change. These studies have shown mainly three things: firstly, both banks and Fintechs will be likely to play an important role in the future financial markets. Secondly, the market offering will expand as Fintechs will be able to provide more niche services and lastly, the competitive pressures will rise for all market participants. (Döderlein 2018, Gomber et al. 2018.) The research gap this thesis addresses is the lack of a deeper understanding on how both banks and Fintechs perceive each other’s competitive advantages as the financial market moves towards open banking. Furthermore, this thesis studies whether banks and Fintechs perceive there to be mutual benefit in cooperation in an open banking market environment. The results of the research thus intend to help both banks and Fintechs assess their strengths in the open banking markets and align their strategy regarding partnerships. The topic of the research is especially interesting, because there are very little best practices or templates for action in the open banking market, as the stage of implementation in Europe is very early.

This thesis attempts to answer two research questions regarding the bank and Fintech relationship in the open banking market environment:

1. What are the perceived competitive advantages of banks and Fintechs in the open banking market environment?

2. Is there mutual value in cooperation between banks and Fintechs in the open banking market environment?

1.3 Theoretical framework

A company's competitive advantage can largely be determined by its abilities to adapt to changing market forces surrounding it (Ilinitch et al. 1996). In the case of open banking in Europe, regulation among other forces, is driving forward a fundamental change in the financial markets, which is setting competitive pressures for the incumbent firms (Basso et al. 2018). This thesis utilizes neo-institutional theory as a framework to examine how change is perceived by companies. Neo-institutional theory explains how organizations' internal processes are affected by the organizations' perceptions of changes in the operational environment and institutional pressures, such as regulation (Greenwood & Hinings 1996). Neo-institutional theory also explains how these perceptions affect not only the company itself but the entire network or population of heterogenous companies that are somehow connected e.g. within a certain industry (Powell & DiMaggio 1991, Greenwood & Hinings 1996).

Furthermore, neo-institutional theory determines that organizational change takes form in the interplay of external pressures and the actors making sense of the pressures imposed on them (Greenwood & Hinings 1996). Consequently, the neo-institutional theory provides a framework on how to study change in an organizational environment. First, to understand why the current transformation is taking place, the important forces and drivers of change in the financial market are to be determined. Secondly, the relevant financial industry actors in the scope of this research, namely banks and Fintechs, are brought forth and the effects of external pressures towards them discussed. Finally, in the empirical part, both bank and Fintech perceptions of the current change are examined to understand how they make sense of their transforming organizational environment. The neo-institutional framework for studying and understanding the transformation in the financial markets is depicted in Figure 1.

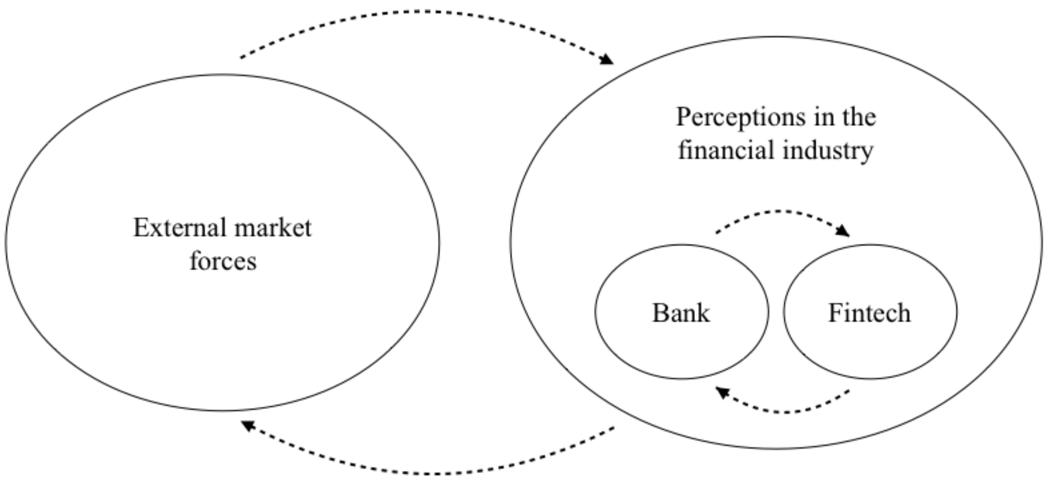

Figure 1 Neo-institutional framework for studying change in the financial industry.

1.4 Research methods

This thesis utilizes a qualitative case study to examine the changing relationship of banks and Fintechs. The research is conducted with a large Finnish bank and six international Fintech companies that the bank has engaged in partnership efforts on different levels. Before the empirical part of the thesis, a comprehensive theoretical knowledge-base on the subject matter is established with a literature review on previous research. In the empirical part, the method used is a qualitative content analysis of data gathered through semi-structured, theme-based interviews with the case companies. The goal of the interviews is to understand how banks and Fintechs perceive the changing circumstances brought on by open banking. The research methods are explained in more detail in chapter five.

1.5 Structure of the thesis

The structure of this thesis aims to build a theoretical understanding, based on previous research, before moving on to the empirical study and diving deeper into the subject matter. Following this introduction to the subject, *chapter two* begins with a description on how the financial markets in Europe and globally are changing and discusses the driving forces or catalysts behind the change. From there, *chapter three* continues with an introduction to Fintech as a phenomenon and gives an overview on what the role and the effects of Fintech companies are within the financial market. *The fourth chapter* moves on to discuss the relationship dynamics between Fintechs and incumbent banks both from a collaborative viewpoint and a competitive viewpoint. *Chapter five* marks the end of the theoretical part of the thesis and transitions to the empirical part by defining the research methodology in more detail. In *chapter six* the research results are brought forth and reflected to theory. *In chapter seven,* the key findings are further discussed and considered also from a managerial implication point of view. Finally, the limitations of the research and suggestions for further research are deliberated, and in the very end of the thesis, references and appendices are listed.

2 THE CHANGING FINANCIAL INDUSTRY

This chapter gives an account on the change currently taking place within the financial industry. The main subject of this chapter is open banking and the regulatory environment that is developing to support more open competition in the financial markets. To give a comprehensive understanding on how the change in the financial market is formed, the link between regulation, especially PSD2, and open banking is explained. The focus of this chapter is the European market, as the coverage of PSD2 is confined within the EU. However, it should also be noted that the overall financial market development and the forces behind it are not specific to the European financial markets but also applicable to other financial markets globally as well.

2.1 Forces of change within the financial industry

The financial sector plays a crucial role in national economies' wellbeing and growth (Yap 2017). Within the financial sector, banks have a prominent role providing services such as accounts, cards, lending, investing and advisory. With these services, banks are empowering individuals and businesses to make financial decisions and investments for the future and are thus acting as engines and enablers of growth in national economies. (Kasasbeh et al. 2017.) Currently, the financial services landscape is experiencing a period of transformation in Europe with new regulation. While constant change is characteristic of the financial sector, the current transition towards an open banking market environment is fundamental enough to constitute a closer inspection of the forces that drive this change forward.

After the euro currency was introduced in 1999, the competition in the European financial markets increased suddenly due to market liberalization. Consequently, major banks saw an advantage in the playing field's integration and began to scale-up their operations. However, after the initial competitive surge caused by the introduction of a common currency, the European financial markets haven't seen sufficient integration to maintain the competitive atmosphere. (Gianiodis et al. 2014.) In fact, regulation has since been somewhat inconsistent in its efforts to increase competition and thus regional differences have remained significant (Anyfantaki 2016, Howarth & Quaglia 2016). After the 2008 financial crisis, studies on the European financial market concluded that the banking sector exhibited systemic risk, and to minimize this risk, regulation of banks was tightened in the form of Basel III. However, this led to a constraint in innovation activity and IT development budgets, which further discouraged competitive measures between incumbents. Eventually, in 2016, PSD2 was passed by EU officials and it is considered to be the first big change since the euro to foster a more competitive market environment. (Anyfantaki 2016.)

Previously the markets have been quite homogenous in terms of regulation with incumbent firms facing similar requirements. However, with the introduction of PSD2, the new innovative Fintech companies are in a position to increase the competitive pressure directed towards banks and challenge their market share with innovative and scalable services, with a considerably lighter regulatory burden. (Döderlein et al. 2018.) Overall, the emergence of Fintechs has been rapid in the past years, and now banks are in a position where they need to find ways to keep up with the pace of innovation while operating under heavy regulation (Drasch et al 2018, Döderlein et al. 2018).

Regulation is regarded as considerable driver for change in the financial markets. Romanova et al. (2018) recognized that regulation is often interconnected with technological advances, which keep pushing the financial industry to change constantly. Changes in the available technologies in the market constitute another considerable force in driving forward competition. The development of technologies such as artificial intelligence and machine learning, has been crucial in the modification of the financial services landscape and continues to heavily affect the competitive situation in the financial markets. (Cortet et al. 2016, Gomber et al. 2018.)

Cortet et al. (2016) also found changing consumer behaviour to be a significant source of change in the financial markets. Consumers are becoming accustomed to services that are accessible anytime, anywhere, and the demand for personalized, convenient and seamless experiences across different platforms is providing a challenge for financial service providers to innovate. Changing consumer behaviour and demand are pushing financial institutions to heavily invest in their mobile offerings and to enhance user experiences. (Cortet et al. 2016, Romanova et al. 2018.)

The shift in technology, regulation and consumer behaviour are all forces, which are pushing the financial markets to give more options and, subsequently, power to the consumers. Furthermore, the rising level of investments in Fintech, i.e. available funding for the new entrants and investments made by banks on new technology, are pushing for more competition and innovation in the markets (Anyfantaki 2016, Vasiljeva & Lukanova 2016, Gomber et al. 2018).

Due to increasing competitive pressures, the market participants are required to innovate continuously. From the previous research, it becomes apparent that the rising level of competition and the increased demands for innovation are closely interlinked. (Döderlein 2018, Gomber et al. 2018.) The review on previous literature clearly reveals four driving forces of competition within the financial markets that also push forward new innovation. These driving forces are depicted in Figure 2.

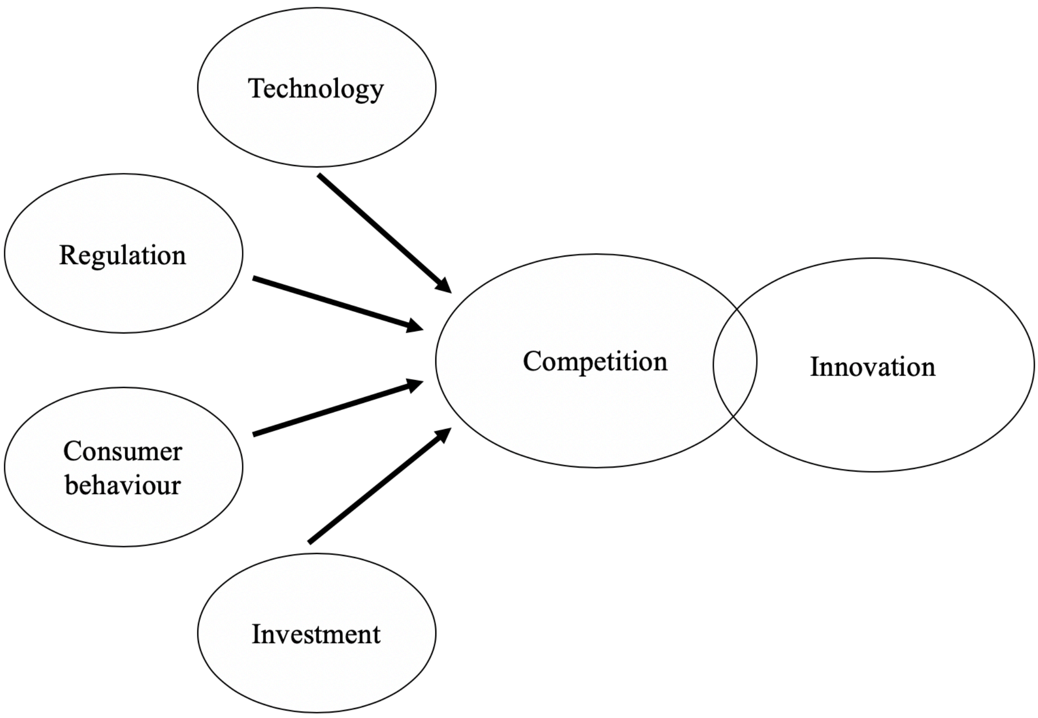

Figure 2 The driving forces of competition and innovation in the financial markets.

2.2 Regulatory environment

The function of the financial markets, and therefore also the financial institutions, is largely built on trust. Consequently, the industry has become highly regulated and banks need to comply with a complex set of regulations in order to preserve trust. The regulation set in place is first and foremost there to minimize risk and create guidelines for processes to avoid oversight. (Dhar & Stein 2017.) Currently, banks face an increase in workload to make their customer information infrastructure compliant with PSD2. This effort consumes resources i.e. time and money and creates additional burden to banks that are already under time-pressure to implement new services that will attract and retain customers against an increasing Fintech offering. (Romanova et al. 2018.)

Historically, tighter regulation has been a stabilizing factor at the time of financial crises, whereas positive macroeconomic development has encouraged deregulation (Singleton & Verhoef 2010, Chakraborty et al. 2017). The current regulatory change in the form of PSD2 is deregulating and unifying the payments industry in an attempt to decrease systemic risk in the post-crisis financial markets. Additionally, the more open regulatory environment aims to expand the field of actors in the financial markets, which would bring increased stability via diversification. The EU thus hopes to dilute the concentration of banking activities and introduce more competition and transparency to the financial markets (European Commission 2018, Haubrich 2018).

In the past, financial market incumbents have been burdened, but also protected by the regulation they have faced. Before the new regulation, Fintechs have faced heavy compliance requirements compared to company size and resources. Thus, the administrative costs (sunk costs) related to entering a market, have acted as barriers to inhibit the increase of competition in the European financial markets by effectively keeping smaller competitors out (Bátiz-Lazo 2004). Buch et al. (2013) note that national differences in regulation and culture also act as barriers for companies looking to scale internationally. This regulatory heterogeneity is being in part decreased by the new directive to also encourage internationalization (European Commission 2018).

While banks are being required to open customer data access to TPPs, they are also being required to specify their usage of sensitive data more carefully than ever by the General Data Protection Regulation (GDPR). GDPR provides banks a significant compliance task to alter existing processes and minimize legal and regulatory risk. Besides regulation, macroeconomic factors such as low interest rates and the ongoing overall digitalization process of existing services are adding to the incumbents' pressures. (Döderlein 2018.) Consequently, together with existing macroeconomic pressures, GDPR and PSD2 are creating a challenging regulatory environment for banks by simultaneously calling for an open access to data and increased protection of data (Döderlein 2018, Jackson 2018).

2.2.1 Payment Service Directive 2 (PSD2)

The first discussions arising from the EU commission about implementing a directive to further deregulate payments in the form of PSD2 took place already in 2013 (Haubrich 2018). This signalled not only the European financial markets, but other markets globally as well, that a significant move towards a more open financial market model could be implemented to drive competition, innovation and consumer benefit. The discussions triggered actions in markets like Singapore and India to start similar movements towards open banking (Brodsky & Oakes 2017, Döderlein 2018).

PSD2 was preceded by PSD1, which was implemented in Europe starting from December 2007 and stepped fully into force by November 2009. The first directive imposed similarity in requirements and need for transparency for all payment providers. The directive also enabled non-banks to offer certain payment services to customers. (Cortet et al. 2016, Romanova et al. 2018.) Since January 13, 2018 the EU has started the implementation of Payment Service Directive 2, which replaces PSD1 and further pursues to integrate the financial markets in Europe (Döderlein 2018).

Changes put into effect by PSD2 will enable third-party companies to offer financial services to consumers by requiring that financial institutions share their client data to TPPs to a certain extent. Notably, TPPs will API access to data that enables them to act as account information service providers (AISPs) and payment initiation service providers (PISPs). All access to the customer information is controlled by the end customer and TPPs will only be able to access the information through the APIs based on customer consent. With consent, TPPs will be able access customers' current and savings accounts from different banks, aggregate account information into a single platform and initiate payments on behalf of the customers. (Haubrich 2018, Jackson 2018.) Consequently, PSD2 is estimated to have a disruptive effect on the financial industry in Europe by increasing competition and thus encouraging innovation and more cost-effective services (Gomber et al. 2018, Jackson 2018, Romanova et al. 2018).

Although the implementation of PSD2 is already in progress, arguably the most important step in the process is yet to be taken. The bank APIs enabling TPP access have to be compliant with the regulatory technical standards (RTS) in September 2019 at the latest. This is likely to be the point when European financial markets start to see the early effects of PSD2 come into realization. (Döderlein 2018.)

While PSD2 is in fact a directive to deregulate the financial services market in the EU, it increases the regulatory burden of financial institutions. PSD2 is imposing new responsibilities and also reputation risks for banks related to data security, data protection and legal issues (Romanova et al. 2018). The implication of opening especially client data pathways to third party companies is translated to a large amount of work for banks to ensure the safety of the data that leaves outside the bank. The provision of client data outside banks' own systems and services also creates issues related to placing the responsibility of data misuse. Thus, banks need to expend resources on establishing risk management frameworks for sharing client data and handling the risk of data abuse. (Jackson 2018, Romanova et al. 2018.)

2.3 Open banking

In Europe, the implementation of the PSD2 directive has become almost synonymous for open banking (Döderlein 2018). There is, however, some differentiation to be made between the two terms: PSD2 is an EU-specific regulatory step, which acts as a catalyst for the financial market's movement towards open banking. Open banking, in turn, describes the general global development of API-based banking and a market mixture of incumbent and fintech companies (Brodsky & Oakes 2017). In practise, open banking refers to an open financial market, where third-party companies have the ability to offer financial services to customers without having to establish themselves as highly regulated financial institutions (Cortet et al. 2016). Open banking as a term originated from the UK where the Competition and Markets Authority (CMA) took a proactive step in opening the financial markets in light of news about the upcoming

PSD2 regulation. CMA ruled that since the beginning of 2018, nine of United Kingdom's biggest banks must have ready account APIs for third-party providers to access. The ruling, named CMA9, was based on CMA's findings on poor competitive situation in the financial market, with four of the largest banks controlling 70% of the market without much change to market shares in the past 10 years. The findings showed that incumbent banks had the ability to overcharge on their services whereas customers had little possibility to impose competitive pressure on banks in return. (Basso et al. 2018.) The term open banking has since been adopted to describe similar market developments in Europe and to certain extent in the rest of the world as well, even though this development is in its early days. For the intents and purposes of this research, the term open banking will refer to the overall market shift towards API based banking, and developments concerning only Europe, will be specified separately.

Along with PSD2, open banking and a rising number of Fintech companies, the financial markets have started to witness a development towards platform technologies. Platform technologies can be defined as open and easily accessible value-creating operational frameworks that offer network effects to its different independent participants (Dhar & Stein 2017, Van Alstyne & Parker 2017). Platform technologies allow different service providers to distribute their services to customers in standardized processes, including also privacy, regulation and legal considerations. For example, Apple's App Store is a platform that distributes independent third-party services and ensures a standard of quality for all services or apps. Moreover, platforms can provide venues for partnership between different actors e.g. banks and Fintechs. Platforms often offer convenience to customers by providing a unified user interface from which different service points can be used, and to service providers by automating and standardizing the onboarding of their services to the platform. (Dhar & Stein 2017.)

Besides Europe, other financial markets globally e.g. USA, China, India and Singapore are constantly increasing efforts towards a more open interplay between banks and Fintechs in payments and banking services (Brodsky & Oakes 2017, Döderlein 2018). Furthermore, Singapore has been proactive to push open banking forward since 2016 with regulation from the Monetary Authority of Singapore (MAS) to drive forward an API-based model similarly to the EU (Gilder 2018).

2.3.1 PSD2 and open banking effects on incumbents

Previously, regulatory requirements in matters such as monetary reserves, ICT systems and data protection, have made it very difficult for new smaller companies to enter the financial market (Zalan & Toufaily 2017). Because this scale of regulatory compliance requires vast resources, it has protected large financial institutions from new competitors and let the market incumbents have a relatively safe position in the market (Döderlein 2018).

Large size and a secure position in the value chain has also provided financial institutions some common advantages such as the ability to offer a wide range of products and services and to maintain competitive prices (Kasasbeh et. al 2017). As the product offering of traditional financial institutions has been quite vast, they have benefitted from cross-selling opportunities and reward systems to create lock-in effects. Because of the wide array of day-to-day services banks offer, they are able to achieve contact with a large number of customers. For banks, customers are not only a source of income, but also a source of data, which helps banks better personalize, cross-sell and develop existing and new services (Cortet et al. 2016). With open banking, the competition for customer data will increase and the importance of maintaining interaction with the customer and monetizing the relationship grows even more for banks (Döderlein 2018).

The development of the European open banking environment begins with payments. Currently payments and balance checking are the most frequent transactions that customers have with their banks and are thus most intensive sources for customers data. (Cortet et al. 2016, Döderlein 2018.) Traditionally banks have been able to rely on a comfortable position as the main payment provider for consumers and throughout the evolution of payments from cash to card to contactless. However, in the face of PSD2 and truly mobile payments, TPP solutions are challenging the dominant position of banks (Anyfantaki 2016, Döderlein 2018). Because of the high-intensity nature of payments, they are an important customer interaction point for banks and something that TPPs are likely to go after due to the high amount of customer data that is attached. (Döderlein 2018.)

For a long time, the financial industry has been characterized by a slow speed of innovation (Basso et al. 2018). However, with the examples provided by user experience centric companies such as Spotify, Netflix, Amazon and Apple, consumers have come to expect more from banks as well. With PSD2 the banking markets open up to Fintechs who have noticed value in catering to banking customers that have demand for better or more niche services than the banks can currently offer. (Döderlein 2018.)

Banks can have different strategies for approaching open banking and maintaining competitiveness in the face of having to share their customer data. Inherently, the effort of setting up compliant information systems and building APIs on top of legacy systems will accrue costs for banks and guarantee them no direct upside (Brodsky & Oakes 2017). To offset this poor cost-to-benefit ratio of mere compliance, banks can choose to actively compete or seek partnerships with Fintechs and expand their own service offering (Cortet et al. 2016).

As a result of PSD2, also banks are enabled to act as third-party service providers on top of other incumbents. Banks will thus have the ability to aggregate other European banks' customer account information and initiate payments (Cortet et al. 2016). Consequently, competition is increasing from both bank and Fintech fronts and market participants are being pushed to innovate continuously to be a relevant option to both new and existing customers. If banks fail to innovate and adapt to open banking, they are at a risk of becoming data pipelines for Fintechs and other incumbents (Cortet et al. 2016).

3 EMERGENCE OF FINTECHS

This chapter continues the discussion started already in the previous chapters about Fintechs and their effect on the financial market. To gain an understanding of how Fintechs operate and why their impact on the financial markets is regarded to be so substantial, a closer understanding of Fintech characteristics is needed. Furthermore, this chapter creates the foundation for inspecting bank and Fintech relationships in the subsequent chapters.

3.1 Fintech characteristics

Fintech is a term closely knit to the concept of financial innovation. Fintechs are thus seen as companies that enable the introduction and adoption of innovative solutions across the financial industry. (Bratasanu 2017.) Fintech as a phenomenon has born essentially out of the possibilities provided by modern technology. Technology startups have entered the financial industry in the first place because they have seen an opportunity in the technological possibilities in the market and the inability for traditional banks to realize these possibilities fast enough due to the heavy regulation that is imposed upon them. Consequently, new Fintechs are born at an increasing pace to fill the gap between the technological possibilities and the adoption lag that banks are experiencing. (Buchak et al. 2018.)

Fintechs have harnessed technologies such as artificial intelligence, machine learning, blockchain and natural language processing to offer often highly automated services to customers in an omni-digital environment (Romanova et al. 2018). The use of recent technology enables Fintechs to provide services more cost efficiently than banks by automating labour-intensive tasks and to operate completely online i.e. without having to establish physical branches (Pollari 2016, Zalan & Toufaily 2017).

An increasing part of the new and innovative solutions introduced to consumers are produced by Fintech companies (Anyfantaki 2016). Fintechs utilize their technical expertise to create innovative services and make themselves attractive to customers by emphasizing factors such as easy onboarding, fast service, better functionality, simple user experience and serving previously underserved, or totally new, customer segments (Manasov & Ivanovska 2018, Oney 2018). Fintechs are often also focused on a niche consumer need or problem within the market and developing more specialized, customer-centric solutions for these problems (Drasch et al. 2018, Döderlein 2018). Consequently, Fintechs create more convenience for the customer. Buchak et al. (2018) note that one reason, why Fintechs succeed in providing convenience to customers is the efficient use of data to personalize offerings and to require less input from the customer.

Fintechs generate both incremental and disruptive innovations to the financial industry. Incremental innovation leads to increased efficiency and performance of existing processes whereas disruptive changes that create completely new services or processes, can initially suffer from under-performing, but eventually cause fundamental impact. (Puschmann 2017.) A relevant example of a financial service segment that has seen both incremental and disruptive changes from Fintechs, is consumer lending. By digitizing and automating loan applications to completely online processes, Fintechs have generated an incremental change by increasing efficiency and decreasing handling time. A more disruptive change to loans has been brought on by the use of AI and machine learning in what is called alternative credit decisioning (ACD) (Gomber et al. 2018). With ACD, lenders can form a credit score to customers based on more comprehensive data than traditional models and thus provide loans to customers that wouldn't otherwise be approved for one. In effect, use of AI and machine learning in ACD processes, has enabled previously unserved or underserved consumers to become a viable customer segment for lenders. (Buchak et al. 2018.)

With the introduction of PSD2 in Europe, payment initiation and access to account information give a multitude of possibilities for innovation. Consequently, Fintechs have begun to emerge in many different verticals of the financial industry such as payments, retail and business banking, insurances, lending, wealth management, real-estate and mortgages (Cortet et al. 2016, Vasiljeva & Lukanova 2016). Fintechs can offer services direct-to-consumer (D2C) i.e. create the service and act as the consumer-facing service provider or focus on a business-to-business (B2B) service model. Many Fintechs operate in a B2B model by acting as technology providers for other businesses who then may act as the consumer-facing channel and distribute the service. For example, a model where a bank distributes a Fintech service to consumers under the banks' own user interface and distribution channels, is called white labelling. Some B2B Fintechs also focus on providing so called middleware solutions that are essentially innovative services or tools for people within an organization e.g. an AI-based tool for private banking advisors that evaluates customers' stock portfolios and suggests adjustments based on customers' risk profiles. (Puschmann 2017.)

Many of the Fintech services are directed at technologically savvy young adults, who look for convenience and adopt new services quickly (Manasov & Ivanovska 2018). The solutions facilitated by PSD2 specifically are related to payment initiation services (PIS) or customer account information services (AIS) in innovative ways (Cortet et al. 2016, Brodsky & Oakes 2017). The service concepts can be simple such as sharing expenses with friends (Venmo) or quite complex such as a completely digital neo-bank, with cards, payments and savings features (Revolut). Other Fintech services can include e.g. aggregation of customers' financials across multiple banks to a single service (Tink), automated savings and investment solutions (Acorns), financial robo-advisory (Betterment), goal and theme-oriented savings (Qapital), on-demand insurances (Trōv), and much more.

Fintechs have the possibility to offer their innovative services to bank customers without having to establish any banking operations of their own, which can relieve them of the regulatory burden of actually handling peoples' assets (Cortet et al. 2016). The incentive for bank customers to share their data outside their bank, is that the solutions provided by Fintechs can be cheaper, more convenient and better suited to their needs (Gomber et al. 2018).

Acting as a financial service provider often requires licensing, which is issued by the national regulator (Oney 2018). Incumbent banks usually operate under a full banking license allowing them to provide services such as savings, lending, insurance, and investing among others. Fintechs, however, often operate in niches and thus seldom require full banking licenses, but rather specific licensing regarding their core business. (Drasch et al. 2018.) For example, a peer-to-peer payment provider such as the Swedish Betalo, can work under a simple payments license.

3.2 Fintech effects on the financial industry

Most commonly the Fintech term is used to describe new innovative growth companies in the financial industry, but this doesn't mean traditional financial institutions couldn't provide services that can be described as Fintech (Puschmann 2017). In fact, the increasing competition is pushing also traditional banks to create Fintech solutions to retain their customers. Traditional financial institutions such as the Royal Bank of Scotland (RBS) and the Israeli bank Leumi have pushed out their own Fintech services Mettle and Pepper respectively (Peyton 2018). With these solutions RBS and Leumi are bundling together similar features as their Fintech neo-bank competitors into a single digital banking service as a response to changing customer needs.

Gomber et al. (2018) call the emergence of Fintechs a 'Fintech Revolution', which is laid on a foundation of three supporting pillars. The first pillar is comprised by the vast amounts of available capital to fund Fintech ventures. As Fintech is an emerging and disruptive phenomenon in the markets, investors are often happy to allocate capital to these ventures in the hopes of high profits. The second pillar is the innovation introduced in new solutions by Fintechs, which the banks have a difficulty or inability to develop or replicate. These new services often cater to a specific customer need directly and create great customer value. Third, Fintechs have created innovative ways to process information and position themselves as an intermediary between banks and customers, to take a path of less regulatory burden and thus greater agility in service development.

With the introduction of more and more Fintech companies fuelled by open banking, Fintechs are effectively creating opportunities for building financial platforms by flooding the market with novel services and features. (Dhar & Stein 2017.) As the most valuable asset of any platform is its network of produces and consumers, the increased number of Fintechs and niche services are creating new value potential for financial platforms (Van Alstyne & Parker 2017). The increased momentum behind financial platform creation can thus be an exciting opportunity for creating positive network effects for both banks and Fintechs (Zalan & Toufaily 2017).

PSD2 aims to increase competition by enabling Fintechs to easily latch onto different banks within the EU. Consequently, Fintechs are often able to be born global i.e. operate internationally soon from inception. From the EU point of view, Fintechs' ability to increase competition in multiple different national markets simultaneously has a positive effect on driving innovation and converging the different national markets to a similar direction. (European Commission 2018.)

National governments have also realized the vast economic potential that Fintechs possess. Some governments are encouraging the inclusion of new entrants to the markets by lowering thresholds for operating licenses such as payments and insurance licenses and as a result, are seeing more Fintechs enter the country (Pollari & Ruddenklau 2019). For example, Lithuania has adopted a forward-looking policy of working together with Fintechs that require licenses and is making the process of license acquisition easily approachable, fast and efficient. The operating licenses required by certain Fintechs are controlled by the national financial supervisory authorities. In Lithuania, the country's central bank also operates as the financial supervisor, which has led to synergies in fostering the national financial growth opportunities in Fintech and streamlining the license issuing process. By obtaining specific operating licenses, Fintechs are essentially becoming financial companies that have the possibility to operate like banks in certain service areas, but with a significantly lighter regulatory burden (Vasiljeva & Lukanova 2016).

Thus far, one the most visible disruptions in the European financial markets has been the success of neo-banks such as the UK company Revolut and the German digital bank N26. These companies have been showcased in the media and have brought Fintech under more widespread attention in the public with aggressive growth strategies both in their international expansion and in building their service portfolios (Pollari & Ruddenklau 2019). Neo-banks have characterized the capabilities and potential of Fintechs by demonstrating that they are able to create a whole new type of fully-licensed bank based on a completely digital model. Consequently, neo-banks like N26 and Revolut have become poster images for the Fintech revolution.

The Fintech phenomenon has already been able to make a significant impact on the financial industry through fast growth. The amount of venture funding in Fintech has increased from 600 million in 2013 to 4,6 billion USD in 2018 in the Americas, and from 100 million to 1,2 billion USD in Europe during the same period. Furthermore, the trend of investment appears to be continuing a path of growth, helped by the increase in Fintech activity due to PSD2. (Pollari & Ruddenklau 2019.) The rapid growth of the whole Fintech industry has resulted into some individual fast-scaling Fintechs achieving high levels of funding to grow their business even further. Examples of such Fintechs are the Swedish payments company Klarna, which is currently funded by 680 million, and valued at 2,5 billion USD, and the US-based credit scoring Fintech giant CreditKarma, which is funded by 868 million and valued at 3,5 billion USD (Crunchbase 2019). Startups that have achieved an extraordinarily high valuation of 1 billion USD or more, are called unicorns (Pollari & Ruddenklau 2019).

In addition to the Fintech unicorns, Big Tech companies such as Google, Amazon, Facebook and Apple (GAFA) are also looking into the financial markets and creating their own solutions (Döderlein 2018, Gomber et al. 2018). For example, Apple recently announced the release of its own credit card ‘Apple Card’ and adjacent personal finance management features within Apple Wallet (Apple 2019). The Fintech and Big Tech giants can establish themselves as formidable players in the financial industry and possibly prove to be a considerable source of competition for the incumbents (Döderlein 2018).

4 BANK AND FINTECH RELATIONSHIP

This chapter takes a closer look at the relationship between banks and Fintechs from a competitive as well as a collaborative aspect. First, the competitive advantages of both banks and Fintechs arising from previous research are reviewed, and secondly, two different theories on collaboration, namely open innovation and competitive collaboration, are discussed and applied to the bank and Fintech context. The review of competitive advantages as well as bank and Fintech collaboration creates a basis for the empirical part of the study in the following chapters.

4.1 Bank and Fintech competitive dynamics

Kasasbeh et al. (2017) note that firm competitiveness stems from factors such as innovative product development, responsiveness to customer needs, core competences and cost effectiveness. Notably, these competitive dimensions can also be found at the core of bank and Fintech competitive relationship as consumers look for financial products and services that increase convenience.

Incumbent banks are increasingly taking the role of diversified financial institutions by offering a multitude of services related to daily banking, insurances, mortgages and wealth management. In contrast, Fintech companies are developing innovative services in very specific areas of the financial services space. (Cortet et al 2016.) Fintech solutions often find a niche for themselves by answering specific customer needs with the means of the latest technology such as AI and machine learning. For example, personal finance management (PFM) has seen many innovative, user friendly solutions developed to help customers take better control over their finances e.g. the US-based Fintech Mint, which aggregates customer income and expenses and gives personalized advice on saving money (Gomber et al. 2018). By assessing gaps in functionality and convenience of existing solutions, Fintechs have the ability to gain competitive advantage by offering better alternatives to the banks' offering (Cortet et al. 2016, Zalan & Toufaily 2017).

Cortet et al. (2016) note that because of the enormous amount of Fintechs that have emerged in recent years, it has become the Fintechs that are dictating development of new services and technologies in the financial industry instead of banks. They go on to compare Fintech companies to a sandblasting for traditional banks: “One grain of sand does not have much impact, but many of them targeting a specific point at high velocity cuts right through any material.” (Cortet et al. 2016: 16). What Cortet et al. (2016) illustrate with this comparison is that because of the high rate of innovation and the sheer volume of Fintech companies emerging in the markets, banks are facing a challenge to maintain competitive levels of innovation in their service development.

Regardless of increasing competitive pressure from the Fintechs, incumbents still hold multiple advantages over Fintechs by having an established trust with clients (Dhar & Stein 2017), an abundance in customer data (Brodsky & Oakes 2017), and extensive experience in the market (Zalan & Toufaily 2017). Banks also have a broad offering of services and products that gives them the possibility of cross-selling and deepening customer relationships further (Döderlein 2018, Romanova et al. 2018). Furthermore, banks benefit from existing processes such as risk management, legal, and data security (Bratasanu 2017).

On the other hand, previous research shows, that Fintechs have multiple advantages over banks regarding technological capabilities, speed and customizability. Many traditional banks have built their technology on legacy systems that are becoming outdated, whereas Fintechs are often operating on a more modern and modifiable technological architecture. (Zalan & Toufaily 2017.) With new technology based on AI and machine learning, Fintechs also have an upper hand in more efficient data analysis and optimization (Bratasanu 2017). Furthermore, while most banks operate nationally or at a limited geographical reach, Fintechs often have the ability to be introduce their services internationally right from the beginning. If Fintechs receive enough traction, they have the opportunity to quickly expand their service portfolio (Cortet et al. 2016). This means that the expansion of Fintechs can be much more rapid than that of traditional banks, as can be seen with companies like Klarna and Revolut.

Media and research have largely focused on the rising number of small to medium-sized Fintechs as the source increasing competition in the markets. However, as noted in the previous chapter, some mature first-mover Fintechs are at a stage of growth, where they can alone start to pose a serious source of competition to incumbents.

Additionally, Big Tech companies such as Apple and Amazon pose a competitive threat to banks by developing their own financial service initiatives (Gomber et al. 2018). These Fintechs and Big Techs are operating at a scale, which makes it difficult to for banks to directly compete with them and as a result, some financial institutions have opted for the strategy of collaboration with these companies. For example, UK-based Barclays Bank has entered into a partnership with the Chinese Fintech giant Ant Financial to enable their payment solution Alipay in UK retail stores (Barclaycard 2019). Also, the aforementioned Apple Card is a product of collaboration between Apple and Goldman Sachs, where Goldman Sachs acts as the issuer of the credit card and Apple as the consumer-facing platform (Apple 2019). While it seems that financial industry incumbents are aware of the importance of reacting to the Fintech phenomenon, the monetary Fintech investment and collaboration efforts made by banks, have still dragged behind compared to non-bank service providers (Cortet et al. 2016).

Previous research doesn't derive any conclusions on either banks or Fintechs being in a superior position to win the markets. Consequently, it seems likely that banks and Fintechs will meet a dynamic playing field where the bank and Fintech solutions can even be offered in collaboration through the same platform. In the empirical part of this thesis, the competitive dynamics between banks and Fintechs are inspected more closely from both parties' viewpoints.

4.2 Bank and Fintech collaboration

With an increasing number of Fintechs providing alternative solutions to consumers, banks face a decreased ability to develop competitive solutions across different service segments. Instead, banks could be better off shifting their strategy to focus increasingly on customer needs, improving the quality of existing services and developing new services in collaboration with Fintech companies (Romanova et al. 2018).

Romanova et al. (2018) note that besides providing challenges to banks, the transition to open banking also presents a big opportunity through Fintech cooperation. By collaborating with Fintechs, banks have the opportunity to provide new services with enhanced user experience to their customers with fast implementation and improved conversion, whereas Fintechs can benefit from the customer-base, reach, and market knowledge of banks as well as the more sophisticated compliance and risk procedures that are trusted by customers (Cortet et al. 2016).

Even though Fintechs have established a position in the financial markets as spearheads for innovation and technological capability, they are still subject to barriers related to regulation (Dhar & Stein 2017). Regardless of the ongoing integration process in Europe, country-specific differences and characteristics still exist in regulatory policies hindering Fintech market entry (Zalan & Toufaily 2017). Especially as Fintechs are usually seeking high scalability internationally, complying to differing regulations of various countries can become a resource consuming effort. Consequently, Fintechs can realize benefits in partnering with established market incumbents who are specialized in the local market and are already compliant with the regulation (Dhar & Stein 2017).

Bank and Fintech collaboration is becoming increasingly common in the financial markets as many banks engage in Fintech partnerships to boost innovation (Zalan & Toufaily 2017). The collaboration can take multiple different forms depending on the characteristics and needs of both parties. In their research, Drasch et al. (2018) studied 136 bank and Fintech cooperation cases and classified the cooperation models into four alternatives consisting of alliances, joint ventures, acquisitions and incubation. They found alliances to be by far the most common model, which banks used to gain access to new innovative technologies. Some of the alliances also included the element of investment into the Fintech. (Drasch et al 2018.) Additionally, Döderlein (2018) notes that banks and Fintechs engage in collaboration activities also through partnership programs, pitching competitions and accelerators. He concludes that while these initiatives are a good way for banks to learn, individual partnerships are not a sufficient response to the more fundamental change towards open banking.

As mentioned previously, one exciting medium for collaboration between banks and Fintechs, from an open banking perspective, is the development of digital platforms. Platformization of financial services can offer a way for Fintechs to replace or supplement different services provided through banks' digital platforms, such as mobile banking applications (Jackson 2018). For Fintechs, banks' existing platforms can offer an enticing avenue to a large amount of customers via a back-end integration alone. Moreover, because some Fintechs are focused on solving very niche customer problems, their solutions may not be as viable or as successful as standalone products as they could be if offered through platforms with other complementing services. (Dhar & Stein 2017.)

Wonglimpiyarat (2017), gathered data on the diffusion of Fintech innovation within the financial markets and during her study recognized motives for bank and Fintech partnerships. Wonglimpiyarat (2017) states that Fintechs can enter into collaboration to extend the reach of their service to new markets or new customer segments through the banks, whereas banks can benefit from collaboration by extending the scope of their own services to better serve new customers. The empirical part of this thesis aims to achieve a better understanding about the justifications and reasoning behind bank and Fintech partnership and the possible benefits and drawbacks thereof.

4.2.1 Open innovation

The importance of continuous innovation is increasing as open banking creates competitive pressures in the financial industry. Innovation has thus established itself as an important resource in the financial industry for both incumbents and Fintechs. Consequently, the industry players have started to shift towards applying open innovation concepts to create new ideas and improve existing solutions.

The concept of open innovation suggests that companies will benefit from using both internal and external ideas and pathways to market. Essentially, open innovation enables companies to combine internal and external ideas to create a better solution together than they could have built by themselves. With open innovation banks and Fintechs can facilitate the trading of skills, knowledge and experience with other parties for mutual benefit and added value. Open innovation is mostly a strategic choice in the company innovation culture, and it can materialize in the form of e.g. a workshop, accelerator, partnership program or joint venture that is designed to share knowledge between participants. (Bogers et al. 2018.)

Open innovation can be divided into outside-in and inside-out innovation. With outside-in innovation, a company utilizes external ideas for its own development, for example in the form of a hackathons or partnership programs. Inside-out innovation means companies sharing internal innovation to other companies or organizations e.g. when a service concept has been tried out internally, but eventually discontinued. Inside-out innovation incentivizes sharing of ideas to partners, the public, or even competitors with the notion that the culture of sharing knowledge will eventually benefit all stakeholders. (Gianiodis et al. 2014.)

Open innovation can occur in one-off activities or over a long period of time, even evolving into a partnership between parties. Partnerships can enable joint innovation between parties at a deeper, more confidential level. For example, when engaging in a partnership, banks can offer more data to be at a Fintech's disposal via different APIs to facilitate the joint development of services (Cortet et al. 2016).

Even though innovation activities are important to companies, innovation processes can seldom guarantee results. Innovation is by nature ambiguous and uncontrollable to an extent and it is important to note that the return on investment of innovation activities is unpredictable. (Bogers et al. 2018.) However, Gianiodis et al. (2014) show that collaborative open innovation efforts can lead to increased performance, accelerated organizational change, lower costs, and ultimately competitive advantage. Consequently, open innovation should be regarded as an investment, which requires planning and preparations to build the optimal framework of participants and activities to foster open innovation.

4.2.2 Competitive collaboration

Incumbents and new entrants can often operate in the same industry as competitors, but still benefit from collaboration (Cozzolino & Rothaermel 2018). Similar to open innovation, competitive collaboration or coopetition, exists due to a mutual benefit from complementary knowledge, skills, services and products, which ultimately enables the companies involved to achieve better results than operating alone. Whereas open innovation provides a more general framework of sharing innovation with third parties, competitive collaboration offers a more specific viewpoint on sourcing innovation from outside the organization by cooperating with parties in the same vertical market. For companies working in the same vertical, even in a competitive capacity, collaboration can lead to e.g. tapping into expert resources, realizing new market segments or achieving economies of scale. Consequently, collaborating with other companies with distinctive experience and know-how can warrant access to markets, which would be otherwise unreasonably expensive to enter due to lack of information. (Bátiz-Lazo 2004.)

Competitive collaboration can also exist for the simple reason of 'if we won't, then somebody else will'. To elaborate, the previously mentioned case of SME neo-bank initiative Mettle by the Royal Bank of Scotland can be inspected: Mettle was, in fact, developed in part by another UK neo-bank Starling, even though Mettle's service offering competes with that of Starling's (Peyton 2018). Collaboration in this case might seem counter-intuitive, but had Starling declined the opportunity, it is highly unlikely that RBS' development of Mettle would have discontinued as a consequence. Instead, RBS would have simply sourced the technology from another provider. By deciding to work RBS, Starling not only gained a significant B2B client, but they also gained from shared knowledge on how an incumbent such as RBS develops new services.

Fintechs and banks seldom work in exclusive contracts, which creates the foundation for competitive collaboration. Fintechs especially often collaborate with many competing banks on similar services or products, thus acting as a competitor to its collaborative partners (Bátiz-Lazo 2004). The nature of collaborative competition suggests, that competitive advantages are sought by both banks and Fintechs by entering into partnerships. Fintechs as new entrants compete against other Fintechs by partnering with the most prestigious banks to gain traction and scale before others, whereas banks partner with the most promising Fintechs to offer more innovative services than other banks. Consequently, Fintechs and banks form groups that compete with other Fintech and bank partnership formations and it is common for these competing groups to be interconnected via one or more parties. (Cozzolino & Rothaermel 2018.)

Furthermore, collaboration can be an enticing option for companies working in competitive but very geographically segmented markets such as banking (Bátiz-Lazo 2004). Currently, the banking markets are starting to include a multitude of Fintechs that can eat away traditional banks' market share. Collaboration with these Fintechs can be imperative to incumbents that do not want to get pushed out of the competition in financial services spearheaded by the Payment Services Directive 2 (PSD2).

5 RESEARCH METHODOLOGY

This research is a qualitative case study comprised of a theoretical and an empirical part. The first four chapters of this study encompass the theoretical part of this thesis, which is a literature review into existing research about the topic. The literature review covers the essential topics to the research and thus provides a basic knowledge about the subject matter. The empirical part of the thesis, which will be covered in the following chapters, is comprised of a qualitative case study and analysis of the data. The chosen method for data collection is semi-structured theme-based interviews conducted with both Fintech c-level executives and open banking experts from a large Finnish bank. The decision to execute the research as a qualitative case study stems from the newness and complexity of the subject matter and the consequent lack of quantitative data to analyse. Furthermore, even though quantitative data is inherently more accurate, qualitative data is superior when studying complicated matters, which require interpretation, assessment and evaluation of different concepts (Walliman 2011: 73).

The research is executed as case study to look at a wide-spread and complex phenomenon in the constraints of limited time and resources (Bennett 2004). The case companies chosen are a large Finnish financial institution and six international Fintech companies that it has engaged in partnership activities on some level. The chosen companies were selected to provide a comprehensive view on open banking and bank and Fintech partnerships based on the respective expertise of each interviewee. Furthermore, the interview questions were not limited to the activities between the chosen bank and Fintechs, but rather the overall understanding and experiences of open banking and partnerships the interviewees had accumulated during their respective careers.

All together 3 experts from banking and 6 experts from the Fintech side participated in the study. The respondents from the bank side are stationed in Finland exclusively, whereas the Fintechs are from the UK (two companies), Sweden, USA, Canada, and Singapore. The geographical spread of respondents provided a diverse set of expertise on bank and fintech relationships worldwide. While companies from the UK had the most experience with open banking due to an early implementation at a national level, the other respondents were able to give a comprehensive view on how open banking practices are developing internationally and how the current changes in the EU affect their respective companies. It is important to note that three of the six interviewed Fintechs are based in countries, where PSD2 will be directly enforced (UK and Sweden), whereas the other three are operating in countries (USA, Canada and Singapore) where similar open banking developments are starting to occur, but where PSD2 is not implemented. All of the companies interviewed were looking for opportunities in Europe, including partnership opportunities with the case company bank. Consequently, each of the respondents has developed a view on bank and Fintech relationship and the value of collaboration in the European context.

5.1 Data collection

This thesis utilizes different sources of data for the theoretical part and the empirical parts. For collecting data for the theoretical part's literature review, academic databases such as EBSCO, ProQuest and Google Scholar were used to gather peer reviewed material on the subject matter. Some non-academic sources from consultancy houses such as KPMG, McKinsey and Ernst & Young have also been utilized as the sources are generally trusted actors in the financial consultancy field. Crunchbase was used as a database to find the latest funding and valuation information on certain companies. Additionally, internet sources from Apple, European Commission and BankingTech were used to reference specific information. Important keywords for searching data included: open banking, PSD2, Fintech, API, bank and Fintech collaboration, innovation, financial markets, and platforms.

For the collection of empirical data, the chosen method was interviewing. Collecting data via interviews versus e.g. a questionnaire is a more suitable option especially in terms of flexibility and openness of responses and the ability to dive deeper into the subject matter with open format questions. Interviews can be divided into structured, unstructured and semi-structured interviews. Structured interviews minimize the role of the interviewer with a standardized set of questions, while conversely, the unstructured interview can have a topic or question guideline but is reliant on the interviewer developing open conversation during the interview. The semi-structured interview settles in between of the other two interview types containing both structured and unstructured parts. (Walliman 2011: 99.) An interview is semi-structured when it has an outline of topics and a set of basic supporting questions to guide the conversation but is designed in a way that it allows for deviation and derivative questions about the subject. Semi-structured interviews help interviewers maintain some control over the direction of the discussion but allows interviewees to address topics in a conversational and informal setting. This approach enables the interviewees to address the subject more freely and discover new ideas or associations based on the conversation between the interviewer and the interviewee. (Barriball & While 1994, Eriksson & Kovalainen 2018.) Semi-structured interviews are also built to include more open-ended questions compared to structured interviews or questionnaires and thus are able to provide a more in-depth understanding of the subject matter from the interviewees (Barriball & While 1994, Walliman 2011: 98, Eriksson & Kovalainen 2018).

The semi-structured interview questions were differentiated for the two groups of interviewees: bank representatives and Fintech representatives. Appendices 1 and 2 show the interview question sets for both groups. The structure of the question sets was held as identical as possible, only changing wording according to the interviewee group so that the bank group received questions directed at banks, and the Fintech group received questions directed to Fintechs. Question 6 is the only question that was differentiated more than the others to receive a slightly different meaning for both groups around the role and effect of Fintech funding.

Majority of the interviews were conducted face-to-face, and others via telephone. All of the interviews were conducted between November 2018 and March 2019 and the interview methods and durations are listed in table 1. Face-to-face interview was preferred as it provided a natural communication setting and enabled use of visual cues and non-verbal communication to make interviewees comfortable. Telephone interviews were conducted as a secondary option due to scheduling or geographical challenges but were nonetheless well suited for conducting the semi-structured interviews. (Walliman 2011: 100.) All of the interviews were recorded and transcribed for data analysis by the author.

INTERVIEWEE	METHOD	DURATION (mm.ss)
Bank representative A	Telephone call	21.32
Bank representative B	Face-to-face	48.53
Bank representative C	Face-to-face	29.17
Fintech A	Face-to-face	34.26
Fintech B	Telephone call	53.17
Fintech C	Telephone call	19.51
Fintech D	Face-to-face	28.12
Fintech E	Face-to-face	20.05
Fintech F	Face-to-face	39.43

Table 1 Interview information.

5.2 Data analysis

Data analysis is the careful examination of data that enables researches to uncover new concepts and relationships between data. The data analysis process is not rigid or constricted, but rather a continuous process that occurs throughout the research including an interplay of structured and unstructured elements. Data analysis is a unique process that takes its shape in the interaction of gathered data and the researcher who interprets it. (Strauss & Corbin 1998: 57-71.)

The data analysis process begins immediately after the first interviews are conducted. The process of data analysis is iterative in nature and it often leads to two or more cycles of going through the data, analysing the relevant themes within the transcribed text, and further decoding the key findings within the text. For the purposes of content analysis in this research, the interviews are recorded and transcribed solely by the author. In the first phase of content analysis, the data is analysed by organizing answers under selected themes found from the interview questions. In the second phase, the texts under different headings are coded with an open coding method to uncover patterns such as key words or sentiments that arise from the text. Open coding is best suited to go through a large amount of data and iteratively conceptualize it by finding similarities and emerging concepts or dimension within the data. (Strauss & Corbin

1998: 101-121, Walliman 2011: 133.) This method follows the three data analysis flows presented by Miles and Huberman (1994: 10-12) where data is first reduced, then displayed, and lastly, conclusions are drawn from it.

The interview data is divided into four themes based on which the interview questions have also been originally formed. Division of data under themes streamlines the content analysis and also provides a structure for the following chapter on the research findings. The four themes are:

1. *The effect of PSD2 on the financial markets in Europe.*
2. *Opportunities and challenges brought to banks and Fintechs by open banking.*
3. *Competitive advantages of banks and Fintechs in the open banking environment.*
4. *Value of bank and Fintech cooperation.*

6 RESEARCH FINDINGS

This chapter examines the research findings that emerge from the interview data. Both bank and Fintech perspectives on the subjects are clearly demonstrated and explored to provide a basis for conclusions and discussion in the following chapter. The research findings are reviewed under the four themes stated in the previous chapter. First, however, a brief overview of each case company is given in order to provide context on the research participants.

6.1 Case companies

All together nine semi-structured interviews were conducted with the bank and Fintech representatives. The companies work in both business-to-business (B2B) and business-to-consumer (B2C) markets. The maturity of the Fintechs varies, but all of the participating companies have a product in the market, and they have market traction i.e. they have established customer demand. The companies and their representatives are henceforth referred to based on the list below, where also brief descriptions of the case companies are provided. For the Fintechs, the amount funding in euros (if disclosed) or the number of employees will be shown as an approximate indicator of size and scale.

The bank and bank representatives A, B and C. The case bank is one of Finland's largest financial institutions operating at multiple financial verticals including corporate and retail banking, insurance, and wealth management. The bank and its representatives were selected to participate the research due to the bank's experience in working with Fintechs and especially the expertise of representatives A, B and C on open banking related matters and Fintech collaboration.

Fintech A is a financial technology company based in the UK focusing on both business and retail customers. The company was founded in 2018 and currently has 1 million euros of funding in total.

Fintech B is also based in the UK and is a B2B service provider. The company was established in 2014 and has 1 million euros in funding.

Fintech C is a company based in Sweden, which focuses on B2B clients. The company was established in 2014 and has over 30 employees.

Fintech D is a company established in 2014 in the United States, with 6,5 million euros in funding. The company focuses on B2B customers.

Fintech E is a Canadian company founded in 2013, that focuses on both B2B and B2C clients. The company currently employs 10-20 people.

Fintech F is a Singaporean financial technology company that focuses on B2B clients. The company was founded in 2016 and has 3 million euros in funding.

All the Fintechs participating in the research have experience in working with banks and have a view on the European financial markets. Additionally, in the cases of Fintechs D, E, and F, the companies also have abundant experience from the banking industry development in their home markets outside Europe.

6.2 The effects of PSD2 on the financial markets in Europe

6.2.1 Bank perspective

When asked about the effects of PSD2, all bank representatives conclude that the regulation does not impose enormous direct short-term effects to banks or the financial markets. There are, however, arguably significant resource allocations needed in order to ensure compliance with the new regulation and to have the account information and payment initiation APIs ready in time. Bank representative A adds, that while the cost of compliance is considerable, the instructions provided by the regulator have been clear enough to mainly regard PSD2 API compliance as a technical implementation issue. The PSD2 regulation’s scope is also considered narrow enough to be unlikely to impose a disruptive change for the banks in the short-term. This is due to the fact that PSD2 enables new services to be built around customer transaction data and payments, whereas banks often operate in many different areas as well such as lending, insurance and wealth management.

The banks do a lot of other stuff that yield probably greater revenues. But yeah, the regulation is quite narrow to some extent… (Bank representative B)

Another factor downplaying the immediate effects of PSD2, according to bank representative C, is the likelihood of lag that the industry may have in adapting to the new regulation. The example set by the open banking mandate in the UK, shows, that there is likely to be a delay for the effects to fully be realized due to uncertainty, lack of readiness and asymmetrical technical capabilities of different players in the markets. In fact, all bank representatives noted that there is likely to be a delay before PSD2 effects are realized.

While PSD2 enables a variety of service types to be built around payments, bank representatives A and C regard it likely that the most significant boom will be around personal finance management (PFM) solutions. Access to transaction data and the ability to initiate payments is a prime combination for PFM service providers to e.g. aggregate customer financials via different banks' APIs under one service to give consumers a better overview and provide insights on their financial situation. PSD2 will thus be likely to strip some power from the banks in terms of ownership of the customer data and the channels that customers access the bank and initiate payments. Consequently, due to a regulatory mandated access to financial data, PSD2 also strengthens the role of Fintechs in the financial markets and makes them more viable as partnership candidates for banks.

…it also legitimizes the role of startups in the value chain working together in collaboration with banks. (Bank representative A)

PSD2 is likely to have a more significant impact on incumbents in the medium- to long-term. One key implication of the financial market change induced by PSD2 is that it will ultimately require banks to not only comply on a technical level, but also re-align their strategies. Banks have a need to adapt to the bigger change that PSD2 is triggering, which is the more fundamental trend towards a truly open banking environment and the platformization of financial services.

But beyond the technical implications for compliance, I see that there's quite a bit of, actually, other implications as well, which are far more important and costly, which are strategic, related to positioning of our service in being able to present our company and services as something that partners would like to collaborate with. And you know analysing the existing product portfolio for the future, from the point of view if there are some products that we could discontinue and outsource through partnership or vice versa, are there some products that we can resell through platforms. (Bank representative A)

The bigger underlying reason why this is relevant, is because it forces banks to think about what the future business models are going to be around and it forces banks to think about what other things could be published as APIs in order to be a player or a partner for companies going forward. So basically, how to enable their own business to be relevant in the platform economy. (Bank representative C)

Bank representatives B and C regard another long-term implication of PSD2 to be that the competitive pressure is increased by not only Fintechs, but also Big Tech companies such as Google, Amazon, Facebook and Apple (GAFA). By entering the financial markets, the Big Tech companies have the ability leverage existing customer base and product ecosystem to scale fast and create a large impact within the financial industry. Similarly, Cortet et al. (2016), Döderlein (2018), and Gomber et al. (2018) note that Big Tech will be able to have a significant effect on the competitive environment of financial markets.

All Bank representatives conclude that as an end result of PSD2, when its effects begin to unravel at a larger scale, will be customer benefit. This view is largely in line with the suggestions of previous research (Döderlein 2018, Romanova et al. 2018). Consumers will have more freedom of choice from innovative financial services at competitive prices when the competition for the consumers' attention increases. Furthermore, the competition will increase in the form of two types of Fintech entries to the open banking markets: ones that position themselves to partner with banks and provide more services to consumers via collaboration, and others who will directly compete with banks in an attempt to gain market share by introducing services directly to the consumers.

> *We will start to see a new app ecosystem emerging on top of the incumbent banks and that'll lead to, very possibly, competition about customer interest, in a way that will create a lot of value for the customer. (Bank representative A)*

Overall, the bank view on PSD2 regulation's effects is more careful in comparison to previous research's projections e.g. by Cortet et al. (2016), Döderlein (2018), and Romanova et al. (2018). Notably, the change brought by PSD2 itself isn't as disrupting as it only concerns payments and thus imposes restricted effects on banks' service portfolios. The bank representatives also see a clear distinction between PSD2 and open banking. Representative A concludes that the latter, more fundamental, change will happen regardless of regulation and will ultimately require strategic re-alignment from banks.

6.2.2 Fintech perspective

The Fintechs also state that the most apparent effect of PSD2 is the increase in competition and innovation and the subsequent consumer benefit. Due to the increase in competition, incumbents are likely to realize, that there isn't a possibility to stay competitive on all the service areas and that banks will need to open up to collaborative models with Fintechs.

> *So what I think is interesting about the PSD2 is that it is forcing to some degree innovation onto the large financial institutions and, in a world where status quo can become quite comfortable and can lead to a somewhat complacency, this has forced the banks to at least pay attention and think of the consequences of actually releasing some of their data, some of their customers' data… …And then so that's one of the big drivers of our business, which is in some way reliant on banks to not only follow the regulation, but also our strategy around partnering with banks as a route to market. It is something that PSD2 has enabled. (Fintech B)*

According to the interviewed Fintechs, adapting to PSD2 will not require much effort from them, but instead opens up new possibilities as the financial markets take a concrete step towards open banking. However, Fintech C notes that PSD2 can also increase regulatory costs for smaller companies: Fintech C predicts that it will have to carry regulation related costs for up to 20,000€ per year. In the end, both EU and non-EU-based companies see that PSD2 provides new business opportunities, as also the companies outside EU notice a concrete possibility in increasing collaboration with European financial institutions.

> *Well I think that's one of the only regulations that makes our lives easier because generally integrating into any bank is the hardest part of any startup who is hoping to collaborate or partner with banks. So, therefore, this is like a rare enabler, where the consistency or harmonization of certain APIs between even different countries' banks seems like a real nice kind of like enabler for startup and bank partnerships. (Fintech F)*

While PSD2 opens up possibilities for new companies, Fintechs A, B and F note that the directive doesn't, however, provide a golden ticket to the financial markets. Fintechs A and F highlight that even though financial startups are more lightly regulated than banks, there is still much to take into consideration when starting and scaling up a Fintech.

> *…I mean compared to other industries, you know, the barriers to start a startup in financial services is huge… …You need years of experience knowing how to navigate the system, knowing the regulatory side, the compliance side, all of it. It's a minefield. (Fintech A)*

Fintech B, in turn, points out that while PSD2 doesn't require compliance related procedures on their part, the operational workload related to the new possibilities is likely to be considerable. Fintech B refers to the likelihood that there will be variance in different banks' PSD2 APIs and how Fintechs can actually connect to them. Bank representative C also notes that, even though the regulator has provided technical specifications, there are still going to be different ways of implementing APIs across different banks in the EU. According to Fintech B, the lack of a single standard implementation will increase the workload and resource requirements of Fintechs that wish to connect with bank APIs. The inconsistency of API integration thus provides a practical and relevant barrier to the Fintechs' fast implementation and scaling opportunities.

> *…the APIs and the integrations with every single bank are subtly different and that has a massive operational overhang in terms of the costs associated with it and the difficulties and the challenges. And not only doing integrations once, but maintaining those integrations… (Fintech B)*

Overall, the Fintechs interviewed perceive the changes brought by PSD2 to be positive for their business and also perceive the change to be bigger in scale compared to the bank representatives, who see PSD2 as more of an intermediary or a catalyst for bigger change that will still take time. This finding differs from previous research (Cortet et al. 2016, Döderlein 2018, Romanova et al. 2018), which has mainly highlighted the scale and disruptive effect of PSD2 to banks.

6.3 Opportunities and challenges of open banking

6.3.1 Bank opportunities and challenges

All bank representatives note that open banking gives also banks the opportunity to utilize APIs and supplement their own services with new data and create new services via partnerships. Banks will not only be able to access other incumbents' data but can also benefit from the improvement of their own APIs and utilize and combine data in new ways across different internal divisions. Cortet et al. (2016) also note that focusing on API development can create new internal capabilities for incumbents. According to bank representative B, APIs can also act as a marketing tool for increasing bank and Fintech partnerships. In Europe, the PSD2 mandated account information and payment initiation APIs are free of charge for Fintechs to access, but good quality of the mandatory APIs can lead to Fintechs wanting also to utilize other APIs, which can be monetized by the banks. Consequently, there is an opportunity for banks to not only develop the PSD2 APIs well, but to also create APIs for other parts of the business, such as funds, stocks and savings. According to bank representatives B and C, a set of quality APIs can help banks partner with Fintechs, other incumbents, corporate clients and retailers. Cortet et al. (2016) similarly suggest, that going beyond compliance in creating APIs, can create opportunities for collaboration and API monetization.

> *…on one hand you've got compliance, just do the bare bones, get the regulator to approve your first version APIs, an ok version, and then do nothing. And on the other hand, is that you literally make every business unit or product in the bank API available and you open it up to third parties. (Bank representative B)*

While open banking does open up possibilities for banks, it also creates challenges mainly related to the cost of implementation and the increase of competition. Similar to Jackson (2018) and Romanova et al. (2018), all bank representatives raise the issue of the cost-to-benefit ratio of implementation. The banks will bear the costs of technical implementation, but due to the fact that PSD2 mandated APIs are free of charge, banks will not directly get any return on their investment. Banks are rather expending their own resources to open up data, which enables a number of Fintechs or even Big Techs to take away a part of the banks' relationship with the customer.

> *…the banks don't really have a say on whose expense is this all being done. So even though there will be new value created, the banks will not directly be benefitting from customer requesting for account related information from their infrastructure. (Bank representative A)*

According to bank representatives B and C, there will also be a challenge for banks to be fast in order to keep up and work with Fintechs. Open banking will require a new kind of agility from incumbents to be able to make executive decisions faster, because there will be more and more market participants competing for each opportunity.

> *…you do have to be kind of agile and you have to kind of level yourself and understand the kind of the premises on which you can work together, kind of fast time to market, fast movement on risk management and security policies and all that. (Bank representative C)*

6.3.2 Fintech opportunities and challenges

Similarly, to the bank representatives, Fintechs A, B, C and F emphasize that an important opportunity arising from open banking is the increased possibilities for partnerships. The overall platformization of financial services is providing a way for Fintechs to distribute their services on marketplaces built by banks, other Fintechs or Big Techs.

> *The banks can think about those Fintechs as actually an extension of themselves and innovating on top of their core infrastructure, their core user base. (Fintech B)*

Fintechs B and C state that another important opportunity of open banking is the actual increased access to data, which enables Fintechs to provide competitive financial services. With the access to data from several sources, according to Fintechs D and E, Fintechs will have improved ability to develop highly specialized niche services and target new customer segments that have previously been underserved.

Again, similarly to the bank representatives, Fintechs A, B and C emphasize that open banking will provide the challenge of increased competition. Open banking simultaneously creates the opportunities for Fintechs and also decreases the value of the opportunity by opening it up to other companies as well. Fintech B notes that there will likely be a continuous pressure for higher degrees of innovation, which corresponds to the initial objectives of the PSD2 regulation (Döderlein 2018). Fintechs D, E and F, however, who will not be directly under the PSD2 regulation, do not mention increased competition as a challenge, but rather see only a benefit in European banks being more open for collaboration.

> *The thing that's the positive is also the negative. It gives other people the opportunity to do it as well. (Fintech A)*

Fintechs B and D note that while open banking creates increased possibilities for partnership, it can be a mistake for Fintechs to rely too much on banks' ability to collaborate. Especially in the beginning of implementation, banks can struggle with implementation due to lacking technical capabilities, poor quality of data or slow decision-making processes. Fintechs can end up wasting time and resources when entering into collaboration with banks that aren't ready to implement. Also, Dhar and Stein (2017), and Zalan and Toufaily (2017) have previously recognized similar barriers.

6.4 Competitive advantages of banks and Fintechs in the open banking environment

Based on the answers from both bank and Fintech respondents, a significant determinant of competitive advantage in the open banking will be user experience. User experience includes the entire customer journey of onboarding and using a service, where the user interface, service features, and the usability and functionality of these features all play an important role in affecting the customers reactions to the service (Lin & Cheng 2015). Respondents emphasize the meaning of creating services or service portfolios based on consumer needs, as due to increased competition, consumers will have more choice, and convenience will be likely to factor in more heavily as a selection criterion.

Another common determinant of competitive advantage that the respondents highlight is the speed and responsiveness of service providers. The ability of banks and Fintechs to recognize trends in the market and changes in consumer behaviour and adapt their services quickly will likely be important in determining the competitive capabilities in an open banking environment. Thus, the speed of implementation is an important competitive advantage from an open banking viewpoint.

6.4.1 Bank competitive advantages

Trust is emphasized by both bank and Fintech participants as the most prominent bank competitive advantage in an open banking environment. This mirrors the suggestions of previous research by Dhar and Stein (2017), Zalan and Toufaily (2017), Döderlein (2018), and Romanova et al. (2018). Trust is regarded as an important advantage as the lack of trust towards new services creates a threshold for switching service providers (Dhar & Stein 2017). Fintech respondents note that an important bank competitive advantage interconnected to trust, is the recognizability of established brands, which are difficult and expensive for Fintechs to build.

> *They (banks) have a captive customer base, they've got an established brand. It's well documented that generating and creating a brand in financial services is very difficult and very expensive. People aren't just going to trust any institution with their financial lives. (Fintech D)*

However, with open banking the competitive advantage provided by trust and an established brand is unlikely to be constant in nature. When Fintechs grow and Fintech as a phenomenon gains recognizability among consumers, trust is likely to follow and thus diminish the competitive advantage brought by it to banks.

> *I'd say the trust element is more, it's an aging thing… ...So yeah, I would say that the trust only lasts so long. (Bank representative B)*

Resulting from an extensive experience in the financial markets, banks' existing customer base is regarded as a significant competitive advantage. Bank representative C also notes, that the amount of customers of different bank services is also a source for a lot of customer data on which banks can build new services on. Existing customer-base will create an advantage for banks in an open banking environment, because even though Fintechs will have access to some of the banks' customer data, the cost of customer acquisition will remain high for them.

> *What they (Fintechs) don't have is customers, at least not to begin with if they're direct-to-customer and direct-to-the-market. And therefore, they need to do a lot of work around customers acquisition – customer acquisition costs are high, customer retention costs are high. You'll have to do a lot of things to be able to acquire those customers. (Fintech B)*

The existing infrastructure of banks creates competitive advantages for them mainly via existing distribution channels, vast service portfolio and networks within the industry. According to Fintechs B and F, and bank representative B, while PSD2 will directly affect payments, banks will still be very competitive, even dominant, service providers in many verticals such as loans, insurances and wealth management services. Bank representative A notes that because of their wide portfolio of services and distribution channels, banks also have the advantage of acting as partnership platforms for different Fintechs. Fintech services could thus be distributed via banks' existing solutions as additional features or complementing services. Furthermore, banks' existing networks within the financial industry will help them build these platforms by partnering and sharing knowledge with Fintechs, Big Techs and other incumbents. Additionally, according to the bank representatives and Fintech A, the existing trust, consumers and resources of banks will even enable them to experiment and act like Fintechs by aggregating other banks' customer information and launching their own challenger solutions.

The main open banking competitive advantages of banks, recognized from the interview data, are compiled into table 2 below. The table shows the competitive advantages in the order of their overall emphasis by the research participants.

BANK COMPETITIVE ADVANTAGE	Bank Emphasis	Fintech Emphasis	Overall Emphasis
1. Established trust	67 %	67 %	67 %
2. Existing customer-base and data	33 %	67 %	56 %
3. Recognized brand	0 %	67 %	44 %
4. Existing distribution channels	33 %	33 %	33 %
5. Vast service portfolio	33 %	33 %	33 %
6. Existing resources	33 %	17 %	22 %

Table 2 Bank competitive advantages.

The list of banks' competitive advantages emphasized by the research respondents are similar to the findings of previous researchers described in chapter 4.1. Banks' competitive advantages are highly characterized by their established infrastructure and presence in the financial markets, which ensures them such key advantages as existing customer-base and established trust.

The competitive advantages of banks in table 2 and of Fintechs in table 3 show the differences in emphasis between the two interviewee groups and the overall emphasis of all participants. The emphasis is calculated by dividing the number of participants who highlighted the specific advantage by the total number of interviewees in each group (banks: 3, Fintechs: 6, overall: 9). For example, the banks' competitive advantage of established trust occurred in two out of three bank representative interviews (2/3=0,67), and four out of six Fintech interviews (4/6=0,67), resulting in an overall emphasis of six out of nine interviews (6/9=0,67) i.e. 67% emphasis. However, as the sample included in this case study is quite small, any significant conclusions should not be drawn from the differences in emphasis between the groups, but rather tables 2 and 3 should be regarded as representations of this individual case study's results. To offer more generalizable results on how banks and Fintechs emphasize the importance of different competitive advantages, a larger sample is needed. Nonetheless, the overall emphasis of each advantage provides a way to recognize the most significant competitive advantages from the interview data.

6.4.2 Fintech competitive advantages

Based on the interview data, the most prominent Fintech competitive advantage from an open banking perspective seems to be the overall speed of Fintechs. Both bank representatives and Fintechs conclude that speed and agility in all processes such as, decision-making, experimentation, iteration and implementation provide an advantage to Fintechs. Fast processes can thus allow Fintechs to have a quicker response time, compared to banks, when there is a need to adapt to changing customer needs or other changes in the market. Fintechs also often operate fully digitally without the administrative burden of operating branches or other physical touchpoints, which again increases their ability to move fast.

> *I think it's speed to market and similarly ability to adapt and iterate…*
> *…Fintechs are usually startups, smaller companies. But that lack of size is more than compensated by nimbleness. (Fintech D)*

Another big advantage of Fintechs, according to the research participants, is the focus on specific customer problems, and the expertise they build within certain niches. Consequently, Fintechs can create competitive advantage against banks by competing with them in narrow service segments, which will make it difficult for banks to maintain competitiveness with a wide general offering at multiple service segments.

> *…it's quite difficult I think, for a bank to maintain let's say price power or brand power in every single aspect of their business. Whereas an individual startup certainly can be the best in terms of pricing and offering in a certain category because it's the only thing that they do… (Fintech F)*

Furthermore, being highly specialized within a niche can also enable Fintechs to understand the changing consumer needs within the segment better than banks, according to bank representative C. Consequently, bank representative C and Fintechs A and B note that Fintechs have a competitive advantage in creating services with better user experience. Cortet et al. (2016) and Zalan and Toufaily (2017) also suggest that Fintech competitive advantage is based on the capability of offering better customer experience through niche specialization.

> *…the Fintechs are focused on doing one part of the banking, where it's focused on one element of banking and trying to do it very well, where the service levels can be so much higher and greater than customers are used to at the bank, that they end up using that fintech. And that service level might be due to price reduction, or margin reduction, it might be due to just ease of use and user experience… (Fintech B)*

Fintechs A, B and C emphasize the competitive advantage of not having legacy systems. Also bank representative C mentions the lack of legacy as an advantage of the Fintechs. Many incumbent banks have built their digital core operations during the 1970's and 1980's on technological architecture such as the COBOL programming language, which has since become outdated and struggles to support new applications (Costagliola et al. 2003). With a modern architecture that is built to support new applications such as AI, machine learning and blockchain, the Fintechs have more options in terms of technical implementation and are able to utilize data in more innovative ways.

> *…you can release new innovation, new customer value more rapidly if you don't have legacy of IT systems. You can design your organization to work a lot more cross-functional and agile, which also helps quicker delivery… (Fintech C)*

Bank representative A notes that the innovative use of data can provide a lot of opportunities for Fintechs in the financial markets. Bratasanu (2017) and Buchack et al. (2018) also found that efficient and innovative use of data and superior digital processes are contributing to the competitive advantages of Fintechs. Furthermore, Fintech B notes that access to any data outside the PSD2 mandate will be an important competitive advantage for Fintechs. Fintechs are forced to innovate with the limited data they have access to, while banks are unable to completely benefit from their vast amounts of data due to a lack of communication between the underlying legacy technologies.

According to Fintech F and bank representatives A and C, Fintech services are often designed to be scalable cloud-based solutions, which enable Fintechs to strategically expand and collaborate with many different partners internationally. Scalability is especially a competitive advantage in the PSD2 environment, where banks are required to have similar APIs for Fintechs to plug into across Europe. For banks, scaling operations is more difficult due to their regulatory burden and the saturation of incumbents in other markets.

> *First of all, there's going to be a lot of opportunities for Fintechs helping banks stay and remain competitive by providing smaller services that banks are neglecting to provide for their customers and doing them in a scale that operates and runs across various different banks offering similar API infrastructures. (Bank representative A)*

The main Fintech open banking competitive advantages recognized from the interview data are listed in table 3.

FINTECH COMPETITIVE ADVANTAGE	Bank Emphasis	Fintech Emphasis	Overall Emphasis
1. Speed & agility	67 %	83 %	78 %
2. Niche expertise	33 %	67 %	56 %
3. Lack of legacy technology	33 %	50 %	44 %
4. Scalability of operations	67 %	17 %	33 %
5. User experience	33 %	33 %	33 %
6. Innovative use of data	67 %	0 %	22 %

Table 3 Fintech competitive advantages.

The emphasis of Fintech competitive advantages is calculated in the same manner as bank competitive advantages in chapter 6.4.1. The findings show that the lack of existing infrastructure and legacy technology enables Fintechs to be fast, agile and scalable compared to banks. Fintechs also benefit from focusing on a restricted set of features, which enables them to accumulate niche expertise and create superior user experiences within specific service areas. Enhanced user experience within a service results from high attention to detail and developing the service around established consumer needs and preferences in terms of e.g. utility, features and aesthetics (Lin & Cheng 2015). The findings largely reflect the results of previous research and show a similar emphasis on speed, niche capabilities and user experience (Cortet et al. 2016, Bratasanu 2017, Zalan & Toufaily 2017).

6.4.3 Fintech funding as a competitive advantage

The role of Fintech funding as a competitive advantage proved to be a multifaceted issue. While all Fintechs conclude, that funding can be a competitive advantage in, there are still certain caveats to funding that should be recognized. Fintech A & B note that funding can give more flexibility and ability for Fintechs to experiment and try different strategies, which can ultimately help find the path to success. However, Fintechs looking to scale fast can end up overfunded and the founders can suffer from adverse consequences such as loss of control and decision-making power over their own company.

> *…there is the consequence of being overfunded and there's a lot of things to consider when taking funding as a business and especially as a business*

> *owner: what it means to your ownership structure, what it means to the pressures on your business. (Fintech B)*

According to Fintech D and F, large amounts of funding can be an advantage or even a necessity to Fintechs who are working in very capital-intensive niches and require a certain scale of operations to be profitable. Whereas if the growth strategy is to partner with multiple international institutions rather than acquire customers on their own, the need for funding is diminished.

> *Potentially the ability to fund growth can be a competitive advantage because again that's like fundamentally how I see the reason of existence for startups is that you are really leveraging some identified opportunity through external capital with the assumption that at a certain scale, which can be entirely unknown for basically even permanently, but there's this imaginary scale at which when you hit it, then you are effectively indestructible. (Fintech F)*

It appears that the role of funding is most crucial in the beginning of a Fintech's path, but can diminish over time, as the need and possibility to scale becomes smaller. There is consensus among the Fintechs, that in the beginning, when Fintechs are starting to scale up their business, external funding can help to build a more capable team, a better product, and acquire an initial customer base. Furthermore, sufficient funding can help establish these first phases faster than the competitors.

As the lack of sufficient funding can hinder company survival, securing a certain level of capital can be a pre-requisite for the continuity of operations (Markova & Petkovska-Mircevska 2010). However, Fintech C states that access to funding is quite easy for Fintechs to achieve especially due to the current financial technology boom in the markets. All in all, while funding can be an important factor in the growth of a Fintech and in some cases a competitive advantage, it is not included as a common Fintech competitive advantage in this thesis due to its ambiguity and dependencies. It is, nonetheless, useful to understand the effects of funding in the Fintech context.

6.4.4 Fintech scale as a competitive advantage

When asked about the effects of Fintech scale on competitive advantage, the bank representatives provide two-fold answers. They note, that there is no specific scale of funding or size to be determined when Fintechs become a threat to banks. However, bank representatives A and B continue to say that the markets are already witnessing Fintechs such as Klarna scaling to a level of considerable competitive capability both due to its resources and its geographical presence.

> *I would say, I guess we're seeing it with Klarna… …So I think at that scale when you're in the UK, you're in all the Nordic countries, you're going into Germany, Spain, that already kind of has enough traction to then pretty much absorb into every market and keep running. (Bank representative B)*

Bank representative C concludes that Fintechs do not ultimately have to be large to become threats to incumbents. If a service provided by a Fintech becomes a better alternative than the banks' in an important service segment, the potential for Fintechs to go viral and gain large amounts of customers quickly, can prove to be a threat. Fintech E mentions that the ability of Fintechs to go viral is greater than that of banks but is still difficult to predict or achieve. Consequently, an estimation of a scale at which a Fintech becomes a threat to banks is difficult to determine, but when an internationally well-established Fintech or a virally spreading Fintech service enters the same market segment with a superior product, it can become a competitive threat to banks. The findings thus imply that, similarly to Fintech funding, the effects of Fintech scale on competitive advantage are case-dependent and not something that can be generalized. The literature review on previous research also shows no systematic effect of Fintech size to competitive advantage. However, in the case of Big Techs, such as Google and Amazon, who are large enough to have a variety of existing distribution channels and a significant customer-base, company scale is seen as a competitive threat to incumbents (Cortet et al. 2016, Döderlein 2018, Gomber et al. 2018).

6.5 Value of bank and Fintech cooperation

6.5.1 Perceived value from bank perspective

All bank representatives agree that there is mutual value to be found in bank and Fintech cooperation. The most apparent reasoning for bank and Fintech partnership is the complementary nature of both parties' service scopes. Banks focus on offering general services that cover the needs of the majority, whereas Fintechs focus on enhancing customer experiences in specific service areas. There is a significant possibility for banks to act as platforms for Fintech niche services, in which case banks can offer a new service to their customer fast, without spending resources on slower in-house development of a similar service. Fintechs also, due to their niche expertise, are often able to provide better user experiences than the banks could develop themselves. Similarly, Cortet et al. (2016) also note that a strategy of platformization creates new opportunities for incumbents. According to bank representative A, bank and Fintech partnership can optimally be about Fintechs providing niche services that banks can't afford to build and doing it in a way that doesn't compete with the banks' general offering. However, bank representative B notes that regardless of the mutual benefits of cooperation, banks are yet to engage sufficiently with Fintechs.

> *So therefore, at best, we're going to see mutually beneficial models like the Apple App Store ecosystem, where the Apple devices become that much more valuable through the used services and apps on that device. (Bank representative A)*

According to bank representative C, banks can also realize benefits by learning ways of working from the Fintechs. Banks have the need to align their strategy for open banking and Fintech cooperation can enable banks to learn how to enhance internal processes, be more customer-centric, make faster decisions and also develop better APIs to facilitate collaboration. The notion of learning through collaboration exemplifies the concept of open innovation and the value of outside-in ideas and capabilities (Bogers et al. 2018). However, changing the ways of working to facilitate Fintech partnerships can also provide some challenges to the incumbents. According to bank representatives B and C, incumbents are currently focused on managing risk and the fast decision-making that Fintech partnership requires, can clash with thorough risk and legal processes. Simultaneously, PSD2 and open banking are initiating the release of data outside the banks, calling for even more careful risk management. Thus, in order to conform to new market requirements and to achieve the agility needed for Fintech partnerships, bank internal processes related to risk management and decision-making require modification.

The bank representatives note that it is important for incumbents to know in which service areas to initiate partnerships and who to partner with. According to bank representative A, the banks that will reap the benefits of the open banking market opportunity are the ones who are able to partner with Fintechs in areas where greatest customer need is detected and who can curate their services accordingly. Bank representative B notes that there is a challenge for banks to recognize companies with the right core capabilities, and to partner with these companies early enough. Many Fintechs boast similar functionality and features regarding trending technologies such as artificial intelligence and machine learning, but the existing technologies behind these features can vary in their sophistication. Bank representative C also emphasizes the importance of moving fast. If banks seek Fintech partnerships at the point where competitors have already implemented similar solutions and the need is urgent, banks can end up paying significantly more for an individual partnership. Moving late will thus enable Fintechs to charge more and can lead to a diminished benefit for the banks, as the first-mover advantage has already been realized by others.

In terms of a preferred way of collaborating with Fintechs, all bank representatives highlight a model where banks and Fintechs execute a pilot project and then move on to a commercial implementation model. A pilot enables both banks and Fintechs to establish whether there is a cultural and technological fit between the companies, and if there is an actual need realized from the consumers. Piloting is a collaborative means of validating, learning and iterating to establish a commercially viable solution (Böhmann et al. 2014). If a mutual fit and customer demand are established, the preferred method of collaboration is a long-term commercial agreement that enables revenue-sharing.

> *(about piloting) So it's kind of engraining an iterative way of working into the organization, pushing for speed throughout different functions like risk management in order to be ready for a world in the platform economy, where you need to actually be able to operate in a much faster pace. (Bank representative C)*

6.5.2 Perceived value from Fintech perspective

Like the bank representatives, also all the Fintechs regard cooperation between banks and Fintechs to be mutually beneficial. The results support the view of previous research on bank and Fintech partnerships by confirming that both parties possess strengths that can contribute to mutually beneficial collaborative ventures (Wonglimpiyarat 2017, Drasch et al. 2018, Döderlein 2018, Romanova et al. 2018). The biggest benefit of cooperation according to the Fintech respondents is the direct access to banks' customer base and to the banks' existing distribution channels. This enables Fintechs to bypass issues such as customer acquisition or establishing consumer trust under their own brand. Zalan and Toufaily (2017) found similar results in their research interviews with bank and Fintech executives. According to Fintech D, access to banks' customers can also open access to new underserved customer segments for whom some of banks' services have been too expensive or otherwise exclusive e.g. wealth management, but which Fintechs can offer more efficiently. Fintechs also see bank partnerships as a method of accessing certain markets quickly and efficiently due to the extensive market knowledge of banks. Furthermore, Fintechs A, B and F also emphasize the opportunity brought by the platformization of financial services, where Fintechs can implement their services into banks' platforms or service marketplaces quickly via simple API integrations and scale their operations to many markets and banking platforms.

> *…rather than maybe try to go about, you know, defending their market shares in the traditional methods, they (banks) would effectively become a bit more of a marketplace provider and bring in Fintech solutions to take advantage of their lower cost base and innovation and potentially therefore lower fee structure… (Fintech F)*

Where banks benefit from the niche expertise and services of Fintechs, Fintechs benefit from the vast service offering of banks that supplement the Fintechs' offering, which might not be as appealing as standalone products. Another benefit of bank cooperation for Fintechs, according to Fintechs C and F, is externalizing processes such as risk management and learning from the regulatory environment. Simultaneously, banks can benefit from externalizing some of their innovation processes to Fintechs. The findings support the research made by Bátiz-Lazo (2004) and Cozzolino and Rothaermel (2018) on competitive collaboration and their conclusions that mutual benefit can be found in collaboration between competitors. They emphasize the benefits of complementary knowledge that incumbents and new entrants have in relation to each other and the subsequent opportunities for learning. Bátiz-Lazo (2004) also notes that competitive collaboration can diminish barriers and risks and can help avoid unnecessary and time-consuming investments to develop internal solutions.

Partnerships with banks can, however, also include some drawbacks for Fintechs. According to the interviewed Fintechs, the slowness of banks is a major drawback of cooperation, which increases the need for Fintechs to carefully select their partners. Fintechs A, B, and C state that besides losing speed to market, Fintechs can also lose significant amounts of capital by investing time and money in partnerships that take a long time to get implemented and to start making revenue. In the case of bank and Fintech partnership, the cost of time is thus much bigger for a young Fintech than an established incumbent with more capital to spend. All the Fintechs note, that collaboration with banks always requires compromises related to speed, ownership of the customer relationship or even control of the product. Fintechs A and D conclude that one of the reasons for time-consuming implementation of projects, besides the slow decision-making processes of banks, is the fact that banks want to modify the product before even piloting.

> *…there's a lot of opinions in the room about how the product should look and all of those opinions are extremely valid, but in our point of view I think this is a process that has proven that the best way to optimize a product is to get it in to market, learn through user behaviour, through data, and to iterate quickly. (Fintech D)*

Fintech C points out another considerable drawback of bank and Fintech collaboration to be the dependence on a small number of large customers. The decision made by a single bank to terminate a partnership contract can have a significant effect on a Fintech's customer base. Moreover, Fintech B notes that to even be eligible for cooperation with banks, Fintechs need to reach a certain standard and to have the initial market validation, which can be costly and difficult for new Fintechs to acquire.

> *...you need to have certain number of people, you need to go through security testing, you need to have the right regulations and licenses and all these things cost a lot of money. (Fintech B)*

The most relevant model of cooperation with banks, according to all the Fintechs, is a contractual agreement that includes revenue-sharing. The Fintechs also highlight the importance of finding a win-win solution in the partnership. Fintech C further elaborates that their preferred cooperation model is one where they do the majority of the executive tasks due to the banks often having limited technological capabilities and thus being slower. Fintechs A, B, E and F state a preference on having a simple API plugin model, which is a low resource commitment option that enables fast integration and lets the bank handle the customer facing side by white labelling the solution under the bank's brand. Fintechs B and D also emphasize the importance of having clearly defined objectives for both parties entering the partnership agreement. When the end goals are aligned and the milestones are clear, the follow-through becomes easier on both sides and the implementation of the project is faster.

7 CONCLUSIONS

In this chapter, the main findings of the research are discussed and the answers to the research questions stated. The results are also reflected on the previous research and theory on the subject, which was covered in the literature review part of the thesis. Additionally, the managerial implications of the results are discussed as they are a major contribution of the research. Finally, the limitations of the thesis and the implications for future research are considered in order to recognize the imperfections of the study and provide ideas on how future research could approach the subject matter after the full implementation of PSD2.

7.1 Key findings

To provide context to the research questions of the thesis, bank and Fintech views on PSD2 and open banking are first established. According to previous research, PSD2 is regarded as a considerable force driving forward the financial industry's current technological and service development (Cortet et al. 2016, Jackson 2018, Romanova et al. 2018). Based on the findings of this thesis, the change brought by PSD2 is bigger for Fintechs than it is to banks. PSD2 impacts proportionally a larger part of the Fintechs' niche business models whereas incumbents often have a vast portfolio of services, of which mainly payments and personal finance management are directly affected by the new directive. In contrast to previous research findings, the changes imposed directly by PSD2 are not perceived to have a big impact on banks in the short-term. However, it is important to differentiate the short-term PSD2 effects on payments and the more fundamental change towards open banking and platformization the regulation is intermediating. This overall development is seen to have a major impact on banks by requiring a strategic re-alignment and learning new, faster ways of working. Overall, in keeping with the objectives of the PSD2 regulation, the case companies see that the most significant effect of the directive will be increased consumer benefit through new innovation.

PSD2 and open banking provide both advantages and challenges to banks and Fintechs. Both parties see the increased amount of competition as the main challenge in the open banking environment. From the Fintechs, however, only ones directly under the PSD2 regulation emphasize the challenge of increased competition, whereas Fintechs outside Europe see only a beneficial effect on their capabilities to partner with European incumbents. This leads to a conclusion that PSD2 will make the European financial market an increasingly tempting option for non-European Fintechs as well. While incumbents can also benefit from open banking via the increased possibilities of Fintech partnerships, there is a challenge of poor cost-to-benefit ratio in the development of the PSD2 APIs (Jackson 2018, Romanova et al. 2018). Banks are carrying the cost of developing and maintaining free access APIs for Fintechs and thus need to find other pathways to profit than charging for the use of PSD2 APIs. One option arising from the results is for banks to attract partners by offering Fintechs additional data by expanding their API offering and charging for the use of the optional, supplementing APIs.

For Fintechs, the changes imposed by PSD2 are perceived to be substantial and beneficial in nature, as the regulation enables access to new data and bank partnerships. However, the results also suggest that there are still challenges that PSD2 does not eradicate: Fintechs can face barriers of slow implementation in new partnerships, lacking technological capabilities of partners, and costs from regulatory compliance. In fact, when implemented or governed poorly, regulation such as PSD2 can even end up having counterproductive effects (Romanova et al. 2018). For instance, the findings show that while PSD2 strives for a standard execution of account information and payment initiation APIs in Europe, Fintechs can expect to face some friction with implementation. Notably, some incumbents have begun to publish their PSD2 APIs and are already showing variations in their solutions that will require customization work from the Fintechs. Overall, in comparison to previous research literature, the findings of this thesis provide a more critical view on the immediate effects of PSD2 by also recognizing challenges regarding its implementation.

The first research question of the thesis concerns the competitive advantages of banks and Fintechs in an open banking environment. The findings show that great user experience and the speed of a company are regarded as the main determinants of competitive advantage in the open banking market environment from both the bank and Fintech perspective. Further exploring the individual competitive advantages of both parties, the results show that bank competitive advantages stem from the experience and infrastructure they have amassed during their years of operation. Banks' main advantages are related to an established trust and brand, the existing customer relationships, distribution channels, resources and their vast service portfolios. Conversely, Fintech competitive advantages stem from the lack of this existing infrastructure and legacy, resulting in a more modern and agile organization. Due to being newer and smaller participants in the financial markets compared to the incumbents, Fintechs possess the benefits of speed and agility, which are common advantages of small and medium-sized enterprises over larger companies (Toulova et al. 2015). Additionally, the up-to-date core technological architecture of Fintechs, enables them to be much more dynamic in iterating their services and scaling up operations. Fintechs also gain competitive advantage from their niche focus and the consequent ability to create services with superior user experiences.

The results also show that the effect of funding on Fintech competitive advantage can be conspicuous. While being important to early stage Fintechs and those looking to scale their business model fast, external funding is seen to have the possible drawbacks of overfunding and change in ownership structure. Similarly, the effect of Fintech scale on competitive advantage is difficult to determine. On one hand, some Fintechs, such as Klarna, have already shown that abundant resources and a strong geographical presence can be significant competitive advantages. On the other hand, Fintechs may also become a competitive threat to other players without having scaled to be very large by being able to acquire customers fast through referrals and by realizing network effects. Consequently, it can be determined that while Fintech funding and scale can have effects on competitive advantage, the effects are case-dependent and thus not common to all Fintechs.

The results imply that Fintech competitive advantages are highly similar to the overall determinants of competitive advantage, which were recognized to be user experience and speed. Indeed, the modern configuration of the Fintech companies, where technology is cloud based, organizational structures are light and decision-making is fast, is enabling Fintechs to iterate services quickly based on customer needs (Bratasanu 2017, Zalan & Toufaily 2017). As user experience is related to the whole journey of a user from onboarding, using and discontinuing use of a service or product, Fintechs are able to polish the experience by focusing on a specific service and picking apart each step of the user journey. However, Fintechs can struggle with high costs of customer acquisition, lack of data, and establishing trust as smaller players, whereas these are the core strengths of the incumbents. Consequently, the key findings regarding the first research question are not only related to the competitive advantages discovered, but also to the realization that bank and Fintech competitive advantages are indeed complementary in nature.

Another finding emerging from the results is that Big Tech companies such as Google, Apple, Facebook and Amazon are seen as big potential influencers on the open banking financial market. Big Techs possess a combination of speed, existing customers and data, and immense technological capabilities, which are seen as substantial competitive advantages if these companies increase efforts in building financial market presence. From a bank perspective, the constantly increasing number of smaller Fintechs can impose a gradual accumulation of competitive pressure, whereas a competitive entry made by a Big Tech, can have a significant immediate effect (Döderlein 2018).

The second research question seeks to establish whether there is mutual value in bank and Fintech cooperation. Results from both bank and Fintech perspectives suggest both parties can indeed realize significant value from partnerships. The complementarity of both parties' competitive advantages, established by the findings of the first research question, acts as incentive for collaboration. Due to complementary core competences, bank and Fintech partnership can lead to banks benefitting from quick implementation of new services with increased levels of customer convenience and Fintechs realizing benefits from instant access to large numbers of customers with a single partnership deal. Importantly, the results show that the collaboration is also supported by the complementarity of service scopes. While banks focus on the large audiences' needs and develop services that cater to the masses, Fintechs provide solutions on specific customer needs with a high level of expertise. These results are supported by the theory and previous research on competitive collaboration between incumbents and new entrants, which emphasizes the ability both parties to learn from the core competences of the other (Bátiz-Lazo 2004, Cozzolino & Rothaermel 2018).

Due to the complementarity of service offerings, solutions offered by incumbents related to e.g. mobile banking, insurances or savings and investment can act as platforms on top of which Fintechs can operate in an effort to create superior service portfolios and greater customer value. An important finding emerging from the results is that open banking is driving forward the platformization of financial services. Equally importantly, banks and Fintechs have the opportunity to build platforms in collaboration, which are able to serve several customer segments from a single interface, while being able to provide superior user experiences for each segment. Previously also Anyfantaki (2016), Dhar and Stein (2017), and Jackson (2018) have emphasized the significance of platformization in Fintech.

The results of this thesis support previous findings on bank and Fintech competitive advantages and the value of collaboration. The results also add to the existing yet limited research on bank and Fintech collaboration by demonstrating the significant opportunities of partnership from both bank and Fintech perspectives, while realistically assessing the barriers and drawbacks for either party. The results also provide a framework of common bank and Fintech competitive advantages from an open banking perspective and thus enables industry stakeholders to assess their core strengths and recognize the needed complementary strengths of partner candidates. All in all, this research provides additional insights to supplement the limited research on open banking and gives industry stakeholders more support in aligning themselves strategically to the changing markets. The findings of this research support the theories of open innovation (Bogers et al. 2018) and competitive collaboration (Bátiz-Lazo 2004, Cozzolino & Rothaermel 2018) and show that these theories are, in fact, replicated in practice in bank and Fintech partnership models and financial service platformization.

7.2 Managerial implications

The results of this research can be utilized by both bank and Fintech executives as a framework for recognizing competitive advantages and determining a strategy for open banking. Moreover, the results enable banks and Fintechs to assess the value of partnership opportunities and the capabilities of partnership prospects. This is possible due to the fact that the research findings showcase the main opportunities and pain points of partnerships from an open banking point of view.

Both banks and Fintechs are facing the significant challenge of increased competition with the introduction of PSD2. However, by forming partnerships that go beyond PSD2 data access e.g. with fund or insurance APIs, both parties can gain significant value from implementing new platform solutions. Even though the research results suggest that Fintechs are better configured to operate in an open banking environment where speed and user experience are emphasized, banks still hold an important advantage in providing the platforms on top of which Fintechs can offer their services. Alone Fintechs can face challenges in customer acquisition and retention with their niche services, but as part of platforms, they can provide more value for the end-customers (Dhar & Stein 2017).

Banks have a challenge in adjusting their strategies and learning new ways of working to adapt to open banking. An important method for banks to learn the ways of working with Fintechs is to enter into joint pilots to validate different service concepts and test the fit between the companies. Furthermore, the value potential realized in pilots, should be brought to the market with Fintechs by entering into commercial agreements. The roadmap of joint development from pilot to a commercial solution requires that banks learn to embrace the methods of fast, iterative, and customer-centric service development and adjust decision-making and risk management processes to support the implementation of services in partnerships. The research results also show that banks need to curate their service portfolios and recognize areas where collaboration makes sense and find the right companies to collaborate with accordingly.

The importance of finding the right companies to collaborate with also presents and important implication to Fintech management. Choosing to partner with incumbents that don't have sufficient technological capabilities, sufficient buy-in from the management or fast enough decision-making processes, Fintechs can end up wasting time and resources. Furthermore, there is an implication for Fintech executives to consider that while cooperating with banks gives access to customers and a trusted brand, it also often means a compromise in speed and autonomy compared to implementing a direct to consumer solution. As a small number of banks can constitute a large portion of a Fintechs customer base, the need for partnering with the right banks, with the right capabilities, can be vital.

In terms of collaborative models, the importance of validating fit and customer value via piloting is emphasized for banks. It is also important for Fintechs to establish a win-win model where key performance indicators and common goals are set before commercial agreements. When entering into a commercial agreement, a long-term contractual model that enables revenue-sharing is considered as the best solution in general. In a commercial model, Fintechs can benefit from acting under the banks brand as a technology provider, which enables fast and inexpensive implementation for the Fintech and opportunities in scaling the service faster. From a bank perspective, these kinds of solutions enable them to remain as the consumer-facing party and maintain ownership of the customer relationship. The findings related to the preferred collaboration models also provide further support to the significance of financial service platformization. Ultimately, when Fintechs and banks are able to recognize the right partners, entering into collaboration can unlock significant value for both parties.

7.3 Limitations of the study

There is an overall limitation in trying to draw conclusions about the open banking market and bank and Fintech partnerships. While the value of this thesis is partially constituted by its ability make general conclusions about the complex phenomenon, it is important to recognize that there are still unknowns concerning the effects of PSD2 and the factors that affect individual bank and Fintech partnerships. As this research is executed before the full implementation of PSD2, the effects of the regulation can only be forecasted based on the signs that the markets are showing and how the market participants make sense of the change.

The short timeframe and limited resources in the context of a master’s thesis provides a limitation to the scope of the study. Thus, the research has been executed as a qualitative case study to provide a representation of a bigger phenomenon with a small number of research participants (Bennett 2004). While qualitative data is argued by some to be limited due to a lack of hard facts, it is better suited to get an in-depth understanding of the research subject (Barnham 2015). Still, for the purposes of determining the most significant competitive advantages of both banks and Fintechs, a larger pool of participants could have been utilized to provide more validity to the results. For example, an additional questionnaire regarding competitive advantages sent to a larger group of banks and Fintechs would have provided a relevant set of quantitative data about the significance of each competitive advantage. However, as a case study this thesis is still able to form an in-depth view on how banks and Fintechs experience the shift to an open banking market environment.

While most of the interviews of this research were conducted face-to-face, some were conducted via telephone due to geographical distance or scheduling difficulties. Telephone interviewing as a method itself cannot be considered as a limitation to the study, but the method implies a lack of the researcher's control over the interview environment and the inability to react to unspoken signals of the interviewee (Edwards & Holland 2013: 43-52). Especially in one interview this presented a problem as the telephone connection was of poor quality and at times some questions and answers required repetition.

The Fintech participants of the research had all previously engaged in partnership activities with the case bank on varying levels. This provides a limitation to the research by including only Fintechs that have acknowledged partnerships with banks as a valid strategy for their operations. Subsequently, the bank had also aligned itself to partner with Fintechs. Also, the inclusion of a single bank's representatives for the study provides a limitation as all interviewees had acted under the same organization and strategic framework. The choice of including a single bank was based on the writer's knowledge of the bank's activity regarding open banking and Fintech partnership and the bank representatives' expertise in these areas. For the purpose of comparison, it would have been interesting to include more banks and Fintechs with varying levels of experience in partnership. In a case study framework, however, this group of participants provided a comprehensive view on the research subject, as the bank was experienced in partnerships and the Fintechs were from different major financial markets with varying exposures to open banking.

7.4 Implications for future research

This thesis provides insights on open banking from a pre-PSD2 perspective, where the markets are yet to see the full implementation of the directive. The results of the research provide a foundation for future studies in the post-PSD2 market environment from a multitude of different perspectives. As the results of this thesis imply that there is strong reasoning for bank and Fintech partnerships, it gives an interesting opportunity for further studies on how partnerships start to form and if winners start to emerge in certain service segments or geographical markets. Furthermore, there is a possibility to inspect how the perceived partnership benefits recognized in this thesis are realized and if there are other emergent benefits or drawbacks that the market participants have not anticipated.

From a macro-economic perspective, there is an important opportunity to research the effects that open banking will have on competition and innovation. As one of the main objectives of PSD2 is to increase competition and innovation to drive customer benefit, it is crucial that the fulfilment of this objective is measured after a transitional period. The amount of new services introduced gives one viewpoint on the matter, but another interesting possibility is to research the consumer perspective. Answering how consumers see the added value of the new, more diverse service offering and how consumers actually adopt these new services is likely to give a better understanding on how PSD2 and open banking area able to affect the financial market (Ribeiro et al. 2019).

As mentioned in the limitations of the research, there is an implication to study the effects of open banking and the perceived value of bank and Fintech partnerships with a larger pool of companies, including ones with less experience in partnerships. Furthermore, after a transitional period, there is an interesting opportunity to compare the growth and customer satisfaction levels of incumbents who actively seek partnerships and develop their APIs versus those incumbents who decide not to partner and to merely comply with the regulation. The consensus found in previous research and also in the results of this thesis implies that open banking will require a re-alignment of incumbents' strategies to partner with Fintechs in mutually beneficial models. Therefore, the long-term opportunity to study whether open banking will see some incumbents adopt a competitive and successful strategy by merely complying with the regulation and without emphasizing partnerships is interesting.

REFERENCES

Anyfantaki S (2016) The evolution of financial technology (fintech). Economic Bulletin (44): 47-62.

Apple (2019) Apple card. https://www.apple.com/apple-card/. Referenced 27.3.2019.

Badircea R, Manta A, Pirvu R & Florea N (2016) Banking integration in European context. Amfiteatru Economic 18(42): 317-334.

Barclaycard (2019) Barclaycard partners with Alipay to help UK merchants increase sales from booming Chinese tourism. https://www.home.barclaycard/media-centre/press-releases/Barclaycard-partners-with-Alipay-to-help-UK-merchants-increase-sales-from-booming-Chinese-tourism.html. Referenced 27.3.2019.

Barnham C (2015) Quantitative and qualitative research. International Journal of Market Research 57(6): 837-854.

Barriball KL & While A (1994) Collecting data using a semi-structured interview: A discussion paper. Journal of Advanced Nursing 19(2): 328-335.

Basso A, Bon J, Tasker B, Timan N, Walker M & Whitcombe C (2018) Recent developments at the CMA: 2017-2018. Review of Industrial Organization 53(4): 615-635.

Bátiz-Lazo B (2004) Strategic alliances and competitive edge: Insights from Spanish and UK banking histories. Business History 46(1): 23-56.

Bennett A (2004) Case study methods: Design, use, and comparative advantages. In: Models, Numbers, And Cases: Methods For Studying International Relations. Michigan, University of Michigan Press: 19-55.

Bogers M, Chesbrough H & Moedas C (2018) Open innovation: Research, practices, and policies. California Management Review 60(2): 5-16.

Bratasanu V (2017) Digital innovation the new paradigm for financial services industry. Theoretical & Applied Economics (24): 83-94.

Brodsky L & Oakes L (2017) Data sharing and open banking. https://www.mckinsey.com/industries/financial-services/our-insights/data-sharing-and-open-banking. Referenced 14.3.2019.

Buch CM, Koch CT & Koetter M (2013) Do banks benefit from internationalization? Revisiting the market Power–Risk nexus. Review of Finance 17(4): 1401-1435.

Buchak G, Matvos G, Piskorski T & Seru A (2018) Fintech, regulatory arbitrage, and the rise of shadow banks. Journal of Financial Economics 130(3): 453-483.

Böhmann T, Leimeister JM & Möslein K (2014) Service systems engineering: A field for future information systems research. Business & Information Systems Engineering, 6(2): 73-79.

Cai CW (2018) Disruption of financial intermediation by FinTech: A review on crowdfunding and blockchain. Accounting & Finance 58(4): 965-992.

Chakraborty I, Hai R, Holter HA & Stepanchuk S (2017) The real effects of financial (dis)integration: A multi-country equilibrium analysis of Europe. Journal of Monetary Economics (85): 28-45.

Cortet M, Rijks T & Nijland S (2016) PSD2: The digital transformation accelerator for banks. Journal of Payments Strategy & Systems 10(1): 13-27.

Costagliola G, Francese R & Scanniello G (2003) A visual system supporting software reuse in the banking legacy system context. International Journal of Software Engineering & Knowledge Engineering, 13(1): 83.

Cozzolino A & Rothaermel FT (2018) Discontinuities, competition, and cooperation: Coopetitive dynamics between incumbents and entrants. Strategic Management Journal 39(12): 3053-3085.

Crunchbase (2019) Funding and valuation data: Klarna and Credit Karma. https://www.crunchbase.com. Referenced 26.3.2019.

Dhar V & Stein RM (2017) FinTech platforms and strategy: Integrating trust and automation in finance. Communications of the ACM 60(10): 32-35.

Döderlein D (2018) What is the optimal mix between banks and FinTechs in the payments architecture? Journal of Payments Strategy & Systems 12(2): 122-129.

Drasch BJ, Schweizer A & Urbach N (2018) Integrating the 'troublemakers': A taxonomy for cooperation between banks and fintechs. Journal of Economics & Business 100: 26-42.

Edwards R & Holland J (2013) What is qualitative interviewing? London, Bloomsbury.

Eriksson P & Kovalainen A (2018) Qualitative methods in business research. London, SAGE Publications Ltd.

European Commission (2018) Payment services directive: Frequently asked questions. European commission press release database. http://europa.eu/rapid/press-release_MEMO-15-5793_en.htm. Referenced 16.3.2019.

Gianiodis PT, Ettlie JE & Urbina JJ (2014) Open service innovation in the global banking industry: Inside-out versus outside-in strategies. Academy of Management Perspectives 28(1): 76-91.

Gilder A (2018) How open banking in Singapore may pivot or remain organic. https://www.ey.com/en_gl/banking-capital-markets/how-open-banking-in-singapore-may-pivot-or-remain-organic. Referenced 14.3.2019.

Gomber P, Kauffman RJ, Parker C & Weber BW (2018) On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. Journal of Management Information Systems 35(1): 220-265.

Greenwood R & Hinings CR (1996) Understanding radical organizational change: Bringing together the old and the new institutionalism. Academy of Management Review 21(4): 1022-1054.

Haubrich D (2018) The development of regulatory requirements for payment services: The European banking authority and the revised payments services directive. Journal of Payments Strategy & Systems 12(2): 130-138.

Howarth D & Quaglia L (2016) Internationalised banking, alternative banks and the single supervisory mechanism. West European Politics 39(3): 438-461.

Ilinitch AY, Aveni RAD & Lewin AY (1996) New organizational forms and strategies for managing in hypercompetitive environments. Organization Science 7(3): 211-220.

Jackson O (2018) PSD2 gives banks chance to evolve. International Financial Law Review.

Kasasbeh EA, Harada Y & Noor IM (2017) Factors influencing competitive advantage in banking sector: A systematic literature review. Research Journal of Business Management 11(2): 67-73.

Lin CJ & Cheng L (2015) An integrated model of service experience design improvement. Service Industries Journal 35(1-2): 62-80.

Manasov J & Ivanovska LP (2018) User preferences for banking services offered by non-banking companies and tech giants. Journal of Sustainable Development 8(21): 35-50.

Markova S & Petkovska-Mircevska T (2010) Entrepreneurial finance: Angel investing as a source of funding high-growth start-up firms. Annals of the University of Petrosani Economics, 10(3): 217-224.

Mulder A & Westerhuis G (2015) The determinants of bank internationalisation in times of financial globalisation: Evidence from the world's largest banks, 1980–2007. Business History 57(1): 121-154.

Oney C (2018) Fintech industrial banks and beyond: How banking innovations affect the federal safety net. Fordham Journal of Corporate & Financial Law 23(2): 541-575.

Peyton A (2018) RBS tests its SME digital entity Mettle. https://www.bankingtech.com/2018/11/rbs-tests-its-sme-digital-entity-mettle/. Referenced 26.3.2019

Pollari I (2016) The Rise of Fintech: Opportunities and challenges. Jassa (3): 15-21.

Pollari I & Ruddenklau A (2019) The pulse of fintech 2018: Biannual global analysis of investment in fintech. KPMG. https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/02/the-pulse-of-fintech-2018.pdf. Referenced 26.3.2019

Powell WW & DiMaggio PJ (1991) The new institutionalism in organizational analysis. Chicago, University of Chicago Press.

Puschmann T (2017) Fintech. Business & Information Systems Engineering 59(1): 69-76.

Ribeiro ÁHP, Monteiro PRR & Luttembarck L (2019) The use of the 'job to be done' methodology to identify value co-creation opportunities in the context of the service dominant logic. Brazilian Business Review (Portuguese Edition) 16(1): 32-45.

Romanova I, Grima S, Spiteri J & Kudinska M (2018) The payment services directive II and competitiveness: The perspective of European fintech companies 21(2): 3-22.

Singleton J & Verhoef G (2010) Regulation, deregulation, and internationalisation in South African and New Zealand banking. Business History 52(4): 536-563.

Strauss A & Corbin J (1998) Basics of qualitative research: Techniques and procedures for developing grounded theory. London, SAGE Publications.

Toulova M, Votoupalova M & Kubickova L (2015) Barriers of SMEs internationalization and strategy for success in foreign markets. *Journal of Management Cases* 4.

Van Alstyne M & Parker G (2017) Platform business: From resources to relationships. GfK-Marketing Intelligence Review 9(1): 25-29.

Vasiljeva T & Lukanova K (2016) Commercial banks and fintech companies in the digital transformation: Challenges for the future. Journal of Business Management (11): 25-33.

Walliman N (2011) Research Methods: The Basics. New York, Routledge.

Wonglimpiyarat J (2017) FinTech and the evolving payment landscape. Journal of Payments Strategy & Systems: 226-235.

Yap B (2017) New EU payment services rules spur new regulation in japan. International Financial Law Review.

Zalan T & Toufaily E (2017) The promise of fintech in emerging markets: Not as disruptive. Contemporary Economics 11(4): 415-430.

APPENDICES

Appendix 1. Interview questions for Fintech executives:

1. Could you please tell me a bit about how your career has led you to this point?
2. The regulation in the financial industry is changing drastically for example in Europe with the implementation of PSD2 – what effects will this have on the financial market?
    i. Is this type of regulatory reformation something that you have previous experience with? If yes, what kind of change was in question?
    ii. How much effort does this kind of change require from your company to adapt to a new environment? What kind of efforts are in question?
3. Which factors, in your view, will be likely to determine the competitive advantages between banks & Fintechs in the open banking market environment?
    i. What competitive advantages do Fintechs hold over banks?
    ii. What competitive advantages do banks hold over Fintechs?
    iii. What are the most relevant opportunities that open banking will provide to Fintechs?
    iv. What are the most relevant challenges that open banking will provide to Fintechs?
4. Is there mutual value in cooperation between banks and Fintechs in the new market environment?
    i. Why is it (not) important to cooperate with banks?
    ii. What are the possible benefits of cooperating with banks?
    iii. What are the possible compromises or drawbacks of cooperating with banks?
    iv. Which models of cooperation with banks are most relevant to you? Why?
5. What measures, other than cooperation with banks, can Fintechs take to gain competitive advantage in the Open Banking market environment?

6. What is the role of available funding in a successful market entry?
    i. Do you think that the available funding in the market for Fintechs will affect competitive advantage? How?

Appendix 2. Interview questions for Bank executives:

1. Could you please tell me a bit about how your career has led you to this point?
2. The regulation in the financial industry is changing drastically for example in Europe with the implementation of PSD2 – what effects will this have on the financial market?
    i. Is this type of regulatory reformation something that you have previous experience with? If yes, what kind of change was in question?
    ii. How much effort does this kind of change require from your company to adapt to a new environment? What kind of efforts are in question?
3. Which factors, in your view, will be likely to determine the competitive advantages between banks & Fintechs in the open banking market environment?
    i. What are the competitive advantages of Fintechs?
    ii. What are the competitive advantages of banks?
    iii. What are the most relevant opportunities that open banking will provide to banks?
    iv. What are the most relevant challenges that open banking will provide to banks?
4. Is there mutual value in cooperation between banks and Fintechs in the new market environment?
    i. Why is it (not) important to cooperate with Fintechs?
    ii. What are the possible benefits of cooperating with Fintechs?
    iii. What are the possible compromises or drawbacks of cooperating with Fintechs?

iv. Which models of cooperation with Fintech companies are most relevant to banks? Why?

5. What measures, other than Fintech cooperation, can banks take to gain competitive advantage in the Open Banking market environment?
6. What does the scale of a Fintech need to be in order for it to become a threat to a bank in terms of market share?