

**LUT School of Business and Management**

Bachelor's Thesis

Financial Management

**A review of PSD2 and its impact to payment services business of banks in the EU**

**Maksuliikedirektiivi-uudistuksen tarkastelu ja sen vaikutus pankkien  
maksuliiketoimintaan EU:ssa**

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Author: Juuso Aalto

Supervisor: Sheraz Ahmed

## **ABSTRACT**

**Author:** Juuso Aalto

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Retail payments constituted around a quarter of total retail banking revenues in year 2015 in EU (Deloitte, 2015). The new payment services directive is opening the payment market for new players that will take their share of those revenues. The strong role of banks as intermediaries in payment chain is under threat because of emerging e-payment alternatives, and the legislative update gives a substantial push factor to it. The future performance of retail payment business of banks depends on their ability to adopt the change to turn threats into leveraged benefits.

This research examines backgrounds and reasons of revising the existing directive and specifies major changes in it by comparing the existing and the new directive to create an overall picture of legalities. The research is done by literature review of the topic and includes two alternative approaches for banks to take PSD2 into consideration on strategic level and an example of national implementation of the directive is presented.

PSD2 brings threats and opportunities to incumbent banks. It depends on strategic approach of banks and the adaptation rate of new competitive services, that PSD2 encourages, how the directive will impact payment service business of banks. The main reasons behind the new directive are explained by changes and events in market environment and by a single market strategy of the EU. PSD2 aims to ensure payment service providers equal competition environment resulting to greater efficiency, multiple choice of services and lower prices, transparency and strengthening the vision of harmonized payments market.

## TIIVISTELMÄ

<b>Tekijä:</b>	Juuso Aalto
<b>Tutkielman nimi:</b>	Maksuliikedirektiivi uudistuksen tarkastelu ja sen vaikutus pankkien maksuliiketoimintaan EU:ssa
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<b>Ohjaaja:</b>	Sheraz Ahmed
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Maksupalvelut muodostivat neljänneksen koko vähittäispankkiliiketoiminnan tuotoista EU:ssa vuonna 2015 (Deloitte, 2015). Uusi maksuliikedirektiivi avaa maksuliikemarkkinoita uusille toimijoille, jotka pyrkivät saamaan osan tuotoista. Pankkien aikaisemmin vahva asema maksujen välittäjänä on uhattuna kasvavien e-maksuvaihtoehtojen myötä, ja direktiivi uudistus kiihdyttää tätä muutosta entisestään. Tuleva vähittäispankkiliiketoiminnan suorituskyky riippuu pankkien kyvystä omaksua muutos ja kääntää siitä nousevat uhkakuvat hyödyiksi.

Tämä tutkielma valaisee taustoja ja syitä direktiivi uudistuksen takana ja erittelee keskeisimmät muutokset aiempaan direktiiviin kokonaiskuvan saavuttamiseksi. Kansallisesta direktiivin toimeenpanosta on tehty esimerkki. Tutkielma on tehty kirjallisuuskatsauksena aiheesta ja sisältää kaksi strategista lähestymistapaa, joilla pankit voivat ottaa PSD2:n huomioon toiminnassaan.

PSD2 tuo sekä uhkia että mahdollisuuksia vakiintuneille pankeille. Direktiivin vaikutus pankkien maksuliiketoimintaan riippuu heidän strategisesta lähestymistavasta ja uusien maksupalveluiden käyttöönotosta markkinoilla. Muutokset liiketoimintaympäristössä ja EU:n yhteismarkkinastrategia ovat pääajurit uudistuksessa. PSD2 pyrkii varmistamaan yhtenäisen kilpailuympäristön kaikille maksupalveluntarjoajille, johtuen tehokkuuteen, useampien maksupalveluiden tarjontaan ja niiden madaltuneisiin hintoihin, läpinäkyvyyteen ja yhtenäisen maksumarkkinan vision vahvistamiseen.

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## List of abbreviations

AIS – Account Information Services

API – Application Programming Interface

EBA – European Banking Authority

EPC – European Payments Council

Fintech – Financial technology

PIS – Payment Initiation Services

PISP – Payment Initiation Service Provider

PSD – Payment Services Directive

PSP – Payment Service Provider

RTS – Regulatory Technical Standards

SEPA – Single European Payments Area

TPP – Third Party (service) Provider

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Picture 1: A descriptive chart of API feature and services where it can be used. (Cortet, et al., 2016, p. 24: Innopay Analysis and European Banking Association)

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## 1. Introduction

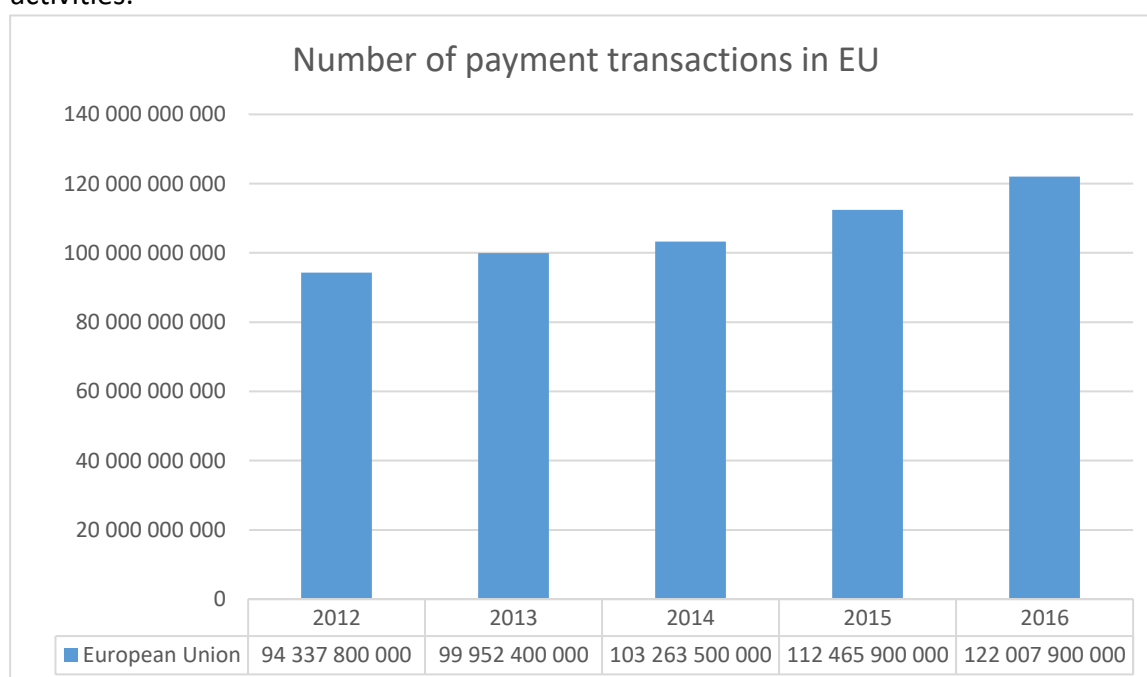
### 1.1. Argumentation of choosing the topic

Payment services directive 2 (PSD2) has been implemented into national laws in January 2018 and preparations have been in progress for nearly two years since the EU commission published the new directive on 23rd Dec 2015. Banks have been major leaders in intermediary business in the past, but their position has started to weaken due to new emerging competition from e-payment services. This is a huge impact to traditional banking business because this is the first time parties outside banking industry are invited to join in their application programming interface (Nair, 2017). This kind of development also transforms the nature of legislation from previous restrictive role to more of an enabler type of body (Riikkinen, 2016, p. 12). Major changes in legislation of transaction banking like this will shift the business area and will reorganize the roles of previous players, pushing banks to consider their strategic approaches to survive through this mandatory change as a winner. Purpose of this research is to light up those changes in payment chain roles and predict possible routes that business may take after payment service providers' adaptation to PSD2.

The EU's vision of a Single Euro Payment Area is an act towards cashless society and PSD2 is a step closer in that journey. This is all part of even bigger transformation shift that is evolving the whole society, and it's called digitalization. According to Honkapohja (2016, p. 3), it challenges old and established payment practices and will likely change them. Banking industry is in the middle of a large digitalization phase that affects first of all customers with different kinds of more convenient services but it also impacts the staff of banks with a risk of losing jobs. According to a survey on the availability and pricing of basic banking services in 2016 the amount of bank branches has declined to around one thousand from 1,500 in a six-year period in Finland (Financial Supervisory Authority, 2016). To understand the scope of this transformation further, two of Finland's largest banks OP (Helsingin Sanomat, 2017) and Nordea (Yle, 2017a) have announced major cuts in employees and main reasons for these are digitalization and opportunity to make several working tasks automated, for example granting a loan or insurance. This indicates how banking industry is moving to electronic and mobile services and the nature of commercial banking has changed, also because of cashless payment services. According to Nordea, digital financial services will reduce the use of cash through more user-friendly and safer services (Nordea Bank, 2017). Cash is expensive and risky way

for bank to operate with customers' wealth and on top of these it is more difficult to follow mandatory objectives to prevent criminal actions. As a conclusion, PSD2 will further accelerate the ongoing digital transformation and will bring more transactions under radar due to more convenient payment methods and less use of cash.

Size of payment market is massive. According to European Central Bank's (2017) payment statistics, the total number of payment transactions in EU in 2016 was 122 billion. As seen in chart 1 below, number of transactions has risen in EU for the past five years making payments market larger and everything including in it, for example security and risk management activities.



*Figure 1: Number of payment card transactions. European Central Bank (2017)*

The payment system used in Euro area, TARGET2, settled daily average of 342.008 payments and daily average value of €1.7 trillion in 2016. In 2015, European banks generated an estimated revenue from retail payments (from interest, transaction and product fees) worth €128 billion, forming around a quarter of total retail banking revenues (Deloitte, 2015). On top of payment amounts, business-to-customer ecommerce has risen 15% in 2016 and forecasted to grow 14% in 2017 in Europe according to European Ecommerce Report 2017. Also, when considering different fintech product types that are affecting financial industry, money transfers and payments is the most influenced area in digitalization process. The reason for this is, that the money transfers and payments have the highest adoption rate (17.6%) of all the fintech product types (Gulamhuseinwala, 2015, pp. 19-20). PwC Global



FinTech Survey 2016 indicates that consumer banking and fund transfer and payments will be the most disrupted sectors over the next five years. Payments, ecommerce and fintech statistics indicate how timely it is to update regulations to tackle significant growth going on in this area.

If banks don't develop, or only remain the same, other players will capture this business area and PSD2 brings appropriate push factor to the innovation process of whole industry. Due to creative destruction, fintech startups or tech giants have the opportunity to replace as mass' payment platform. Banks have to choose carefully their strategy how to co-operate with payment service providers, as Nordea did with Apple Pay (Yle, 2017b) and Tink app (Finextra, 2017) and chose their position in payment chain. Because PSD2 lets payment service providers to attach themselves in banks' application programming interface (API), banks can also choose to become a platform for services that customers can choose to use. These kind of single channel multiple-provider platforms could be dominant model for delivering financial services (World Economic Forum, 2017). This research will help to gain knowledge about potential options that could be beneficial for banks.

It is extremely interesting to see how profits will be redistributed due to third parties' involvement in value chain. The shift of profit pools must be monitored by regulators to identify new value chain, because incumbent banks may become less relevant when third parties may grow in importance (World Economic Forum, 2017). Profit pools could be a subject for a quantitative research, but it's however out of scope for this research because it would need data before and after implementing the directive. This research is a literature review connecting different published views of this topic to get a wide perspective on future of payments business in EU.

## 1.2. [Research problem, objectives and limitations](#)

The goal of this research is to present and evaluate the new directive and analyze how it possibly will change the payment services business mainly from the banks point of view but also from the point of view of consumers and third parties. This target is aimed to be reached by sorting out the essential changes between old and new directive and evaluate adaptation alternatives in change. To get the right picture of topic, diverse views of multiple sources from industry are used. Research questions are followed:

Main question:

*What threats and opportunities of PSD2 adoption can be seen from banks' point of view and how to prepare for them?*

Sub-questions:

*What are the main reasons behind the new directive?*

*What does the revised directive (PSD2) cover and what are the main differences between the old and the new directive?*

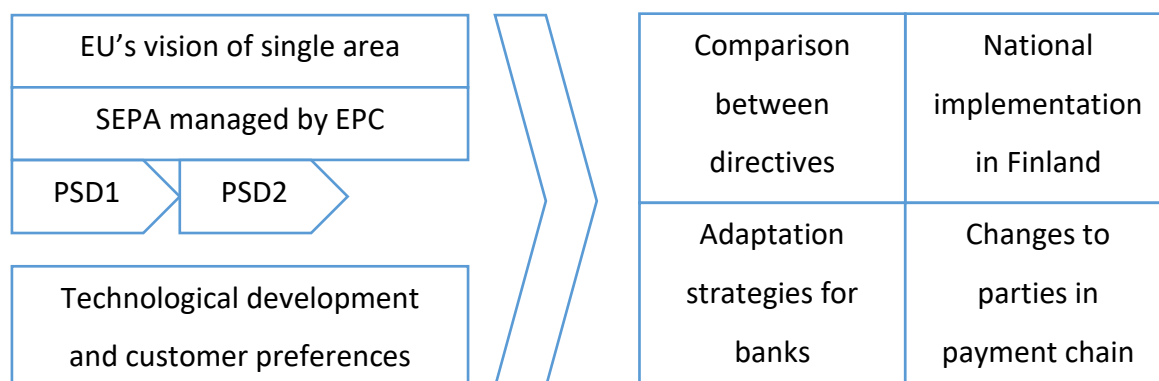
*Which kind of strategic approaches can banks utilize?*

Objective is to map possible strategies how banks can react to an update of valid directive and sort out major changes new directive brings. The limitations of this study are mainly tied to the fact that the directive was only implemented in the beginning of 2018, and thus there are limited amounts of information and studies related to the PSD2. The PSD1 will give a proper insight what led to reformation and specify differences between old and new one. PSD2 which is the core of this research will be defined by published articles and by main focal points. The EU, the European Payments Council (EPC) and the European Banking Authority (EBA) had all parts in making the directive and several parties in Finland took part in national implementation and are therefore introduced. Payment services and transaction banking industry are mainly affected industries and are therefore the main focus area of this thesis.

Results and conclusions from this thesis will be useful for everyone who will be affected by PSD2. Information conducted is useful for payment service providers for staying in front of development in the legal area of payments. It has to be remembered that the new directive was implemented in January 2018, and therefore there are no definite results yet of what the eventual impacts for the industry will be.

### 1.3. Theoretical framework

Theoretical framework reflects the main topic areas of this research. It creates basis for this research and points out its central study areas. It includes theoretical background, terminology and scientific methodological choices made for this research. (Hakala, 2017, p. 120)



*Figure 2: Theoretical framework of this thesis*

EU is trying to provide a platform for efficient payment services market through payment services directives, using them as building blocks. This means that same rules apply EU-wide, there is clear information on payments, they're fast and safe, and consumers also have a wide selection of payment services to choose from. Through these targets and by using directives to reach them, EU is aiming to a single payment area (SEPA) with a vision of having as easy cross-border payments as they are now in domestic transactions applying to costs as well. (EU, 2017a) The framework above in Figure 2 presents a starting position for this research and the outputs as a table.

### 1.4. Structure

First will be introduced the old Payment Services Directive 1, its background and key features to get deeper insight of the grounds of new revised directive. Next chapter will consider the reasons why it is timely to update such a directive and what kind of forces were behind the triggering effect to start planning it in the first place. Then the thesis will continue chronologically to the updated directive and specify its key point areas. After both directives are revealed, Finland's implementation process of directive to national law will be presented as a case example of an EEA country. Research data and method will be presented next in chapter three and chapter four will present the results of descriptive analysis used in this thesis. Chapter five will summarize the thesis and present conclusions, and the sixth chapter

handles topics for future research. In the end of this text there is a list of references and appendices.

## 2. Reformation of Payment Services Directive

This part will present and open theoretical framework mentioned in the introduction chapter in more detailed and comprehensive manner. It will start with backgrounds of the first PSD and will continue to explain how the EU ended up to new PSD2. Involvement of EU and SEPA are explained carefully because they play a crucial role in the development of payments market in Europe.

### 2.1. Payment Services Directive 1

#### 2.1.1. Aim of directive

The aim of PSD was to provide legal foundation for SEPA (European Central Bank, 2007). Consumers needed easy, efficient and secure payments throughout the EU and directive 2007/64/EC was created to set up a common framework to meet these objectives. Directive was applied on 25<sup>th</sup> Dec 2007 and it had to be added in national law by 1<sup>st</sup> Nov 2009 simultaneously replacing EU countries' national rules to make EU more similar. It amends directives 97/7/EC, 2002/65/EC, 2005/60/EC, 2006/48/EC and repeals directives 97/5/EC. (European Parliament and the Council, 2007)

#### 2.1.2. Key point areas of PSD1

The directive covers three key point areas, which are authorization, information requirements and rights and obligations. Authorization is required from a payments services offering institution to operate in the EU and they are granted by national authorities. Authorization demands strong governance arrangements and holding certain amount of capital (EUR 20 000 – 125 000 initial capital depending on payment services provided (The European Parliament and the Council, 2007)).

Users must be provided with comprehensive information about payment services they use. Before transaction all payable charges and complain procedures must be presented to customer. After transaction payer must be informed about reference and payee of the transaction, payment amount, fees and commissions of the transaction. Payment services provider is accountable for communicating this information. (European Parliament and the Council, 2007)

The directive states that payments in euros, or in a currency of an EU country other than Euro, outside EU are done within one working day. PSPs are made fully liable to payers for the execution of payments. This means if a transaction is not executed or is defective, then the PSP must correct it or refund the relevant amount to the payer. In case of an unauthorized payment transaction, the payer has to bear the losses up to a maximum of EUR 150. (European Parliament and the Council, 2007)

### 2.1.3. Single Euro Payment Area

Both directives represented in this research are closely attached to the vision and project of SEPA. Single market in EU for people, goods, services and money is one of EU's main goals (European Union, 2017) which they pushed forward through a directive in 2001. The event that triggered SEPA project was an issue between EU and banks. Euros as cash were launched but cross-border non-cash payments were still expensive and complicated, which wasn't a problem then because these high fees could be charged from customers. High costs from handling a cross-border payment came from processing, clearing and settling the payment (European Central Bank, 2009a). EU drove for change in this issue by adopting regulation no 2560/2001 which demanded banks to charge the same fees for cross-border and national payments. This factor restricted banks to charge high fees from customers while processing costs remained high – creating an imbalance between bank fees and costs for cross-border payments. This led banks to form the European Payments Council (EPC) in 2002 which is in charge of the SEPA project to reduce these costs. (European Central Bank, 2009b)

Background for SEPA goes as far as 1958 when European Economic Community was established creating a vision of an integrated Europe. The most visible act was probably launching of the euro in 1999 and changing it to common currency in euro area in 2002. In the same year together with launching the euro, a central bank payment system TARGET (Trans-European Automated Real-time Gross settlement Express Transfer system) was established and its successor, TARGET2, in 2007. Though it's less visible to consumers and its role is in back office operations, it's the backbone for technical execution for financial system in euro as well as is the implementation tool for the EU's single monetary policy. (European Central Bank, 2009a)

The objective is to shift national procedures to EU-wide and harmonize payment services within electronic payments. It enables convenient cashless euro payments inside euro area.

The operative part is led by EPC and implemented by the banking industry. One of the biggest impact is regarding banks' mutual relationships which are directing from competition to co-operation. To this date the EPC has designed practices for credit transfers and direct debits, and in addition payment cards and mobile payments are under progress (EU, 2017b).

## 2.2. Reasons behind reformation

The world keeps developing over time, while legislation stays static, and this is the ground reason that updates are eventually needed in legislative perspectives and especially in this kind of highly technologically influenced area. Part of the reformation is explained by changes and events in market environment which drove regulators to make a move. Other part is explained by EU's strategy and its power to push common objectives through member countries.

### 2.2.1. European Single Market

PSD2 is a part of EU's increasingly integrated single market. One of EU's greatest achievements is the European single market. EU has a vision of one territory with same regulation and free movement of goods and services. The target is to stimulate competition and trade, improve efficiency, raise quality and to reduce prices. When functioned well, every member country will benefit towards worldwide competition with greater economic growth and more convenient operation in EU. (European Commission, 2017) Part of the strategy is digital single market for business and consumers which fosters e-commerce by harmonizing EU-wide rules: "In a recent survey 57% of companies said that they would increase their sales to other EU countries if the same rules applied throughout the EU" (European Commission, 2017). Strategy mentions standardization to achieve its goals; technical specifications can reduce costs, improve safety, enhance competition and aid in adapting innovations.

### 2.2.2. Financial Crisis 2007-2009

Vision for integrated European system of regulation and supervision strengthened from the financial crisis 2007-09 come out in a report by the high-level group on financial supervision in the EU (de Larosière, et al., 2009). Lack of integrated regulation was mentioned as one of the reasons leading to crisis due to problems of information exchange and collective decision making between US and EU supervisors. New PSD2 could be considered as an act towards a more integrated world presented in the report. The group also presents the establishment of a European System of Financial Supervision (ESFS) which aims to ensure consistent and

coherent financial supervision in the EU (European Parliament, 2017). The ESFS today consists of the European Systemic Risk Board, three European Supervisory Authorities which are the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA), and the national supervisors. From these authorities EBA has a role in PSD2's level 2 regulations regarding strong customer authentication (Financial Supervisory Authority, 2017).

Another approach why financial crisis can be considered as a reason for updating PSD, is how it changed the business environment for financial services. There has always been technology involved in banking, but the birth and rise of fintech itself as known today is deeply rooted in the financial crisis, and the erosion of trust it generated towards banks. That, together with good timing due to digital natives (millennials), created right setting and demand for updating or at least approaching financial services from a new angle in the banking sector. (Chishti & Barberis, 2016, p. 10) Although EU encourages innovation for greater good, regulation follows afterwards. Technological and customer preferences' development has led to new user-friendly services which regulation doesn't cover yet and now it's time to update PSD to cover these gaps.

### 2.2.3. Broad involvement of technology and evolved customer demands

Besides the push from financial crisis to customer preferences, changing consumer behavior have been grown during digital technology's influence into our everyday life and naturally to payment process as well for the last two decades. The Internet's dominant force has driven to customers' developed expectations regarding seamless and personalized shopping and payment experience. The shift from cash payments towards non-cash has been ongoing together with integration of Internet and its applications into people's habits which has been also promoted by regulative manners, and now further with PSD2. (Cortet, et al., 2016)

According to an online banking penetration statistic in Finland from 2005 to 2016, share of all individuals using online banking and share of individuals who used the internet in the last three months have both risen steadily until 2013, followed by a steady phase in the end of the research period. The year 2016 shows 86% share of all individuals that use online banking which indicates how popular they are and also raises concerns of their security and therefore regulations matter a lot. Users of internet in the past three months of year 2016 were as high

as 92% which consolidates digital technology's position in Finns lives. (Statista Inc., 2017) The ground framework for electronic payments are built and market is receptive to adapt new digital innovations. Already at the time of the first payment service directive in year 2007 these numbers were 66% and 84% which are both high enough to develop digital banking services further. Together with the growth of mobile devices (smart phones and tablets) the need for mobile services has risen.

This kind of development has led to evolved customer demands for real-time, personalized and seamless payment experiences. Agile and high technology startups, or fintechs, have discovered this opportunity due to lack in banking services development, creating new competition for banks. Immediate payment infrastructures, blockchain, mobile authentication and the Internet of Things (IoT) have created new possibilities to perform a payment. PSD2 among other regulatory initiatives (regulation of interchange fees and the eMoney Directive) is increasing innovation further and is developing the industry. (Accenture Payment Services, 2016, p. 3)

### 2.3. Payment Services Directive 2

Now we have analyzed the reasons behind new directive and background of the existing PSD, we can proceed to examine PSD2 more closely. Main facts and purpose will be explained in the following sections.

#### 2.3.1. Key point areas of PSD2

The directive consists of 117 articles and six titles. The first title covers subject matter, scope and definitions (4 articles). The second title handles payment service providers and has two chapters for payment institutions and common provisions (33 articles). Third title is for transparency of conditions and information requirements for payment services and consists of four chapters that are general rules, single payment transactions, framework contracts and common provisions (23 articles). Title four covers rights and obligations in relation to the provision and use of payment services and has five chapters named common provisions, authorization of payment transaction, execution of payment transactions, data protection, operational and security risks and authentication, and alternative dispute resolution procedures for the settlement of disputes (43 articles). Fifth title is for delegated acts and regulatory technical standards (3 articles) and the last title presents final provisions (11



articles). (European Parliament and the Council, 2015) The structure of PSD2 is listed by titles and articles in appendix 1.

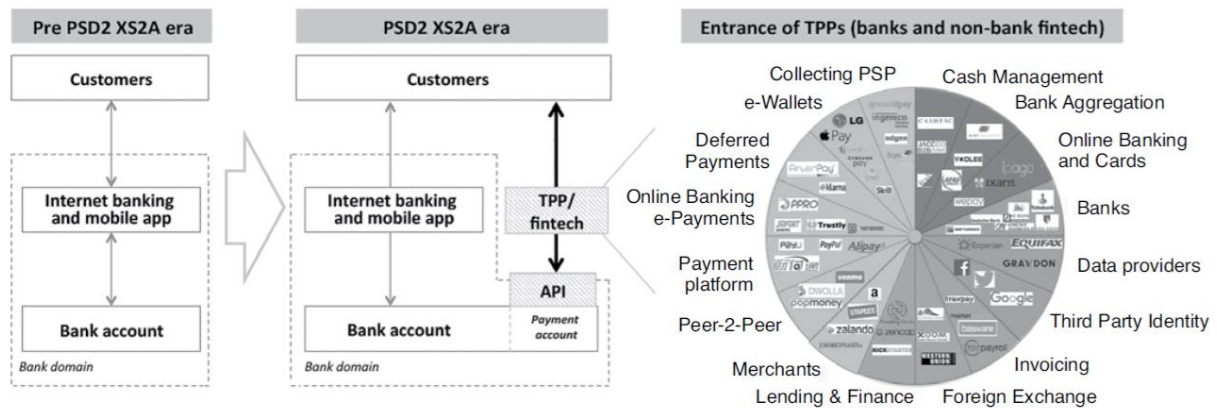
This section reveals what the new directive covers. It updates current rules for e-payments by widening the previous scope to take internet and mobile payments into account. This is a smart and timely solution considering how the incompatibility between cash and digital marketplaces is leading further towards cashless solutions (World Economic Forum, 2017, p. 39). Rules concerning strict security requirements for e-payments, protection of consumers' financial data, improving safe authentication aiming to reduce the risk for frauds. It increases transparency for payment services through improved requirements of conditions and information. Rules are also set for rights and obligations of users and payment service providers. Regulation 2015/751 complements the directive and puts a cap on interchange fees charged between banks for card-based transactions to reduce costs for merchants in accepting consumers' cards; this is same kind of move that EU did with directive 2560/2001 mentioned in SEPA chapter by putting a cap to cross-border payments. Directive is a statement for further and better integration in EU payments market. It releases a comprehensive set of rules for existing and new payment service providers aiming to equal competition, greater efficiency, choice and transparency of payment services. (European Parliament and the Council, 2015)

PSD2 opens EU market to new services and providers, especially in two kinds. It opens the payment market in EU for companies that offer payment services based on access to information about the payment account through open application programming interface (API). API is basically a technology concept that enables software applications to communicate without a human involvement (Cortet, et al., 2016, p. 22). These services can be divided into two areas: account information services (AIS) and payment initiation services (PIS). AIS allows the user to have an overview of his or her financial situation to better manage their personal wealth and finances. Article 67 (Rules on access to and use of payment account information in the case of account information services) states, that AIS providers shall not request sensitive payment data linked to the payment accounts. Term 'sensitive payment data' is explained in the directive as data which can be used for fraud, for example personalized security credentials. PIS allows user to pay with a simple credit transfer for an online purchase providing merchant an assurance of the payment that it has been started and goods or

services can be provided without delay. (European Parliament and the Council, 2015) According to directives article 66 (Rules on access to payment account in the case of payment initiation services) PIS providers are permitted to store sensitive payment data of the payment service user.

*Picture 1: A descriptive chart of API feature and services where it can be used. (Cortet, et al., 2016, p. 24: Innopay Analysis and European Banking Association)*

These PIS or AIS providers are not required to have a contract with the account holding bank



and they cannot be charged by the account holding bank for providing banking data they need for their service (Nielsen, 2016). The directive also covers third party payment instrument issuers under regulation. They could provide a card-based payment instrument that has been connected to users account, for example.

Consumer rights get an update with the new directive which will be listed in a user-friendly way by early 2018 by European Commission. This will hopefully spread the word comprehensively to ease the adaptation process and grow users' trust to new innovative services as well. Liability for non-authorized payments is reduced from 150€ to 50€ and direct debits in euros are covered with an unconditional refund right, these two parts will lower the risk of using new payment services. Surcharges are removed when consumer credit or debit card is chosen as a payment method. (European Parliament and the Council, 2015)

The new directive focuses in AIS payment institutions by demanding a professional indemnity insurance as a requirement to get authorized. Other conditions for authorization are not significantly changed, but rules are set for supervision of authorized payment institutions and actions in case of non-compliance. To keep consumers on track of trustful PSPs, EBA has to create a publicly accessible central register of authorized payment institutions which will be maintained by national authorities.

Role of the European Banking Authority (EBA) could be seen as a cooperative party between member countries in various situations. On top of central register, EBA has to resolve disputes between national authorities and build up cooperation and information exchange between supervisory authorities. EBA has to develop regulatory technical standards (RTS) on strong customer authentication which all PSPs must obey to provide secure communication channels. Strong customer authentication is presented in the directive requiring at least two out of three following factors: knowledge (something only the user knows, e.g. a password), possession (something only the user possesses, e.g. a mobile phone) and inherence (something the user is, e.g. fingerprint). In total, EBA complements the directive with 11 different level 2 regulations considering regulatory technical standards and guidelines. (European Parliament and the Council, 2015) Together with RTS, the electronic leaflet of consumer rights considering changes will bring credibility for consumers' adaptation.

As the regulative scope is broadened with PSD2 in many aspects, it is considering territorial scope of transactions as well. Titles III and IV (with small exclusions to the articles involved) apply to payment transactions that are in any currency other than of a Member State (Art. 2(3)). The revised directive takes into consideration transactions not in Euros that are done inside the Union (both payer's and payee's PSPs are located inside Union) or at least other one is, which are called 'one leg out' payment transactions. (European Parliament and the Council, 2015)

### 2.3.2. Aim of directive

To develop and integrate internal payments market further, directive 2015/2366 (PSD2) was created and applies since 12<sup>th</sup> Jan 2016 from the grounds of Green Paper on retail financial services (European Commission, 2015a). It must be included in national laws of EU member countries by 13<sup>th</sup> Jan 2018. PSD2 amends directives 2002/65/EC (concerning the distance marketing of consumer financial services), 2009/110/EC (on the taking up, pursuit and prudential supervision of the business of electronic money institutions), 2013/36/EU (on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms) and regulation (EU) No 1093/2010 (on establishing a European Supervisory Authority (European Banking Authority)), and repeals the old and yet valid payment service directive 2007/64/EC. The directive is established to set a clear and comprehensive legal foundation for existing and new PSPs towards better integrated internal

electronic payments market inside the EU. PSD2 aims to ensure PSPs equal competition environment resulting to greater efficiency, multiple choice of services and lower prices, transparency and strengthening the vision of harmonized payments market. (European Parliament and the Council, 2015)

#### 2.4. Comparison between directives

There are lot of similarities in major guidelines towards SEPA but the PSD2 takes also innovative emerging internet and mobile payments into account (EU, 2017a). In table 1 below main objectives and differences of both directives are specified.

*Table 1: Main differences between directives. (European Commission, 2015b)*

OBJECTIVES		MAIN DIFFERENCES - UPDATES TO PSD2
PSD1	PSD2	
To build a legal foundation for an EU single market for payments and to help SEPA in practice	To contribute to more integrated and efficient European payments market	Cooperation and information exchange between authorities is improved to increase authorisation and supervision of PSPs. Role of EBA is strengthened
To provide easy, efficient and secure cross-border payments between member states; "as secure as national payments"	To foster innovation, competition and more cheaper alternatives for e-payments, and to take them into account under regulation	Regulatory technical standards are published to make e-payments safer and more secure
To bring more transparency and information for consumers about payments, faster transactions, strengthened refund rights and clarified liability of consumer and payment institutions	To provide transparency and security into payments to make them safer and to protect consumer	"One-leg transactions" are included, in which other PSP is located inside the EU and other PSP is in third country. Consumer rights are increased and currency limitation is removed. The aim is to promote transparency to lower costs
To ease access for new PSPs to increase competition and alternatives to consumers	To ensure a level playing field for PSPs	Purchases through telecom operators are included and they are limited mainly to micro-payments for digital services
		Security policies are increased to obtain an authorization as a PSP
		Professional indemnity insurance is required from PSPs
		SCA is required to reduce the risk for fraud and to protect confidentiality of the user's financial data
		A legal framework for payment initiation services, account information services and payment instrument issuing

As can be seen from table 1, PSD was originally published to create ground rules for internal e-payments in EU area. It is corrected to better match payment services that are being used in time of constructing the directive. The revision has been made with payment service user in focus aiming to more convenient and cheaper services that still remain safe. The regional and currency scope is broadened to payments to or from EU reaching foreign currencies as

well. Possibly the update that has stimulated discussion the most is the creation of a legal framework for third parties' services through open API.

## 2.5. National implementation of PSD2 - Case Finland

This chapter will examine how a Member State will implement the revised directive into their national laws. Instead of reviewing every countries' procedures I decided to focus on one Member State, which is Finland. The payment services directive 2 must be transposed into local legislation by 13<sup>th</sup> January 2018 and it is transposed into Finnish law in two parts, first to the Payment Services Act and then to the Payment Institutions Act.

Titles III (Transparency of conditions and information requirements for payment services) and IV (Rights and obligations in relation to the provision and use of payment services) will be put into national legislation by changes to the Finnish Payment Services Act. (Kruhl, et al., 2017) The changes are prepared by a working group led by Ministry of Justice, which has representatives from the Finnish Financial Supervisory Authority (FSA), the Ministry of Finance, the Ministry of Transport and Communications, the Finnish Competition and Consumer Authority, the Confederation of Finnish Industries, the Finance Finland, the Consumers' Union, the Federation of Finnish Enterprises and the Finnish Federation for Communications and Teleinformatics (FiCom). The time period for this task was from 2<sup>nd</sup> May 2016 until 28<sup>th</sup> February 2017 (The Ministry of Justice, 2016). The draft for implementation acts and explanatory notes was published in March 2017 (Kruhl, et al., 2017).

Titles II (Payment service providers), IV and VI (Final provisions) will be implemented by changes to the Finnish Payment Institutions Act (Kruhl, et al., 2017). These changes are prepared by Ministry of Finance officials (Financial Supervisory Authority, 2017), and the draft was submitted in July 2017 (Kruhl, et al., 2017). From grounds of drafts, the final proposals (HE 132/2017 vp and HE 143/2017 vp) for law amendments for both acts were published to the Parliament in October 2017, which decides when acts are final (Financial Supervisory Authority, 2017).

The FSA has established a special PSD2 Monitoring Group to communicate relevant information to the industry, discuss interpretation issues, give guidance and advice to supervised parties. The Group is planned to gather once a month and to operate until summer of 2019 at latest. (Financial Supervisory Authority, 2017)

### 3. Research data and method

This research is conducted through recent literature review because of a new topic. The aim is to gather views from articles considering PSD2 and reflect them to reveal how this legal update will impact parties involved in European payment chain. Articles are used from relevant industry journals, banks' and EUs websites and industry reports to get comprehensive view of this topic. This research is a qualitative research from an event of revising a directive and the results will be based on descriptive analysis of possible effects of PSD2. A quantitative research was not possible for this kind of study of an event which could happen in the future. A quantitative approach would be suitable to study after the directive has been implemented nationally around EU to examine how big the change would eventually be. A case study method has been used in one chapter to present national implementation of the new directive to bring an example to reader's knowledge. By collecting information of a case from different sources it is possible to create a picture and understanding of the issue under examination (Metsämuuronen, 2011, p. 224).

### 4. Key changes in parties of payment mechanism within EU after PSD2

World Economic Forum (WEF) has picked four main themes that PSD2 focuses on: market efficiency, consumer protection, competition and security. Key changes include payment initiation services (PIS) that lowers costs and account information services (AIS) that increases security. Main uncertainties are about implementation timeline, compliance and level of emerging innovation. WEF pictures an end state where PSPs move traffic away from traditional cards through banks' API and capture payments data which would lead to decreased use of cards and smaller transaction fees. (World Economic Forum, 2017, pp. 49-50) PSD2, labeled as open banking standard, is thus expected to weaken banks' control over customer data and leading to platform banking business model. (World Economic Forum, 2017, p. 87)

Cortet et.al. (2016) see that PSD2 considers banks' repositioning in payments value chain and the size of their future transaction services portfolio and how are they going to be distributed. Banks will decide whether they're going to approach the revised directive as a compliance project or as an opportunity to reinvent themselves. It's pointed out in the publication that account information part adds major strategical challenges for banks to struggle with.

Selecting the right strategy and implementing it, is the most important and difficult task to ensure the most beneficial adaptation process for PSD2.

#### 4.1. Changes to banks

Competition in the area of payment services will increase due to third parties' involvement in payment chain and emerging innovation they bring. Banks can be left out from their previous position as handling a payment transaction all the way through to only for providing maintenance of accounts and providing strong customer authentication. What's interesting though, when viewing possible future revenue flows from banks' perspective, they are not allowed to charge third parties for using their infrastructure more than they would directly from a payer. This will lead to a tradeoff situation in a bank between growth in potential number of customers and increase in their payment habits vs. lost revenues to third parties and costs that are included in cooperation. Sounds like a very favorable situation for a challenger third party service provider to whom a beneficial groundwork has been made by directive. API landscape and a portion in customer and developer share might be under threat together with payment and data rich non-payment service revenues (Cortet, et al., 2016). According to Cortet et al. (2016) the key challenges for the head of incumbent financial institutions are ensuring relevant compliance, retaining customer relevance, maximizing market and revenue potential among transaction services. They also see how open APIs could reshape the distribution environment of services, which is a reason why it divides banks to ones that see reformation as an opportunity for closer cooperation with fintechs and others that see APIs as a threat to their business. These kind of up and downsides make it difficult for banks to define their approach to reformation.

The use of APIs is nothing new and the use of them has increased during the digital era to enable business services and digital products. In financial services industry, opening APIs will increase the pace of innovations and the full knowledge of how it will impact payment business is crucial for banks. This background information will help banks to detect possible threats about changing landscape to make leverage out of it for their benefit by evolving business models. To get better insight what an open API standard can do to a business environment, let's have a look at industries that have already gone through this transformation. Travel websites for example, which are nowadays collections of hotels and airlines, use APIs to access data from service suppliers (hotels and airline companies) and

produce a user-friendly interface for end user. This same idea could be used to present different financial services to user in one screen to show conveniently if there is a service that could be less expensive. Or a personal finance service that automatically does price bidding for user's electric company or phone bills. Another example of utilizing APIs was Netflix's disruption in shifting video rental business from Blockbuster to a video streaming service. The takeover was enabled through APIs to expand to new platforms quickly (smartphones and smart TVs). Services like technology infrastructure (Amazon Web Services) and customer relationship management (Salesforce) have also gone through transformations where API has been involved. (Accenture Payment Services, 2016)

While payments are a major revenue stream for banks, they are also crucial for interaction because they're of informative nature, forming strategic importance. Payments provide information for the use of a right product (credit card, loan, mortgage, savings account, insurance or wealth management) for customers' situation or lifestyle; payments are important for client relationship and cross-selling banks portfolio of financial services. The amount and value of data collected from payments is increasing, which increases the will to hold tight to it. This might be a good sign for customers but sharing data with competitors might turn out as risk for banks because of decreasing ability to gather data from customers. Chapter 4.1.2. will present strategy options for banks to adapt this necessity. (Cortet, et al., 2016)

The role of banks doesn't necessarily change much from what it is before the reformation because banks do offer payment initiation services and account information services already. For example, a service called Pivo from OP bank (launched in May 2013) offers a mobile app service for OP customers that reveals users account balance in real time and gathers data from the use of previous months and produces a forecast for future balance, based on balance history and repetitive events (salary, rent, groceries). It also shows average daily consumption for user and gives an option to add own future costs (holiday trip abroad, purchasing new car, medical expenses) to give more information for better planning to stay in track of own personal economy. The app does also aggregate expenses from same topic (a hobby, restaurants or transportation) to categorize purchases and to help in budgeting (the app also provides a tool for budgeting). This service is a great example of account information service and what kind of value AIS could produce for customers. Pivo does also provide a payment



initiation service for every banks' customers to make a purchase in online store (only in Finnish ecommerce) or in points of sale in retail transactions by contactless NFC payment method for android based smart phones. The app is also suitable to send or receive payments using a mobile number, which are called person to person transactions (P2P). (Pivo Wallet Oy, 2017) Banks have already had these services and will continue to offer them even after PSD2. If third parties would conquer whole market of these services, then the role of banks would be only to serve them as an account holding party for third parties' services working on top of them or to create a business out from a role of a platform provider.

#### 4.1.1. What happens to banks' payment services revenues?

According to Accenture Research Analysis of United Kingdom Merchant Service Charge 2016, in which evolution of retail payments revenue in the UK has been evaluated during years 2015-2020, changes in industry may lead to as high as 43% decrease in UK banks' revenues although the prediction has taken 20% organic growth into consideration. The changes in industry include evolved customer demands, emerging competition, advanced technologies and regulatory initiatives. Cap on interchange fees will lead to 27% decrease in revenues, which is largest individual factor to have an influence, the rest is following contributions of revised payment service directive, totaling 16% drop. 7% estimated decrease is made by digital disruptors (e.g. Apple Pay, PayPal, MPOS (Mobile Point Of Sale applications)) and 9% decrease will be caused by payment initiation services. These numbers are only from direct losses compared to cards payments revenues (excluding interest incomes and cross border retail payments) but indirect losses could also occur, in form of losing customer ownership that will result in decreased bank-customer interactions. (Accenture Payment Services, 2016, pp. 3-4) This may have a negative impact on the cross-selling of financial products and services of a large bank. PSD2 is set to accelerate industry's development which includes revenue losses for banks, but it will also create potential revenue stream opportunities which will depend on what kind of strategy does a bank choose to implement. These strategies are presented in the following chapter.

Through a possibility for PISPs to access to account by open APIs, payments value chain will change to a simplified one, and banks will lose fees from card-based transactions. PSD2 allows PISPs to fully bypass the card network and this way bypass the costs that they today bring and are paid by merchants. The Accenture research analysis has estimated that existing payment

model for debit card transactions in UK total an average service charge of 0,68% of the transaction value to merchants, which sums of acquirer bank (merchant's account bank) or processor fee (processor fee 0,04% and acquiring margin 0,2%) + card network fee (0,24%) + issuer bank's (consumer's bank that has issued the used payment card) interchange fee (0,2%). With PISP offering the same service, fees would total to 0,2% – 0,68%, and PISP would be the only intermediary to charge a merchant for payment service. PISPs will be charged by banks according to article 66(4c) *“The account servicing payment service provider shall treat payment orders transmitted through the services of a payment initiation service provider without any discrimination other than for objective reasons, in particular in terms of timing, priority or charges vis-à-vis payment orders transmitted directly by the payer.”* This kind of development would have been difficult to see happening without a mandatory order from a higher legislative body like EU.

The reformation of payment model can also affect current currency conversion and foreign exchange process by redistributing it within the value chain. Though presented threats to card network and payment value chain is real noticeable, it still depends highly on the adoption rate of PISP services. Merchants play a massive role in determining which kind of payment service to choose and which will thus qualify to a major predominant position, and lower costs work as incentive to choose a PISP. Merchants will have to integrate with a lot of new PSPs to their online stores or in points of sale in physical stores. This could be seen as adaptation costs by building up the infrastructure and then maintain the services. The merchant could also benefit from removed liquidity risk within a transaction and faster clearing of funds. PSD2 offers an opportunity for largely scaled merchants to integrate PIS to their business model, becoming a PISP themselves, and this way retain the merchant service charge. Examples of these are Amazon Pay and AliPay from Alibaba. In conclusion, banks are in risk of losing part of their transaction business or staying in the business but only for account service purpose for PISPs. Another factor that may reduce the use of cards are mobile payments, or mobile wallets, that may change to PISP model in the future. (Accenture Payment Services, 2016, pp. 8-9)

Besides direct losses of fees that can be easily seen in bank's balance sheet are loss of customer ownership, insight and brand awareness. The more TPPs take control of the market the more will bank's interaction get reduced and changes for cross-selling will fall. Though

banks have shifted through person to person interactions in branches first to online banking and then to mobile banking services, the evolution hasn't ever threatened the relationship between a bank and its customer until now. The possibility for third parties to access to account will move the presence of a bank to side and raises huge competition of customers' front office and their time spent in service providers' user interface or experience. Divide could be detected between front and back office services: New third-party service providers are managing user interface, user experience and direct customer contact; the front office services. Banks would take care of the back-office services, such as strong customer authentication, know your customer (KYC), anti-money laundering (AML) processes and maintaining accounts, which would be less visible to customers. Evolution can eventually proceed to breaking banking services to individual stand-alone products for a customer to use and choose from a single aggregated multiple digital service channel. Channel could be imagined as an app store, where all services are integrated with banks through open APIs to provide the apps with existing account and transactional data. This kind of banking as a platform could end up eroding their key competitive advantage, which is currently wealth of customer data and insight. (Accenture Payment Services, 2016, p. 9)

#### 4.1.2. Strategic options for banks to adopt PSD2

Accenture presents four strategies that play a major role in banks' approach to adapt changes that will be followed by PSD2. Strategies will consider bank's revenues, business model, customer relationships, market positioning and future growth. According to Accenture's research, those banks remain as winners of this transformation who make moves first to capitalize the opportunities that revised directive offers. Banks need to leverage the API integration and create a customer value ecosystem around their own banking portals.

##### *A. Compliance with PSD2*

Main focus is in complying PSD2 requirements and give third parties an access to data by providing a basic-level open API. This strategy will predispose the bank to disintermediation risk and a possible loss in customer interactions leading to a utility service for TPPs by managing customer accounts and processing payment transactions. Profitable services in this case could be liquidity and credit services offered through a TPP who owns the front office functions and customer experience.

### *B. Facilitation and monetization of API access*

Bank will also fulfill the required compliance matters and beyond that they will develop the API platform to an advanced one. Focus is in monetizing the access to raw data and banking services to create revenues. PSD2 requires open APIs to payment account transaction (PIS) and balance data (AIS), credit transfer initiation and account identity verification, but this information can be interpreted also in a way that every other data that TPPs could use in their business doesn't belong to that list. In other words, every other additional customer data, like customer demographics or identity documentation, is optional and could be charged to generate revenues. By extending APIs banks can also start to collaborate with third parties targeting to create new products and services from the grounds of additional datasets.

### *C. Provision of advice and new product/services*

Banks role will be an advice provider for insight and services to monetize data in this strategy. The required compliance will be again matched and after that the focus will turn to gathering highly customer centric digital banking portal to create value for customer by an ecosystem together with TPPs. This strategy and services it produces enhances customer loyalty and opens new revenue opportunities for both players. Banks can also gather more customer data through building their own payment initiation and account information services and this way have more touch points to customers. The key in this strategy is in leveraging customer data to connect different services and partners for cross-selling or to sell business and market insight created from customer data.

### *D. Expansion of the ecosystem and aggregation of value*

The last strategy presented includes all features from earlier strategy options and, on top of them, investments in open APIs. This aims to create more integrated partnerships with third party companies from any industry, in or outside of financial services, to create new revenue opportunities and value for customer. These partnerships are divided in two kinds, which are consolidation of services and consolidation of data, or in other words making bundles of services or data. Services are presented to get aggregated by offering new products/services from third parties through the bank's channel (online portal). Data can be consolidated by connecting customer data from third party systems and presenting it on the banks online portal, which would require consents and authorizations. The goal in aggregating everything

in one portal is to create a platform that reflects the customer's everyday needs and transactions to position the bank in the center of customer's daily life. This way bank could maintain the customer ownership, relevance and brand awareness to keep cross-selling products and services and to gather customer data. Through this kind of development, bank could be seen as an advice provider, value aggregator and access facilitator. In practice these could mean specific buying suggestions based on deep customer knowledge, a single solution to match any customer needs (whether it's financial or non-financial) or support to access these services not depending on time or place. This kind of system reminds of a massive far developed ecommerce site which connects all services and products that a man needs in life into an integrated user experience. Only financial services are new in today's ecommerce site, except growing payment services and credit purchasing possibilities.

Another approach is made by Cortet, et al., (2016) and it identifies also four generic strategic options, which are comply, compete, expand and transform. They point out how banking executives have to reconsider their future ambition, desired position in the value chain, the accompanying transaction services portfolio and impact on the operating model.

#### *I. Comply*

Complying requires minimal activities from banks. The main focus is in compliance and making third-parties involvement possible by cooperating to meet obligations of PSD2. This option may occur as challenging, considering future value chain position and service portfolio, but separate commercial partnerships or agreements could offset costs emerging from compliance, IT and other operational costs. This is the minimum expected from all banks.

#### *II. Compete*

By competing, banks will in addition to minimum tasks (comply option) create new services themselves to start a competition against third parties. This is clearly more offensive strategy to maintain and compete for customer relevance and requires a revision of operating model through increased competition. Banks would thus join with PSPs to offer AIS from own and other banks' accounts and PIS services.

#### *III. Expand*

Third strategic option that Cortet et al., (2016) present, is expanding banks service portfolio to services that are possible through open API and not only compete head to TPPs (competing strategy) but to compete with them in innovative perspective as well. The focus is on developing services beyond basic PIS and AIS. This is an opportunity for banks to create new revenue streams using their advantages in this area compared to newcomers. Banks' head start consists of more advanced account information to be leveraged, identity information and a broad financial services portfolio. The earlier mentioned mandatory KYC and AML procedures that bring expenses to banks could be turned into a profitable digital identity service that the new directive requires. This ideology is towards bank as a platform where safe and effective open access is provided to customer data.

#### *IV. Transform*

The last adaptation strategy presented is a combination of all three earlier ones and the primary focus is to create a bank as a platform business model. This way banks would become fully digital players, which is prevalent direction in financial industry at the moment. Banks and TPPs could be considered as frenemies in this strategy because they have to compete and collaborate at the same time for customer relevance. According to Cortet et.al. (2016) banks would have to form partnership strategies and define business models to monetize their platform.

New services and role shifts do not appear by themselves. Banks do need to restructure their operating model as they consider of strategies that will be chosen to be implemented. Strategic decisions will define volume and focus points of where to allocate resources considering staff or investments. The scope of ecosystem and partnership tasks will broaden from internal cross-selling of products and services to wide range of third party companies, beyond partners that already exist. This could mean a developed customer relationship management system or a proactive partnership management system that takes into account internal and external issues as well as customer value improvement in an integrated way. As APIs grow, the demand for their know-how increases at same pace. The more parties are involved in money transactions, the more security breaches can be expected. Both banks and TPPs have to take data security and identity issues into consideration, and the minimum is specified in the directive. As data becomes increasingly more important in business it has to be protected properly. (Accenture Payment Services, 2016)

#### 4.2. Changes to other parties

Consumers will enjoy economic benefits, improvement in consumer rights and in security. The directive will lead to increased competition in the e-payments market which will lead to lower prices and increased amount of choices to customers. (European Commission, 2015b) New services could mean better utilization for customers own finance, better budgeting or forecasting tool for example. (Cortet, et al., 2016) Another meaning for new services could be less use of credit cards and paying instantly from their accounts instead when shopping online (60% of Europeans do not even have a credit card). Although payments are somewhat shifting away from card based transactions, the PSD2 does still ban surcharging for most card payments. The new rules will also improve the card payment consumer experience around EU, so cards are not yet to be moved aside. Among these economic benefits, consumers are better protected against fraud, and the maximum amount to be paid in case of a fraud is lowered. (European Commission, 2015b)

Third party providers are companies that provide payment services and they can be divided roughly in two groups, which are fintechs and tech giants. Fintechs are agile companies that utilize technology with a small focus to achieve a niche market. They have been disrupting every part of financial services and payments as well. Large tech giants, or bigtechs, have entered payments business area like Apple (Apple Pay), Samsung (Samsung Pay), Facebook Messenger payments, Alibaba (Alipay) and Tencent (TenPay) to mention a few. (Cortet, et al., 2016) These kinds of companies have customer surface, data, resources, capital and technology expertise to use for competing payment services market. They are already connected in consumers' daily life which basically provides a payment infrastructure directly for user. (Riikinen, 2016)

Fintechs strength is focusing to improve a specific part of banks' operations and conquering a niche market from them. They apply technology in a new way to create an innovative service that outplays banks current offering. Fintech have an eye for designing, building and executing a very specific component of current value chain improving it better, cheaper and faster than banks do offer. Open API opens space even more for this kind of business to cover convenience, user experience and functionality gaps that exist. By discovering these and implementing a 'narrow finance' strategy, which is focusing on a specific part of the prevalent business model, they might be able to create a superior alternative, which PSD2 encourages.

After creating a successful alternative, they are open to expanding their product offering to other services and raise risk from a niche market to the whole portfolio of banking services. (Cortet, et al., 2016)

Although PSD2 is aiming to ensure PSPs equal competition environment, Riikkinen (2016) brings up a questionable note that is it still equal to demand banks to open their APIs which creates a whole new market where banks may lose some of their profits and business share. This can be considered as a cost for larger innovation for overall industry development, which is EU regulators' bigger goal, to get rid of inefficiencies for greater good. Riikkinen (2016) also adds, how through technological development it is easier to bypass valid regulation by moving to a country where it is more favorable to them. These countries or areas that provide beneficial operating environment will gain new jobs and capital that new or moving businesses produce. SEPA venture and PSD2 are making EU increasingly attractive in the eyes of fintech operators and payment service users.

Although PSD2 opens up in terms of innovation, the situation may still not be that beneficial as it could because of national reasons. For example, in Finland most of the world's most successful startups would be illegal from regulatory perspective. The biggest obstacle especially in fintechs is the lack of capital and its allocation to financial services startups. On top of these, Riikkinen (2016) mentions how collaboration between banks and fintechs is in early stage. He introduces term "frenemies", a combination from words friends and enemies, to present how banks and fintechs see each other, both in need of another as an opportunity despite the competition set. PSD2 pushes incumbent players to form partnerships with fintechs, and this kind of activity has already seen with OP (Lab Startup Program), Danske Bank (The Hub) and Nordea (Startup Accelerator). The revised directive is shaping national regulations to foster innovation and to become easier countries where to create new business.



## 5. Summary and conclusion

*What threats and opportunities of PSD2 adoption can be seen from banks' point of view and how to prepare for them?*

PSD2 brings multiple threats to incumbent banks. Banks may lose their market share and customer relevance in payment services to third parties and therefore suffer a loss in revenues, in use of traditional cards and in cross-selling other products. The rules will apply EU wide which means that business environment will grow and possibly brings more competition. Increased competition may lead to smaller transaction fees which will reduce revenues. Compliance expenses and possible complaint handlings or errors among new third-party services are difficult to forecast but have to be considered. Product developing landscape is under threat to shift to third parties which can slow rate of innovations in banks. Incumbent banks can also benefit from opportunities that the new directive raises. Banks could benefit from new innovative services of third parties and this way their customers could get better payment services; the size of future transaction services portfolio could enlarge. Less use of cash is easier and more inexpensive for bank to operate. More innovative payment services could mean more transactions which could mean more revenues. Partnerships may generate new revenue streams through new services. The rules will apply EU wide which means that business environment will grow and bring new markets to enter. Banks will face threats and opportunities, but how can they prepare to them? Banks need to stay relevant in developer landscape to get bright ideas and skilled staff. The head of banks need to carefully decide how to approach PSD2 and create a strategy to stay relevant to customers and keep cross-selling. The touchpoints of customer activity generate data for banks for eventually bringing added value to customer and for monetization. A broad market research would be smart to do to recognize what kind of demand there is for payment services and then use the information to shape banks' own service offer to match the demand better. This way incumbent banks could be ahead in innovation competition and make it more difficult for new competitors to succeed in their market.

*What are the main reasons behind the new directive?*

The main reasons behind the new directive are explained by changes and events in market environment and by a single market strategy of the EU. The market environment in payment

services has changed and an update to regulation was required. PSD2 is an act towards European single market to harmonize EU further. The need for integrated regulation has strengthened in financial crisis that also triggered innovation around financial technology. Fintech companies have created services that EU wants to cover under regulation and set the same rules for all service providers. Changing consumer behavior has been grown during digital technology's influence into daily life of a consumer and it has driven to customers' developed expectations regarding to payment services. Goal of the new directive is to develop and integrate payments market further in EU. The directive is established to set a clear and comprehensive legal foundation for existing and new PSPs. PSD2 aims to ensure PSPs equal competition environment resulting to greater efficiency, multiple choice of services and lower prices, transparency and strengthening the vision of harmonized payments market.

*What does the revised directive (PSD2) cover and what are the main differences between the old and the new directive?*

To see what the revised directive covers, the structure of PSD2 is presented in Appendix 1. The new directive updates the old one to better match payment services that are being used in time of constructing the directive. The main differences between the old and the new one are improved cooperation and information exchange between authorities, strengthened role of the EBA, RTS, one-leg transactions, an update to consumer rights and transparency, currency limitation is removed, purchases through telecom operators, updated security policies, required professional indemnity insurance from PSPs, SCA and a legal framework for payment initiation services, account initiation services and payment instrument issuing.

*Which kind of strategic approaches can banks utilize?*

There are two strategic approaches for banks to adopt PSD2 presented in this thesis. They both have four different options which vary in how much a bank is willing to put in when adopting PSD2. Banking executives have to reconsider their future ambition, desired position in the value chain, the accompanying transaction services portfolio and impact on the operating model. Strategies consider bank revenues, business model, customer relationships, market positioning and future growth. These are components that banks should include into consideration when planning a strategy for PSD2.

## 6. Future research

This research is highly dependent on industry experts' opinions and predictions of how will PSD2 be received. Having numerical data of the performance of payment services market before and after the revised directive would give us a ground for further examining of how much the industry eventually changed and in which direction. Opinions and different strategies presented in this thesis could be compared to numerical facts to find out which kind of approach has proved to be the most suitable for this kind of market situation.

Another approach for further research this topic would be to analyze emerging fintech companies' strategies how will they compete to success and what kind of strategical measures will it demand. Defining what core competencies and resources are required from rival third party payment service providers could lead to understand what it takes to succeed in this changing industry. Valuation of fintech startups for external financing or to buyouts could be useful for possible mergers and acquisitions in financial services industry. The same research could be done with data from bigtechs that prove to be major challengers. Their investments in R&D or to mergers and acquisitions could be examined to find which kind of strategy has proved to be the most successful.

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## Appendices

### APPENDIX 1. The structure of PSD2.

I: SUBJECT MATTER, SCOPE AND DEFINITIONS	III: TRANSPARENCY OF CONDITIONS AND INFORMATION REQUIREMENTS FOR PAYMENT SERVICES	IV: RIGHTS AND OBLIGATIONS IN RELATION TO THE PROVISION AND USE OF PAYMENT SERVICES	V: DELEGATED ACTS AND REGULATORY TECHNICAL STANDARDS
1. Subject matter	Chapter 1: General rules	Chapter 1: Common provisions	104. Deleged acts
2. Scope	38. Scope	61. Scope	105. Exercise of the delegation
3. Exclusions	39. Other provisions in Union law	62. Charges applicable	106. Obligation to inform consumers of their rights
4. Definitions	40. Charges for information	63. Derogation for low value payment instruments and electronic money	VI: FINAL PROVISIONS
<b>II: PAYMENT SERVICE PROVIDERS</b>	41. Burden of proof on information requirements	Chapter 2: Authorisation of payment transaction	107. Full harmonisation
Chapter 1: Payment institutions	42. Derogation from information requirements for low-value payment instruments and electronic money	64. Consent and withdrawal of consent	108. Review clause
Section 1: General rules	Chapter 2: Single payment transactions	65. Confirmation on the availability of funds	109. Transitional provision
5. Applications for authorisation	43. Scope	66. Rules on access to payment account in the case of payment initiation services	110. Amendments to Directive 2002/65/EC
6. Control of the shareholding	44. Prior general information	67. Rules on access to and use of payment account information in the case of account information services	111. Amendments to Directive 2009/110/EC
7. Initial capital	45. Information and conditions	68. Limits of the use of the payment instrument and of the access to payment accounts by payment service providers	112. Amendments to Regulation (EU) No 1093/2010
8. Own funds	46. Information for the payer and payee after the initiation of a payment order	69. Obligations of the payment service user in relation to payment instruments and personalised security credentials	113. Amendment to Directive 2013/36/EU
9. Calculation of own funds	47. Information for payer's account servicing payment service provider in the event of a payment initiation service	70. Obligations of the payment service provider in relation to payment instruments	114. Repeal
10. Safeguarding requirements	48. Information for the payer after receipt of the payment order	71. Notification and rectification of unauthorised or incorrectly executed payment transactions	115. Transposition
11. Granting of authorisation	49. Information for the payee after execution	72. Evidence on authentication and execution of payment transaction	116. Entry into force
12. Communication of the decision	Chapter 3: Framework contracts	73. Payment service provider's liability for unauthorised payment transactions	117. Addresses
13. Withdrawal of authorisation	50. Scope	74. Payer's liability for unauthorised payment transactions	
14. Registration in the home Member State	51. Prior general information	75. Payment transactions where the transaction amount is not known in advance	
15. EBA register	52. Information and conditions	76. Refunds for payment transactions initiated by or through a payee	
16. Maintenance of authorisation	53. Accessibility of information and conditions of the framework contract	77. Requests for refunds for payment transactions initiated by or through a payee	
17. Accounting and statutory audit	54. Changes in conditions of the framework contract	Chapter 3: Execution of payment transaction	
18. Activities	55. Termination	Section 1: Payment orders and amounts transferred	
Section 2: Other requirements	56. Information before execution of individual payment transactions	78. Receipt of payment orders	
19. Use of agents, branches or entities to which activities are outsourced	57. Information for the payer on individual payment transactions	79. Refusal of payment orders	
20. Liability	58. Information for the payee on individual payment transactions	80. Irrevocability of a payment order	
21. Record-keeping	Chapter 4: Common provisions	81. Amounts transferred and amounts received	
Section 3: Competent authorities and supervision	59. Currency and currency conversion	Section 2: Execution time and value date	
22. Designation of competent authorities	60. Information on additional charges or reductions	82. Scope	
23. Supervision		83. Payment transactions to a payment account	
24. Professional secrecy		84. Absence of payee's payment account with the payment service provider	
25. Right to apply to the courts		85. Cash on a payment account	
26. Exchange of information		86. National payment transaction	
27. Settlement of disagreements between competent authorities of different Member States		87. Value date and availability of funds	
28. Application to exercise the right of establishment and freedom to provide services		Section 3: Liability	
29. Supervision of payment institutions exercising the right of establishment and freedom to provide services		88. Incorrect unique identifiers	
30. Measures in case of non-compliance, including precautionary measures		89. Payment service providers' liability for non-execution, defective or late execution of payment transactions	
31. Reasons and communication		90. Liability in the case of payment initiation services for non-execution, defective or late execution of payment transaction	
Section 4. Exemption		91. Additional financial compensation	
32. Conditions		92. Right of recourse	
33. Account information service providers		93. Abnormal and unforeseeable circumstances	
34. Notification and information		Chapter 4: Data protection	
Chapter 2: Common provisions		94. Data protection	
35. Access to payment systems		Chapter 5: Operational and security risks and authentication	
36. Access to accounts maintained with a credit institution		95. Management of operational and security risks	
37. Prohibition of persons other than payment service providers from providing payment services and duty of notification		96. Incident reporting	
		97. Authentication	
		98. Regulatory technical standards on authentication and communication	
		Chapter 6: ADR procedures for the settlement of disputes	
		Section 1: Complaint procedures	
		99. Complaints	
		100. Competent authorities	
		Section 2: ADR procedures and penalties	
		101. Dispute resolution	
		102. ADR procedures	
		103. Penalties	

APPENDIX 2. The directive is complemented by level 2 regulations by European Banking Authority presented here.

<b>LEVEL 2 REGULATIONS BY EBA. RTS and GL.</b>
<b>Regulatory Technical Standards (RTS) on...</b>
Exchange of Information (Passporting) under Art. 28(5) PSD2
Strong Customer Authentication (SCA) and Common and Secure Communication (SCC) under Art. 98 PSD2
Home-Host cooperation under PSD2 Art. 29(6)
Central Contact Points under Art. 29(5) PSD2
RTS and Implementing Technical Standards (ITS) on the EBA Register under PSD2 Art. 15(4-5)
<b>Guidelines (GL) on...</b>
Professional Indemnity Insurance under Art. 5(4) PSD2
Authorization and Registration under Art. 95 PSD2
Incident Reporting under Art. 96 PSD2
Complaints Procedures by NCAs under Art. 100(6) PSD2
Establishment and monitoring of security measures under Art. 95(3)
Fraud reporting under PSD2