



Aalto University
School of Business

The impact of PSD2 directive on the financial services industry

Bachelor's Thesis
Kuura Tuononen
31.12.2019
ISM Program

Approved in the Department of Information and Service Management
31.12.2019 and awarded the grade



Author Kuura Tuononen

Title of thesis The impact of PSD2 directive on the financial services industry

Degree Bachelor's degree

Degree programme Information and Service Management

Thesis advisor(s) Riitta Hekkala

Year of approval 2019

Number of pages 24

Language English

Abstract

The revised Payment Services Directive (PSD2) modernizes European payment services and aims to foster innovation in the financial services industry. The directive brings two major changes: (1) the introduction of third-party payment service providers and (2) the requirement to use strong customer authentication for the initiation and processing of electronic payments. This thesis focuses on the first change, the introduction of third-party payment service providers, and researches its impact on traditional banks and Fintech companies. This thesis includes a literature review and empirical data from two interviews.

This thesis found out that the changes PSD2 bring increase competition in the financial services industry, which is a positive thing for the consumers. The directive creates new challenges for banks and new opportunities for Fintech companies. Traditional banks and Fintech companies should develop new solutions together as they both benefit from it. Banks should also develop their services further and look for completely new ventures in other industries.

Keywords PSD2, access to account, XS2A, Fintech, financial services

Table of Contents

Abstract

1	Introduction	1
1.1	Research objectives and research questions	1
1.2	Motivation and background	2
1.3	Scope of research.....	3
1.4	Structure of the research.....	3
2	Theoretical background	4
2.1	The changing financial services industry	4
2.2	Fintech.....	5
2.3	The revised Payment Services Directive (PSD2).....	7
3	Methodology	11
4	Results.....	14
4.1	Interview 1.....	14
4.2	Interview 2.....	15
4.3	Summary of the answers	16
5	Discussion and conclusions	18
5.1	Implications to practice.....	19
5.2	Suggestions for future research.....	20
	References.....	21
	Appendices	24

List of Figures

Figure 1. Investments in Fintech (Dealroom and Finch Capital 2019)	6
Figure 2. PSD XS2A adding more options for customers (Cortet et al. 2016)	8
Figure 3. Four generic strategic options for banks resulting from PSD2 XS2A (Cortet et al. 2016)...	9
Figure 4. The phases of a semi-structured interview-guide (Kallio et al. 2016).....	12

1 Introduction

European banks have, until now, maintained exclusive rights to their customers' bank account data which has allowed them to avoid competing with third party companies. EU regulation has changed this by introducing a revised Payment Services Directive (PSD2) that brings two major changes: (1) the introduction of Third-Party Payment Service Providers, and (2) Strong Customer Authentication. (Directive (EU) 2015/2366)

The directive introduces 'Access to account' (XS2A) which allows Third-Party Payment Service Providers (TPPs) access to customers' bank accounts with the customer's explicit consent. This means that customers can use third-party applications to, for example, check their account balance or make payments. European banks are forced to implement a way that allows TPPs access to the accounts. This can be done using Application Programming Interfaces (APIs). TPPs are regulated under EU rules. This creates an equal playing field for both banks and third parties and therefore increases the competition in the financial services industry. (European Commission 2019)

Another important change is the requirement of Strong Customer Authentication (SCA) for the initiation and processing of electronic payments. This means that customers must provide two or more of the following elements when making payments: knowledge (e.g. a password or PIN), possession (e.g. a mobile phone) and inherence (e.g. a fingerprint or voice recognition). This change aims to enhance the security of electronic payments. In some cases, like in transactions below 30 euros, the authentication is not needed. (European Commission 2019)

The introduction of TPPs has the potential to disrupt the industry (Romanova et al. 2018, Cortet et al. 2016). This thesis covers the impact from mostly the perspective of traditional banks, but also includes the viewpoint of Fintech companies. Strong Customer Authentication is more of a technical change and it will not be covered. The directive also contains many other changes that this thesis will not cover. This thesis focuses solely on the impact of TPPs entering the financial services market.

1.1 Research objectives and research questions

PSD2 introduces third-party payment service providers and this thesis researches the impact that they have on the financial services industry. The impact is covered from

mostly the viewpoint of traditional banks, but the viewpoint of Fintech companies is also included. In the end, I will conclude the situation and propose suitable strategies for banks.

The research questions of this thesis are:

RQ1: How PSD2 directive impacts the financial services industry?

RQ2: What opportunities it opens for Fintech companies?

RQ3: How it affects traditional banks?

1.2 Motivation and background

The financial services industry has been overgoing a change caused by changing consumer behavior and digitalization. However, European banks have maintained exclusive rights to their customers' bank account data and agreements with any third parties must have been done individually. PSD2 changes this and therefore opens a lot of new opportunities, especially for Fintech companies. It also creates new challenges for traditional banks. The directive has the potential to change the role of traditional banks and in some predictions, the role of traditional banks could change drastically (Hemmadi 2015).

The financial market has a key role in any economy's success as its main function is to channel financing from surplus to deficit. Any changes in the financial industry ought to be studied carefully. The directive increases competition and therefore, in theory, should lead to new financial products entering the market. Pohjola (2015) states that productivity in the finance business is relatively high but grows slowly. He says that the best way to accelerate the growth is to develop new products and improve operating models. Financial technology (Fintech) is Europe's largest venture capital investment category (Dealroom and Finch Capital 2019) and therefore any possible changes should be studied. There is not much research done on PSD2 as it is new legislation. This research aims to fill the gap by researching PSD2's impact on banks and Fintech companies.

1.3 Scope of research

This thesis focuses solely on the fact that PSD2 opens the payment services market for third party providers and leaves out other changes, like strong customer authentication. Furthermore, I or the interviewed people are not experts in security, so this thesis does not cover the security side of PSD2 thoroughly. However, some security issues are still covered in the literature review.

This thesis includes a literature review and the results of two interviews. Other people in the industry may have different views. Both interviewees are Finnish and work in the financial industry in Finland. The results could be different if the research was done in some other country.

1.4 Structure of the research

The rest of the thesis is structured as follows. Chapter 2 reviews previous literature on financial services and PSD2 and provides the theoretical framework for this study. Chapter 3 presents the methodological approach for the two conducted interviews. Chapter 4 discusses the results of these interviews. Chapter 5 concludes and summarizes the main points of this thesis and gives suggestions for future research.

2 Theoretical background

The financial services industry has been changing because of technological innovation and changing consumer behavior, but now EU regulation is also aiming to shape the industry by opening competition for third party providers (Directive (EU) 2015/2366). This literature review focuses on the digitalization of the financial services industry and the Payment Services Directive (PSD2). The goal is to understand the impact of digitalization on financial services, the meaning of Fintech and the changes that PSD2 brings.

Literature was searched using mostly Scopus and Google Scholar, but some literature was also found using Google's search engine. Literature was also gathered using backward reference searching. This means that references to already included literature were examined. Highest cited articles were preferred but, in some cases, the selection was quite small so picking articles was done by evaluating the credibility of the paper and the authors. The literature about PSD2 is limited as it is a new directive, so I had to focus on just a few papers.

2.1 The changing financial services industry

Digitalization and globalization have permanently changed the financial sector (Pohjola 2015). Today more than four billion people are using the Internet and the number is growing by more than one million every day (Kemp 2019). Many researchers believe that the Internet and digitalization have had the largest impact on technological development since the invention of the steam engine (Brynjolfsson and McAfee 2014, Pohjola 2014). In Finland, nearly all young and middle-aged Finns use online banking (Official Statistics of Finland 2019). Many researchers (Cortet et al. 2016, Gomber et al. 2017, Pohjola 2015) identify the advancement of technology as an important force in the transformation of the financial industry. Gomber et al. (2017) view expanded connectivity and enhanced speed of information processing as characterizations of the transformation.

Consumer behavior has also been changing. Gomber et al. (2017) state that nowadays customers demand intelligent and easy-to-use financial services no matter the location or time, and at continually decreasing costs. Face-to-face interaction has given way to online solutions for standardized products and even products and services that were once required to be tailored to customers (OECD 2018). Cortet et al. (2016) mention that consumers' expectations have changed significantly due to the prominent influence of

technology in their daily lives. They state that consumers expect greater speed and convenience also in payments and consumption of other financial services.

Pohjola (2015) mentions the physical intangible nature of financial services and states that these services can be completely digitalized and produced by other providers besides banks and insurance companies. He brings up crowdfunding of start-up companies as an example of financing mediated via the Internet. OECD's report (2018) also acknowledges that new payment technologies and digital financial services are altering the relationship between consumers and financial service providers and could prove disruptive for banks. The report states that digital technologies make it feasible for institutions to specialize either in production (where they bear the risks of the products and services) or in distribution (where they manage the customer interface). In contrast, banks offer a range of products without necessarily being optimized for any of them (OECD 2018).

Pohjola (2015) recognizes three main ways for financial companies to succeed in the competition. The first way is continuously developing services. The innovations do not have to be ground-breaking thus incremental development is fine. The second way is developing skills, knowledge and working methods of employees. The third way is creating a corporate culture that ensures that customer expectations for digital services are met. This requires digitalization and investments in IT, leadership, incentive and reward systems.

2.2 Fintech

Financial Technology or Fintech is a catchy label for the technological progress in financial services, but there is no clear consensus on what the term means. In some references, Fintech is used to describe the companies that provide any financial technologies or services and is often mistakenly assumed to include only start-up companies excluding well-established providers (OECD 2018). Other definitions define it just as a technology (OECD 2018, Schueffel 2016). Schueffel (2016) offers the following definition: "Fintech is a new financial industry that applies technology to improve financial activities." He also raises the question about the difference of the terms "Fintech" and "a Fintech", former describing industry and the latter a single entity in the industry. Lee (2015) makes a distinction between "sustaining Fintech" where existing financial companies use IT to sustain their business and "disruptive Fintech" where new players adopt IT to challenge traditional firms.

According to Arner et al. (2015), FinTech today comprises five major areas: (1) finance and investment, (2) operations and risk management, (3) payments and infrastructure, (4) data security and monetization and (5) customer interface. Investopedia (Kagan 2019) lists active areas of Fintech innovation: cryptocurrency and digital cash, blockchain, smart contracts, open banking, robo-advisors, and more. According to a report by Dealroom and Finch Capital (2019), Fintech is Europe’s largest venture capital investment category with 20 percent of all venture capital in Europe. The report finds that European investment in Fintech was \$5.1 billion in the first half of 2019. ‘Banking and payments’ was the largest area in terms of value created.

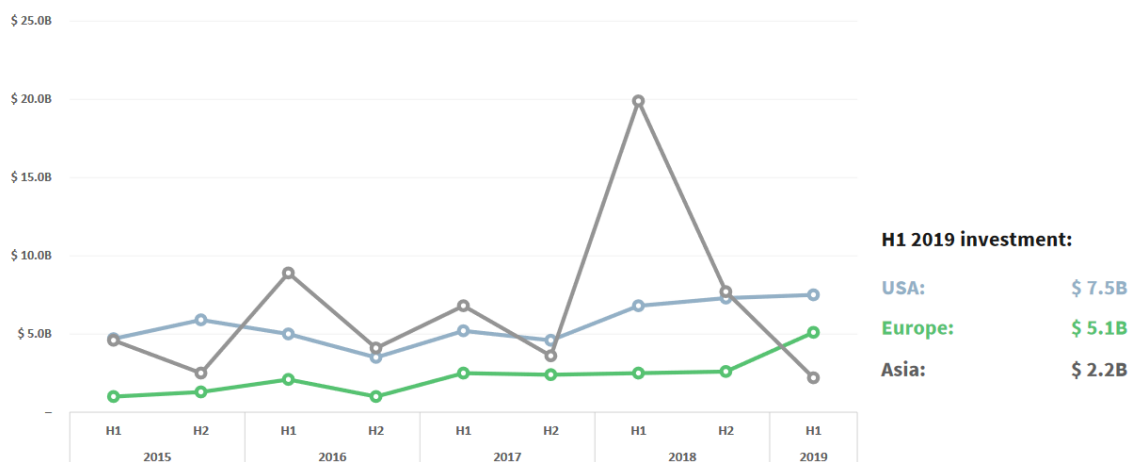


Figure 1. Investments in Fintech (Dealroom and Finch Capital 2019)

Some experts in the field believe that one day banks may only be used for deposits while everything else will be done by use of Fintech company services (Hemmadi 2015). Gomber et al. (2017) identify three main reasons why Fintech companies are gaining ground in the financial sector. First, they offer products and solutions that fulfill customers’ needs that were not filled before or the solutions were implemented badly. Second, Fintech companies have created novel opportunities for selling products and services through the application of new technologies. Third, companies with IT background are in a relatively better position to deliver services in a highly innovative environment.

Few examples of Fintechs are Tink, Revolut, and Swish. Tink was launched in Sweden in 2012 and is a platform that aggregates data from thousands of banks across Europe, allowing banks and other financial service providers to use the information to build and power services (Irrera 2019). In other words, they have developed APIs that offer one access point to financial data across Europe. Tink is among the companies hoping to take

advantage of PSD2 and has partnered with companies like PayPal, Nordea, and Klarna (Irrera 2019). Revolut is a British Fintech that offers digital banking services through a mobile app as an alternative to physical banks (Russon 2019). Revolut has 4.5 million customers and is valued at \$1.7 billion (Russon 2019). Swish is an app that allows the transferring of money from one user to another by using just the mobile phone number (Orange 2019). It started as a way to send small amounts of cash to friends but can now be used for almost anything in Sweden (Orange 2019). Similar apps exist in other countries, for example, Vipps in Norway and MobilePay in Denmark and Finland.

2.3 The revised Payment Services Directive (PSD2)

The revised Payment Services Directive (PSD2) was passed on November 16, 2015 by the Council of the European Union and went into full effect on September 14, 2019. The directive enhances and updates the old Payment Services Directive (PSD) which was adopted in 2007. The main objectives of PSD2 are to make payments safer, increase consumers' protection, and foster innovation and competition. The directive aims to improve the level-playing field for payment service providers, including new players like Fintechs. (European Commission 2019)

The directive introduces 'Access to account' (XS2A) which allows Third-Party Payment Service Providers (TPPs) access to customers' bank accounts with the customer's explicit consent (Finnish Financial Supervisory Authority 2019). Banks are forced to allow access by implementing Application Programming Interfaces (APIs). APIs have become a key concept of software development and they can perform tasks such as retrieving data or initiating other processes (Noctor 2018).

The directive introduces two different third-party providers that are Account Information Service Providers (AISP) and Payment Initiation Service Providers (PISP) (Directive (EU) 2015/2366). AISP is a service that provides information on one or more payment accounts held at other payment service providers. For example, AISP could be an app that links bank accounts from different banks and offers a viewing experience from one single app. PISP is a service that can initiate a payment on behalf of a customer from their bank account. All these third parties are regulated under EU rules (European Commission 2019).

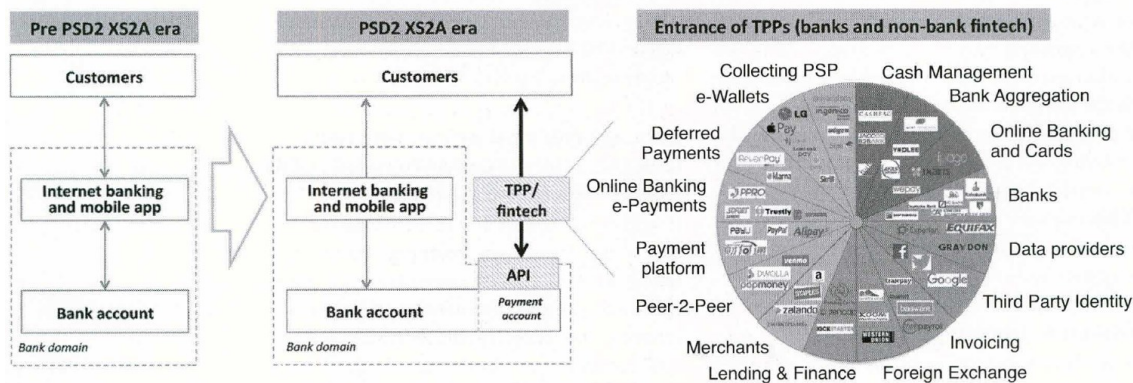


Figure 2. PSD XS2A adding more options for customers (Cortet et al. 2016)

Unlike many other industries, the changes brought by technological innovation in the financial services industry have been more evolutionary rather than disruptive (Mansfield-Devine 2016). However, many authors believe that PSD2 will have a disruptive impact on the industry (Mansfield-Devine 2016, Romanova et al. 2018). Cortet et al. (2016) view PSD2 as not just another regulation requiring mere operational and compliance approach, but an accelerator of the already on-going change in the digitalization prone financial industry. Casanova and Savoie (2019) state that recent and upcoming changes in the payments sector have made understanding the EU regulatory landscape more important than ever and this can be a key factor in a firm's success or failure in European markets.

Cortet et al. (2016) state that Fintechs are looking to capture the payment and non-payment related revenues that were long taken for granted by incumbent financial institutions. They see evitable that the threat of large tech companies (Google, Apple, Samsung, etc.), social media platforms (Facebook, Twitter, etc.), and ecosystems for digital payments and financial services (Amazon, Alibaba, Tencent, etc.) will grow because of the directive. Romanova et al. (2018) state that the competition in the industry is growing constantly from large technology companies (Google, Apple, Facebook, Amazon, etc.), large Fintechs (PayPal, Moven, TransferWise, etc.) and other existing and potential market players. However, Romanova et al. (2018) emphasize that the directive can be seen as both: a challenge and an opportunity.

Romanova et al. (2018) conducted a questionnaire for European tech companies and the participants believed that PSD2 will promote competitiveness, innovation, and development. They conclude that the perception of competitiveness is related mainly to low costs and customer satisfaction. Also, high quality of products or services, high speed of transactions, security, and privacy are perceived important. They believe that the

cooperation of the financial services industry with financial technology developers will ensure improved quality and efficiency of service and encourage the creation of innovative financial products and services. Gomber et al. (2018) also believe that competing with small and entrepreneurial start-ups in creating applications with major innovations will be difficult for larger incumbent firms. They suggest that larger firms should outsource these applications instead of making them in-house.

Cortet et al. (2016) identify three drivers that will impact banks' financial services and payment propositions. These drivers are (1) changing consumer behavior, (2) technology-driven innovation, and (3) European regulatory intervention. According to the authors together these drivers form a perfect storm of disruption. The authors identify four generic strategic options for banks: Comply, Compete, Expand and Transform. Comply is the minimal action required by banks and means just complying with PSD2 by opening APIs with a limited extent. The compete strategy involves competing with third parties with own innovative solutions and services. The expand option involves creating APIs that go beyond what PSD2 requires. The transform strategy combines the other options and is a 'bank as a platform' strategy including thorough APIs but also own solutions. These strategies can be seen in Figure 3 below.

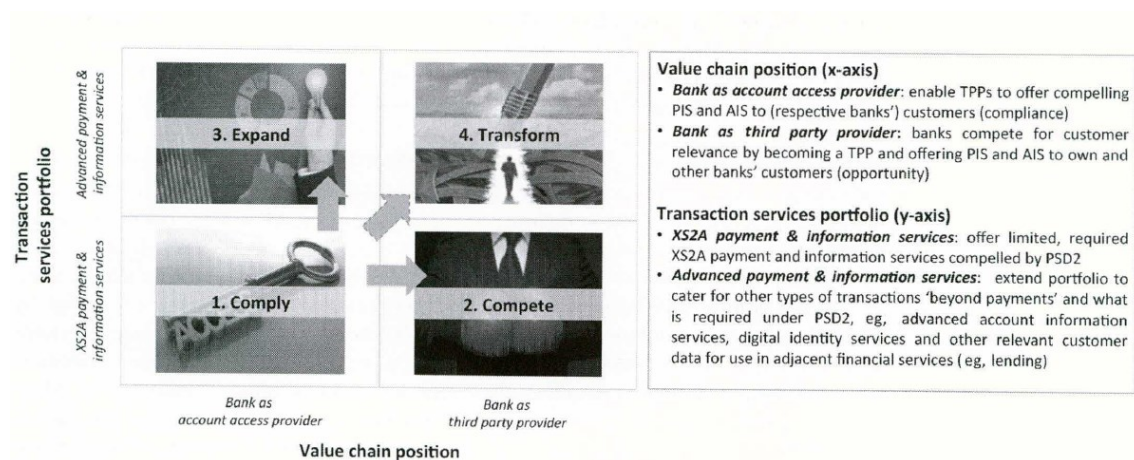


Figure 3. Four generic strategic options for banks resulting from PSD2 XS2A (Cortet et al. 2016)

Wolters and Jacobs (2019) state that PSD2 puts the development of the market for payment services as a higher priority than security and privacy. Noctor (2018) also raises the issue of security and believes that PSD2 will create security concerns among the banking industry. However, he thinks that there is a variety of security solutions to help keep customers' data safe. He states that banks spend a lot of money on security as their

reputation depends on it. However, third parties are different, and their mindset might not consider security as much of a priority (Noctor 2018). It is quite common for start-ups to rush ahead with a cool idea only to realize later that they had forgotten the security aspect (Mansfield-Devine 2016). Gai et al. (2018) mention that new technologies in mobile financial services could bring unanticipated cyber risks although the technologies were desired to introduce benefits.

PSD2 makes it clear that it is the banks that are responsible for the customers' data and any fraudulent payment or problems, yet they are not fully in control of it anymore because of third parties (Mansfield-Devine 2016). Noctor (2018) states that an API could provide attackers with the ability to break in and steal sensitive data or perform other malicious activities. Mansfield-Devine (2016) also mentions that for security specialists, another way to describe an API is an attack surface. He states that there are techniques to secure them, but ultimately the more doors you open, the bigger the attack surface gets. Noctor (2018) believes that the only way the banks can ensure that the data is safe is to force authentication and authorization through their own app.

Key takeaways of this literature review are that the financial services industry is changing, and new innovative players are entering the market. The revised Payment Services Directive creates new possibilities for Fintech companies on the already changing financial industry. Banks will face challenges and must choose their strategy carefully. Some researchers (Romanova et al. 2018) see that the cooperation of Fintech companies and traditional financial institutions like banks will ensure improved quality and efficiency of services and encourage the development of innovative financial services. The largest issue with PSD2 is the security of APIs, which many researchers (Mansfield-Devine 2016, Noctor 2018, Wolters and Jacobs 2019) have pointed out. Fortunately, there are ways to secure APIs, but ultimately the more doors you open, the bigger the attack surface gets (Mansfield-Devine 2016).

3 Methodology

This thesis links existing research with two new interviews and tries to form an overall picture of the situation in the industry. In the last chapter existing literature was reviewed in the form of a literature review. This chapter introduces semi-structured interview method and the interviewing process.

Semi-structured interview method is the most popular data collection method as it is both versatile and flexible (Kallio et al. 2016). One of the main advantages is that the method allows great reciprocity between the interviewer and the interviewee (Galletta 2013). The method requires that the researcher had some knowledge of the subject and it suits for studying people's perceptions about a complex issue (Kallio et al. 2016). Questions are determined before the interview, but they do not have to be followed strictly and the interviewer can ask follow-up questions based on the answers given (Kallio et al. 2016).

Compared to structured interviews, semi-structured interviews allow much more leeway for following up on whatever the interviewee sees important and therefore the knowledge-producing potentials of dialogues can be utilized better. The interviewee also has a better chance of being visible as a knowledge-producing participant rather than just hiding behind the interview guide. Compared to unstructured interviews, the interviewer has a greater say in focusing the interview on the topics that the interviewer sees important for the research. (Leavy 2014)

Semi-structured interviewing method was chosen for this study for the reasons above. I needed an interviewing method that allowed the interviewees to talk freely and go outside of the scope of the questions when needed. The possibility to ask follow-up questions was important and I got plenty of information from them. Additionally, I felt that I needed good reciprocity with the interviewees for discussing a subject this complicated. The structured interviewing method could have left questions unanswered or the answers unclear.

Kallio et al. (2016) identify five different phases for developing a semi-structured interview guide: (1) identifying the prerequisites for using semi-structured interview method, (2) retrieving and using previous knowledge, (3) formulating a preliminary interview guide, (4) pilot testing the guide and (5) presenting the complete interview guide. The authors state that developing a semi-structured interview guide rigorously contributes to the trustworthiness of the semi-structured interview.

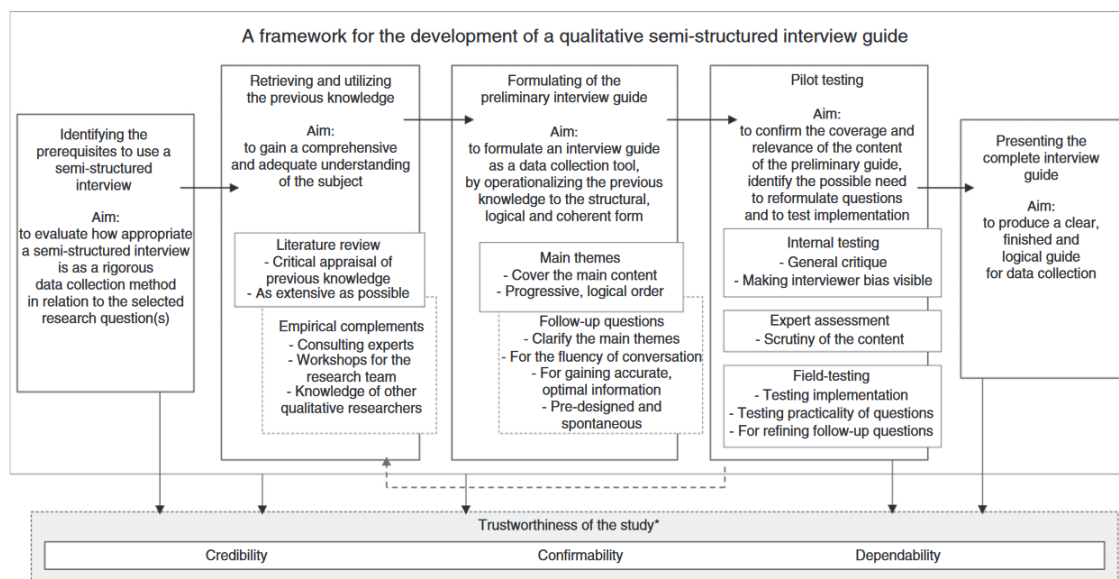


Figure 4. The phases of a semi-structured interview-guide (Kallio et al. 2016)

Before the interviews, I studied the subject through literature and articles to figure out the best questions to ask. I prepared a framework that included 10 questions which I went through with my thesis advisor. The questions were mostly open-ended, but few closed questions were also included to create variability. I also went through the interviewing process with another person to ensure that the interviews would go without problems. Some of the questions are introduced below, the rest of them can be found in the appendices.

- How has PSD2 changed the industry?
- How can banks compete against Fintech companies?
- What strategic choices banks have?

The interviews were done in November and December of 2019. Both interviews lasted for approximately one hour and included the same framework of questions. I did not follow the questions precisely, but I made sure that every question was discussed at some point. Follow-up questions were asked based on the answers that the interviewees gave. Both interviewed people were very knowledgeable about the subject, so I mostly listened to them talk and guided the discussion with follow-up questions. The interviewees had plenty of things to say so issues outside of these 10 questions were also discussed. Both interviews were recorded to assure the accuracy of the answers.

The interviews were anonymous so the real names of the interviewees or the companies are not mentioned and for this reason pseudonyms are used. The interviewed persons

both work in the financial industry in well-known companies in Finland and are well-versed in the directive.

In the next chapter, I will introduce the interviews. First, I will go through them individually and then summarize the answers.

4 Results

In this chapter, I will go through the interviews and discuss the answers. First, both interviews are introduced separately and then they are summarized together.

4.1 Interview 1

“Susan” has worked in the financial industry and tech industry for many years. She is very knowledgeable about PSD2 and has been working on implementing it in her company. She holds a leading position in a major company in the financial industry. Due to the anonymity of the interview, I cannot define the company or her position in more detail.

Susan believes that the main thing PSD2 has brought to the industry is that it clarifies the rules and makes them more even for all financial actors, also those from outside the European Union. She does not believe that the directive or any regulation is a transforming force in itself. Rather, the need for change has come from changing consumer behavior and technological advancement. She believes that regulation must react to these and PSD2 is the EU’s response to the change.

She mentions that the process of implementing PSD2 was not done that well by the regulators. All the details were not clear until quite late and it created some uncertainty in the industry. It was hard for banks as they had to implement the changes in time. It also created some uncertainty in Fintech companies as the details were not quite clear. She also brings up the lack of standards as a problem. However, she thinks that there was excitement in the Fintech circles anyway.

Susan believes that this kind of change was somewhat expected in the industry since the implementation of PSD1. She was not in the financial business at the time when PSD2 was published so she had not anticipated it herself. She mentions that there was some level of excitement in the Fintech circles. She does not think that the directive will be destructive for banks, but it will create new challenges.

Susan does not see the risk of monopolies forming to some players in the payment market as a big threat. She mentions that the payment ecosystem involves so many players and steps that it would be almost impossible for one player to be a monopoly. She gives an example: Facebook or some other company could obtain a monopoly-like position in friend-to-friend payments for people under 30, but that would be just one segment of the

consumers and just one type of payment method. There would still need to be all the other ways of payments and options for the people who would not want to use Facebook's platform. Also, payments involve many companies in different steps. She also mentions that Europe is still only the second-largest market in the world. If some player would have so innovative solutions that it could become a monopoly, it would most likely first happen in the United States where it has not happened either.

She brings up two things that banks have a major advantage when comparing to Fintech companies: capital and networks. These two things are needed when developing and marketing new applications. Fintech companies need to spend plenty of money to get their application or solution known in the public. Banks have the capital needed for marketing and they have direct channels to their customers. Additionally, people trust banks which is an important factor in the financial business. She also mentions a strategy that many banks use: testing waters with different innovative solutions and seeing if something gains traction. This could work great in collaboration with the Fintech companies. She also believes that not reacting to the change will lead to going out of business in the long-term.

4.2 Interview 2

"Mark" has worked in a bank as a cash management expert and a manager. He has worked closely with issues regarding PSD2 and has been involved in its implementation in his company. He is a bit younger than Susan and therefore represents a different generation.

Mark sees that the biggest drivers for change in the industry are technological advancement and changing consumer behavior. He mentions big data as an example with a lot of possibilities. He believes that consumers, especially younger ones, are ready to give up some privacy for more convenient solutions.

Mark believes that PSD2 was the EU's reaction to the situation in the industry and that its main purpose was to increase competition. He mentions that the European financial services industry had remained quite the same for a long time, but PSD2 brought some changes. He says that when PSD2 was first introduced it created some uneasiness in the industry. There was a concern about it taking over half of the income from banks' transaction fees. After some time, the atmosphere changed for better and people in the industry started to think about the implementation and opportunities it would enable. Now he thinks that the directive is welcome and that it brings a lot of opportunities.

Mark raises trust as the biggest competitive advantage that banks have. He also mentions other advantages: money, networks, and understanding of the industry and rules. On the other hand, Fintech companies are more agile, innovative and better with technology. They hold quite different advantages which makes them complement each other well. He firmly believes that the way forward is the cooperation between banks and Fintech companies. He says that banks will still maintain and develop their services like before, but new services will be developed with Fintech companies. He mentions services like mobile payments, personal finance, budgeting, and peer-to-peer lending. He believes that banks will find different Fintech partners and develop a wide range of solutions with them. He believes that there will be new solutions that should have been realized earlier. All this is good for the consumers and competition. He does not believe that any Fintech company will be the one who everyone must work with.

When asked about risks he mentions security and big techs. He says that APIs can always create security issues. However, he is glad that the directive has brought up some discussion about them and is not too worried about it. Mark sees that big techs are the best with data and security which could pose a risk in the long term. However, he sees that banks have a huge advantage in trust and that is not going to change soon. Additionally, venture in the financial industry requires a major investment and knowledge of regulation. He does not see monopolies as a risk: if one company would come up with some major new ideas, they would eventually face competition. He also raises EU regulation as one issue for big techs as the regulation can always change if the situation changes.

Mark thinks that banks should also expand to other industries with different experimentations. These experimentations could be anything: peer-to-peer lending, carsharing, healthcare, etc. This is not caused by just PSD2 and is a bigger trend in the industry. Banks have the capital and they need to find productive investments. PSD2 probably reduces the profits from transaction fees, but these profits can be found elsewhere.

4.3 Summary of the answers

The interviewees had very similar thoughts about the directive, and I did not find any drastic differences in their responses. Rather they just emphasized different points and raised different issues.

They both believe that the two major drivers for change in the industry are technological advancement and changing consumer behavior. They agree that the directive is not a changing force but rather a reaction from the European Union. Susan emphasized the fact that the directive clarifies regulation and sets an equal playing field for different payment service providers. Mark emphasizes that the directive increases competition and therefore benefits consumers. Both brought up that the directive's implementation was not done perfectly and there were a lot of unclarities until quite late of 2019.

Neither one sees the directive as an existential threat for financial institutions. However, they both believe that traditional banks need to react to the changing industry and be ready to try new innovative solutions. Both state that banks have advantages in competition as they usually have more capital, networks, and trust from consumers. Both see that banks should seek new opportunities by both developing new applications themselves and cooperating with Fintech companies. Neither one sees the forming of any payment provider monopoly as a threat. They emphasize that the behavior of consumers does not change suddenly and recognize the complexity of payment networks and competition.

In the next chapter, I will draw conclusions from the literature and the interviews and attempt to summarize the impact that the directive will have on the industry.

5 Discussion and conclusions

This thesis started with three questions: How PSD2 directive impacts the financial services industry, what opportunities it opens for Fintech companies, and how it affects traditional banks? Through a literature review and empirical data from two interviews, I will attempt to answer these questions in this chapter.

According to the interviewees, the financial services industry is changing mainly due to changing consumer behavior and technology-driven innovation. Cortet et al. (2016) also include European regulatory intervention as a driver of disruption. However, the interviewees see PSD2 as more of a reaction to the changing industry rather than a driver of change itself. The interviewees see that the directive's purpose is to foster competition and clarify the regulation of payment service providers.

PSD2 is an update to the old PSD and it modernizes European payment services. PSD2 brings benefits to consumers directly in the form of security and consumer protection. The requirement for Strong Customer Authentication (SCA) creates an additional step for some payments which consumers might see as a downgrade in convenience. However, its purpose is to enhance security which is a positive thing. The directive creates equal rules for traditional banks and other players like Fintechs. It opens the market for third-party payment service providers (TPPs) and therefore encourages innovation and competition.

The directive opens new possibilities for Fintech companies by introducing 'access to account' (XS2A) which gives third parties access to customers' bank account data. Before, Fintech companies had to make agreements with banks individually for accessing any customer data. XS2A improves the competitive position of Fintech companies and makes them equal competitors for delivering financial services. However, Fintech companies will still face challenges especially in funding and marketing which is why they should look for joint ventures with traditional banks.

PSD2 creates new challenges for traditional banks, but it will not be an existential threat for them. These challenges come in the form of increased competition and compliance with the legislation. The introduction of TPPs increases competition and puts some pressure on banks to develop their services. By increasing competition, the profits coming from transactions likely reduce. PSD2 compliance also requires resources from banks. The implementation of the changes, for example developing APIs, is costly and time-consuming. Maintaining and developing them requires resources also.

The main concern of the directive is security. Through the literature review, I discovered that APIs could provide attackers with an ability to break in and steal sensitive data or perform other malicious activities (Noctor 2018). There are ways to secure these APIs, but ultimately the more doors you open, the bigger the attack surface gets (Mansfield-Devine 2016). The interviewees or I were not experts in security, so this topic was not discussed in depth. However, one of them was pleased that the directive has sparked a discussion about the security of APIs. This is something that future research could focus on.

Through the interviews, I found out that there was an overreaction in the industry and media at the time of the directive's approval. The threat that TPPs would create was seen as a larger threat than it ended up being. "Mark", a manager in a Finnish bank, states that after the initial reaction the situation calmed down and focus was put on the implementation. Now he thinks that the changes the directive brings are welcome even though they bring new challenges.

5.1 Implications to practice

The competition in the financial services industry will grow and therefore new challenges for banks will emerge. In contrast, Fintech companies see new opportunities and can develop services that they were not able to develop before. PSD2 will not make traditional banks unnecessary or destroy their business, but it will force them to open up and think about new solutions.

European banks are now first time in a situation where their position in delivering financial services is truly challenged. However, banks are well equipped to face these challenges as they hold key advantages in several areas. They have capital, networks and an understanding of the industry and regulation. Still, traditional banks tend to lack the agility and innovativeness that smaller Fintech companies usually possess. For this reason, banks should look for developing new innovative solutions and applications together with Fintech companies. At the same time, they need to maintain and further develop their services. Additionally, traditional banks should look for ventures outside of the financial industry expanding their range of services.

5.2 Suggestions for future research

The amount of research about PSD2 is quite limited as it is new legislation. Also, most of the research is done before its final implementation as it took effect just recently in September 2019. PSD2 should especially be researched after some time has passed and the situation developed. Future research should focus on the position of banks and Fintech companies and review what kind of new applications and solutions have emerged. Additionally, future research should focus on the security and functionality of the APIs that banks provide.

References

Arner, D., Barberis, J. & Buckley R. (2015). The Evolution of Fintech: A New Post-Crisis Paradigm? University of Hong Kong Faculty of Law Research Paper No. 2015/047.

Brynjolfsson, E. & McAfee, A. (2014). The Second Machine Age.

Casanova, J. & Savoie, M. (2019). Navigating the EU regulatory landscape for payments. *Journal of Payments Strategy & Systems* Volume 13 Number 3. pp. 242-254.

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

Dealroom & Finch Capital. (2019). The State of European Fintech.

Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC.

European Commission. (2019). “Frequently Asked Questions: Making electronic payments and online banking safer and easier for consumers”. [Last accessed November 22, 2019]. Available at:
https://ec.europa.eu/commission/presscorner/detail/en/qanda_19_5555

Finnish Financial Supervisory Authority. (2019). “PSD2 changes payments.” [Last accessed December 13, 2019]. Available at:
<https://www.finanssivalvonta.fi/en/Consumer-protection/questions-and-answers/payment-services/psd2--second-payment-services-directive>

Gai, K., Qiu, M. & Sun, X. (2018). A survey on FinTech. *Journal of Network and Computer Applications* 103 (2018) pp. 262–273.

Galletta, A. (2013). Mastering the semi-structured interview and beyond: From research design to analysis and publication.

Gomber, P., Kauffman, R., Parker, C. & Weber, B. (2018). On the Fintech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services. *Journal of Management Information Systems* / 2018, Vol. 35, No. 1, pp. 220–265.

- Gomber, P., Koch, J. & Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. *J Bus Econ* (2017) 87:537–580.
- Hemmadi, M. (2015). FinTech is both friend and FOE. *Canadian Business*. Vol. 88, 10-11.
- Irrera, A. (2019). “PayPal backs Swedish financial tech startup Tink”. Reuters. [Last accessed December 31, 2019]. Available at: <https://www.reuters.com/article/us-paypal-hldg-tink/paypal-backs-swedish-financial-tech-startup-tink-idUSKCN1T50CR>
- Kagan, J. (2019). Financial Technology – FinTech. [Last accessed December 11, 2019]. Available at: <https://www.investopedia.com/terms/f/fintech.asp>
- Kallio, H., Pietilä, A., Johnson, M. & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. 2016 John Wiley & Sons Ltd.
- Kemp, S. (2019). “The global state of digital in October 2019”. We Are Social. [Last accessed November 26, 2019]. Available at: <https://wearesocial.com/blog/2019/10/the-global-state-of-digital-in-october-2019>
- Leavy, P. (2014). *The Oxford Handbook of Qualitative Research*.
- Lee, S. (2015). Fintech and Korea’s financial investment industry. KCMi – Capital Market Opinion.
- Noctor, M. (2018). PSD2: Is the banking industry prepared? *Computer Fraud and Security* 2018(6), pp. 9-11.
- OECD (2018). *Financial Markets, Insurance and Private Pensions: Digitalisation and Finance*.
- Official Statistics of Finland. (2019). “Use of information and communications technology by individuals”. [Last accessed: December 31, 2019]. Available at: https://www.stat.fi/til/sutivi/2019/sutivi_2019_2019-11-07_tie_001_en.html
- Orange, R. (2019). “Sweden: how cash became more trouble than it’s worth”. *The Guardian*. [Last accessed December 30, 2019]. Available at: <https://www.theguardian.com/money/2019/mar/09/sweden-how-cash-became-more-trouble-than-its-worth>

- Pohjola, M. (2015). Digitalisation and productivity in the financial sector. Aalto University School of Business.
- Pohjola, M. (2014). Suomi uuteen nousuun: ICT ja digitalisaatio tuottavuuden ja talouskasvun lähteinä.
- Romanova, I., Grima, S., Spiteri, J. & Kudinska, M. (2018). The Payment Services Directive II and Competitiveness: The Perspective of European Fintech Companies. *European Research Studies Journal*. Volume XXI, Issue 2, 2018. pp. 3-22.
- Russon, M. (2019). "What is Revolut?". BBC News. [Last accessed December 31, 2019]. Available at: <https://www.bbc.com/news/business-47768661>
- Schueffel, P. (2016). Taming the Beast: A Scientific Definition of Fintech. *A Journal of Innovation Management*. 32-54.
- Wolters, P. & Jacobs, B. (2019). The security of access to accounts under the PSD2. *Computer Law and Security Review* 35 (2019). pp 29-41.

Appendices

Appendix 1: Interview questions

1. Kerrotko lyhyesti työhistoriastasi? Miten pankkiala ja -palvelut ovat kehittyneet tänä aikana?
2. Oliko pankkialalla osattu odottaa PSD2:n kaltaista muutosta sääntelyyn ennen sen julkituloa?
3. Mitä mieltä alalla ollaan PSD2:sta? Eroavatko mielipiteet pankki- ja fintechpiireissä?
4. Miten PSD2 on muuttanut finanssialaa?
5. Mikä uskot, että oli direktiivin syynä? Millä tavalla se hyödyttää kuluttajia?
6. Näetkö direktiivissä riskejä?
7. Miten direktiivi on vaikuttanut pankkien fintech investointeihin?
8. Minkälainen kyky pankeilla on kilpailla fintech yritysten kanssa?
9. Mikä vaikutus kuluttajien luottamuksella on kilpailutilanteeseen?
10. Mitä strategisia vaihtoehtoja pankeilla on reagoida tilanteeseen?