LAPPEENRANTA UNIVERSITY OF TECHNOLOGY
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Master’s thesis

Open business model implementation in financial industry: Case PSD2

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ABSTRACT

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The aim of this thesis is to understand the challenges financial industry is facing, when adapting open business model into their current business model. The phenomenon of business model is growing rapidly and the open business model opportunities are boosting businesses around the world. There are two themes in this thesis, first is the business model concepts and how they are defined and discussed in the literature and the second part is about open business model adaption in the financial sector. Based on literature and interviews, challenges that industry is facing are regulatory and cultural. Regulatory side can be seen as not so equal to the newcomers and the cultural problems are industry specific, where everything is related to risk management.

Adapting the open business model has also favourable value creation benefits, which are efficiency, customer behaviour changes and experimentation opportunities for boosting current business models and creating new ones. Current development in the industry is showing that financial institutions are diversifying their business models, transactional models are becoming an important part for sustainable growth.

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LIST OF ABBREVIATIONS

BM	Business model
OBM	Open business model
BMI	Business model innovation
OI	Open innovation
PSD	Payment service directive
PSD2	Payment service directive 2
XS2A	Access to accounts
EC	European commission
TPP	Third party provider
API	Application programming interface
AML	Anti money laundering law
KYC	Know your customer

1 INTRODUCTION

1.1 Research background

The rapid change in technological capabilities has changed how business is done for good. The capabilities that start-ups can have nowadays, have turned into competitive advantage to them. Large firms develop new ideas but do not bring them to the market, but give them to partners for further commercialization. (Chesbrough, 2007) This means that firms do not change their core business anymore, but look value from other places it is said that business model serves two core proposes: to create value and capture value. (Teece, 2010)

The increasing interest in the field of business model and business model innovation over the last years has caught the interest of academic, managers and entrepreneurs. The way that new disruptive firms change old ways of doing business, has lead us to the world where firms should rethink their way of doing business. Said that, the need to serve and provide more customer centric solutions to consumers, has dramatically forced firms to turn around their business model. (Frankenberger et Al., 2013) Amazon Inc has been an online platform for 20 years and now has started to establish and acquire physical presents. Knowing more about your customers, letting the customer do the work by picking, self-service technology give competitive advantages and loyalty building, which can best happen in physical environment. Apple Pay, that provide for IPhone users paying solution, both for online and in physical world. Even though Apple is not a financial service provider, they have customers who shop and giving and option to leave your wallet home creates customer value.

It is understandable that things are not simple and there are no recipes for success. Baden-fuller and Morgan (2010) discussed that business models aren't recipes that can be copied, even if we understand the function of business model. Business models are an amalgam of scale and role models.

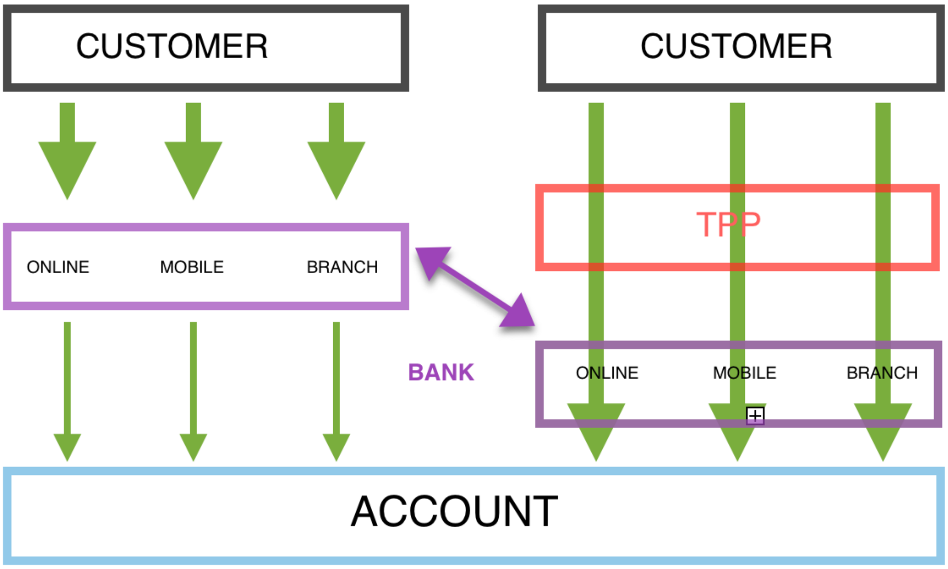
Seeing what others are doing, is not enough anymore to be competitive. The rise of disruptive business models has turned the need to understand the new business model development. Emerging business model concepts in academic literature are mostly related to technological advantages. After the dot com bubble in 2001 Amit and Zott (2001) already predicted that tremendous wealth will be developed around e-businesses. Arguably, they have not been wrong on that assumption. The important lesson, that can be learned from it, is adapting and modifying the business model constantly. (Amit & Zott, 2001)

The pressure to innovate and develop new business models can be very resource intensive. Developing a new business model builds up several challenges for incumbent firms. Said that, the way managers need to manage new business models and not change or cannibalize the old ones, is a challenge worthwhile. This can be done by establishing an autonomous business unit, for example. It is stated that the new business unit will add performance to the existing business. (Kim S & Min S. 2015) This all is possible by using the existing assets in a new way to deliver value to customers and not cannibalize the current business model, but providing something new.

Studies that focus on customer, state that they are important source for business model innovation and the model has to meet particular customer value. (Teece 2010, Spieth et al. 2014, Chesbrought 2002) This customer value seizing can best be captured by trying something out with real customers, that are paying real money, this provides exactness of getting it right. In a world of regulatory, this type of experimenting can be complex. Hence, trying it out with external partners, lowers the risk.

Functional thinking which comes from mathematics, where functions have inputs to produce out puts gives a certain type of a point of view for observing the phenomena. One of the most regulated and complexed industries is financial industry. Innovation rarely happens there and entering the market requires a lot of capital. Reinventing and opening up financial industry is a hot topic around the world. The major reason is cost efficacy, costumer friendliness and transparency. (Mackenzie, 2015) What this thesis is trying to examine is how financial industry will cope with the shift of being an old fashion industry, with very strict rules and high entry cost, to becoming a layer for third party providers. For understanding the situation better figure 1 explains the current situation and the one, that industry is currently processing.

Figure 1. PSD2 before and after



Directive on payment as a service, which was introduced in 2007 by the European commission(EC) has over the years made a lot of progress. Thea idea behind is improving competition, easier cross border payments and better customer value. This research will look into the revised version of the payment service directive (PSD1), which is the payment service directive 2 PSD2 from 2015. EC mission is to create an efficient and integrated market for payment services in the EU. This means that everyone in the area should have same rules. (Table 1.) PSD1 gave the legal fountain for EU single market payments. The revised version (PSD2) objectives are: more competition, payment safety and security, consumer protection and reduce customer costs. (Directives/2366, 2015)

Table 1. Payment services (Payment services, 2017)

PSD1	PSD2
Credit transfers	Consumer protection
Direct debits	Innovation in mobile and internet services
Card payments	Technical standards
Mobile and online payments	Easier and safer internet payment services

To simplify the process and the idea, if you own different accounts in Europe, in the future you can access them from one point. The before situation and the after situation can be found from figure 1. The illustration, describes the third party provider (TPP) interaction between the account and the customer. This is the core of Access to the Account(XS2A). Said that, the options and possibilities that it can provide are unlimited. PSD2 can be seen, as a very data and technology driven Directive, which in its core is for boosting competition, innovation and transparency. (Light et al. 2016)

Abstractly, you can have an account at one bank and use services from another bank. From the banks point of view, they would not like to share their customers with third party providers, due to risk of regulatory penalties. This is also one of the reasons why banks have stayed closed and very strict on developing new solutions. The core is not that banks would not like new services, they just do not want to give up their customer relationship and services that they provide. Although this might sound very bad for banks, the customers will have wider range of options, which is the core of the Directive.

It is not just that the third party can access the account, it is that third party can also initiate payments on the behalf of the client. What this situation means is that banks will provide infrastructure, access to the account, payment initiation, regulatory requirements, like anti money laundering (AML) and know your customer (KYC).

1.2 Research gaps

The existing literature is mostly about, what business models are and what a successful business model should have. After studying the literature about business models, the gap is related to open business models. Using the same resources as existing ones, but are third party provided. The open business model concept, which is competitors working together to build new markets and develop new business models. (Chesbrough, 2007) This is arguably the closest theory to the situation described before. What this situation describes is collaboration, but banks are not happy about that and would not do that themselves. This is the point where theory is lacking a clear foundation. If financial sector would have been asked to open up their infrastructure few years ago, they would say that they would not benefit from it.

Firstly, developing a new business model and a concept itself, carries high cost and risk. Considering that the life time of a product or a service is very short and the amount of investment it requires has over the years rise a lot, making it difficult for managers to take steps to execute plans that interconnect the whole firm. (Chesbrough, 2007)

Secondly, managing several or dual business models in the same market, giving out loans and at the same time providing crowdfunding under same brand. Situation when competitor is using the same capabilities and customers, can be considered as a risk for the current business model. This is a strategic situation, where we are linking business model innovation and firm's strategy together. There is evidence from emerging markets where, companies need to rethink their strategy for their products. (Spieth et al., 2016) Selling winter coats in tropical areas can be very challenging and not so profitable.

Thirdly, value for the customer in the competitive environment is always high. So, when everything is connected inside the business model, like openness, strategy and customer value, then the only way for a firm to benefit from them is to have a tactical advantage, which can not be copied. Casadesus-Masanell and Ricart (2010) state that business model which is chosen, has the important component of tactic, which determinates whether the firm will create and capture value.

The angle for this thesis is figuring out what should financial institutions do, to keep their customers in place and not became an infrastructure provider. The research on business models is not clearly explaining, how to manage several business models in an environment like that, but gives a foundation for it.

1.3 Research problem

Business model has been defined as a generic platform between strategy and practice. What this thesis is studying is the functions that open business model should have, when it is implemented in to a financial sector. The directive itself gives a foundation why open business model adaption would be a good for financial sector. Table 1 described the rules for the market. Steps in this case are called functions that describe the inputs industry has to make for archiving the market requirements. Financial sector is one of the traditional businesses, which is slow to make any changes. For understanding better, what type of action should be taken when implementing something new into the, sector question is asked:

What are the functions of open business model?

For supporting the thesis and gathering empirical evidence about the OBM, these questions are chosen:

What needs to be considered when designing an open business model with PSD2?

What are the advantage when implementing open business model into financial industry?

These question and sub-questions should help to understand the open business model benefits, in the world of rapid technological changes and the new entries which, challenge incumbent firms like never before.

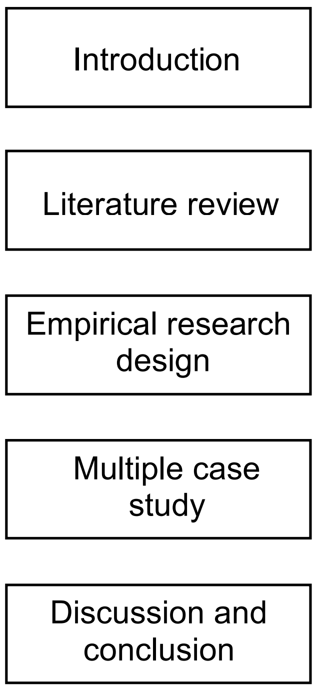
The aim of this thesis is to explore the inputs that financial sector needs to deal with, when normal business model functions will turn into open business model functions. The empirical part of the thesis tries to explore the strategic positions they have taken to deal with the situation and transform their business model. The discussion around opening their business, being innovative, even if the environment is restricting them. These all create a lot of challenges. The connection between literature, which applies that business models should be constantly re-engineered and experimentation is key for that, will be tested in the empirical part.

1.4 Research method and delimitation

In the empirical part the study explores the open business model functions, which affect the open banking phenomenon for the financial industry. The main purpose for choosing the financial industry is the pressure and the challenges that industry is having right now and in the upcoming years. Interviews are conducted with representatives who are responsible for implementation and execution of business model change in the area of open banking.

Data gathering is also done from secondary sources and from additional event(s) related to the topic. The major limitation is that the empirical part studies one phenomenon, which ca not be generalized. However, the similarities in the industry will have parts that can be generalized. The scope of the study is to understand the development of an open business model in the industry, managing external collaboration and what will be the customer value in all of this.

1.5 Structure of the thesis



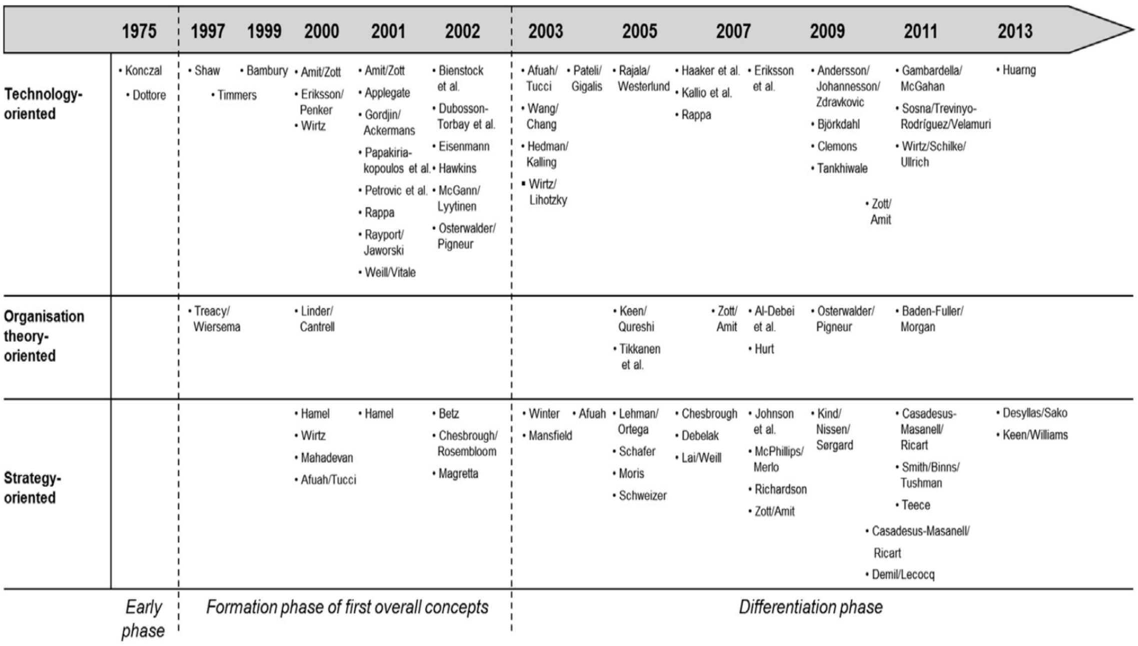
2 LITERATURE REVIEW

The purpose for this literature review is to study the existing literature, discuss and argument the business model and open business model concepts.

2.1 Business model

Business model concept is used often nowadays, and it is used related to technology and new business innovations, that are emerging to the market. The Business model (BM) concept in the literature represents mostly technological advantage that are made in different industries. The history of business model term is presented by Wirtz et al. (2016). The timeline about the literature (Figure 2.) has a very comprehensive outline, what has been studied. Hence, technology, is an important part, also organisational theory and strategy are also a part of the discussion.

Figure 2. Literature overview of the business model research field (Wirtz et al. 2016)



When it comes to defining BM, there is still no consensus about it. Wirtz et al.(2016) has a definition of BM" … *is a simplified and aggregated representation of the relevant activities* *of a company*". This thesis will discuss many different forms of BM, as mentioned there are different definitions for BM's Table 1. has list of them. These interpretations are also used throughout this study.

Table 2. Business model definitions

Author	Definition
Teece (2010)	"How a firm delivers value to customers and converts payments into profits "
Zott &Amit (2001)	"...business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities."
Zott & Amit (2010)	"…business model can either be conceptualized as set of transactions or as an activity system"
Chesbrough (2010)	"Business model fulfil specific functions"
McGrath (2010)	"..experimentation is key, within firms and across industries "
Baden-Fuller & Morgan (2010)	"Business models are combination of scale and role models"
Casadesus-Masanell & Ricart (2010)	"…refers to the logic of the firm, the way it operates and how it creates value for its stakeholders"
Al-debei, El-Haddabeh & Avison (2008)	"…essential intermediate layer between business strategy and business processes… "
Chesbourgh (2007)	"business model performs two important functions: It creates value, and it captures a portion of that value. "

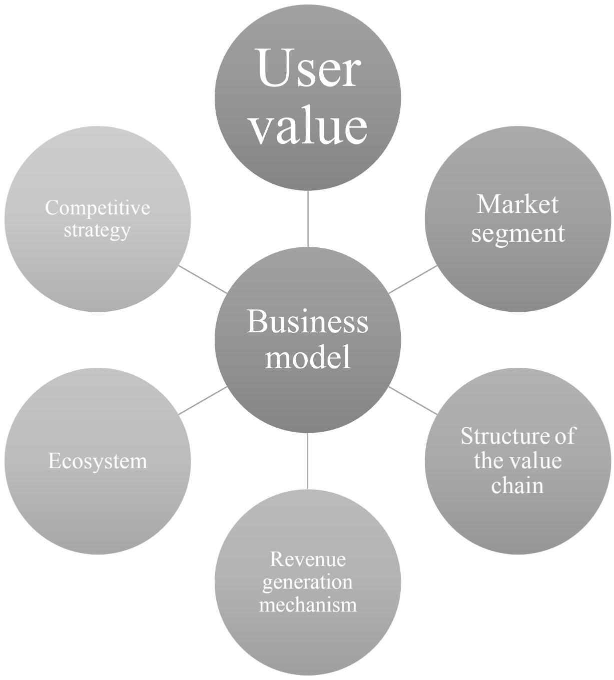
Gambardella & McGahan (2010)	"Business model always starts with the value proposition"
Schneider & Spieth (2013)	"Business model is a part of business model innovation, which requires firms to act "
Baden-Fuller & Haefliger (2013)	"Business models contain theory and assumptions about customer behavior and agency that may not hold in a specific situation"
Spieth, Schneckenberg & Ricart (2014)	"Business models tend to be complex, as they represent boundary-spanning entities that link dimensions of corporate strategy, technological capabilities and innovation processes of the firm "
Weiblen (2014)	"Business models describe the sustained value creation and capturing of a firm, independent of openness "
Kim & MIN (2015)	"Incumbent performance reward from business model addition is contingent on aligning incumbent assets with the right managerial choices"

Teece (2010) said, that BM's are often necessitated by technological innovations, which both create the need to bring discoveries to market and the opportunity to satisfy unsatisfied customer needs. Said that, technological advantages and the easy ways to bring new products to the market has boosted that. Al-Debei et al. (2008) said that even though the world of digital business is complex, new tools, internet and mobile technology is offering has changed the world for good.

However, it is not just technology, which merges the BM literature, it is also strategy, tactics, opportunities, barriers, innovation, experimentation etc. The core is that firms need to adapt new ways to do business and change their current BM's. There are several ways for exploring and finding new opportunities, and fighting with treats and competitors.

Starting with a strong argument: technology itself has no single objective value. (Chesbrough, 2010) The business model itself, won't make the technology a commercial product, it must be explored and the value needs to be found. Rosenbloom and Chesbrough (2002) have come up and opened the functions of BM, and where the innovation might accrue. This very practical definition helps managers, entrepreneurs and academic to better enrich the current BM. These functions can be found from figure 3.

Figure 3. Functions of business model (Rosenbloom & Chesbrough 2002 p.533-534)



These six functions that business model fulfils, explain the value proposition of the business model, where the money is coming from, which market segment and how the specific revenue is driven. For generating value, the firm must have a structure of the value chain and supporting function that make it possible. For estimation and expectations, it provides the information on how costs and profits work together for value capturing. In simple terms, how much it will cost and what is the profit we will be making. Lastly, the strategy, which leads the success and keeps the firm in a better position, compared to the competition. For firms to take advantage of that, they need both understanding of technology, market and the strategy for being successful. Said that, the understanding behind the market is the economic value for fulfilling that, it is required to understand the customer needs. Chesbrough and

Rosenbloom (2002) explain that with two cases, where appropriate business model was not captured, even though the technology itself looked good.

The relationship with biology and economic models can be connected to business models, by emphasising that, both use models to represent the whole picture. Models need to be investigated to provide a full understanding on how the model works and to know and understand its qualities. (Baden-Fuller and Morgan, 2010) Economists use mathematics, to model things and find out the probabilities that might happen, when numbers are changed in the formula and biologists do the same but in the "real" laboratory environment. After that, it all comes down to things that are found and the way they are implemented into business model. Manipulating the current, or as we say the normal form of our operations and disrupting it to see what happens.

Experiments and simulations can describe the business model for academics, according to Baden-Fuller and Morgan (2010) the most secretive and challenging thing is to see inside the entrepreneur mind, who has the insider view. This is far from simulations and experiments, where the person can be seen, as piece of a firm. This gives the individual a possibility to test a business model with real-life results and learning capabilities.

A chef who can improvise with different ingredient, can also be seen as a business model innovator. With tacit knowledge, that chef has about a recipe that already exists, the chef can provide an entirely new taste for the customer. Baden-Fuller and Morgan (2010) discusses that, not all cooks can make all recipes work. Even if you understand the recipe that your competitor is using, you might not be as successful with it. As previously said, it is hard to replicate something that an entrepreneur knows.

World where technology plays important part of business success, parts like innovation, plays an important role for sustainable growth. Casadesus-Masanell and Ricart (2010) find that two major drivers for business model innovation are behind IT and 'bottom of the pyramid' business models. However, little attention is turned on financial sector. To do the complexity of the business models they have and the high entrance fee. These different operations that they do, can be seen, as parts, which work together to build a system. Business model, can also be made of different parts, which include choices that design specific logical operations and deliver various reward to different stakeholders. These various parts play huge role in the financial industry. Choices that they will make will define what their end role will be. They rely on three key choices: polices, assets and governance structure. (Casadesus-Masanell & Ricart 2010)

Polices like who do we work with, form the external parts, and give a strong message to the clients. Assets distribution can specify where the growth will be in the upcoming periods, which is a reflection on their strategic goals. Governance structure, which is one of the most important parts of financial institutions, determents the level of innovation and how different parts of the organisation exchange information.

Strategy is called as a *plan of action* to accomplish something. Strategy can be called as a structure of things that are done in an order. As Casadesus-Masanell and Ricart (2010) point out choosing a particular business model means choosing a particular way to compete. For having a good plan, we have to make good choices.

There is no clear line where BM and business strategy separate from each other. (Porter, 2001; Stähler, 2002; Pateli and Giaglis, 2004, Al-debei et al. 2008) This means that when designing a business model, the strategy is already a part of it. However, the second component, which has come out is the process part. The discussion about digital business, and how the technology has delivered ways of doing business differently, especially from processes part, has changed quite much. (Al-debei et al. 2008)

Difference between business model and strategy comes from observation. We can observe from outside, what is the current business model of a firm. For figuring out what will be the future BM, we need to find out what is the business strategy. Casadesus-Masanell and Ricart (2010) point that out that we do not know the exact plan of the firm by just observing what they are doing. Another point, that is brought out is that the industry itself changes constantly. Knowing what our competitors are doing or who enters the market or leaves the market, is still a crucial information for any firm. What is learned from that, is that strategy is a lot more than business model because it is a system, that changes and develops over time. We can see from the outside that every firm has a business model on which basis it operates and makes choices however not every firm has a strategy.

The discussion follows Caves' and Chemawat's elements of strategy, which are the committed choices that design the business model. Strategy, business model and tactics are different concepts, which should also be treated separately. This means that constructing a business model, is more of an art than science. By separating these from each other, we can build a novel and different ways to compete. This means that knowing and having the outside view plus the inside designer view of the business, tactics and strategy can give a competitive advantage, over others' in the same industry. This means that the interconnection that affects each of the business models has tremendous value. (Casadesus-Masanell & Ricart, 2010)

Innovation whether it is a new technological advantage can not be a competitive advantage. (Teece, 2010) Hence, the logic behind innovation is that, there are different supporting resources and factors playing role. For business model innovation, it is not required to invent a new form of business, success can also be archived by outsourcing or deconstructing necessary components. Reengineering the global trend of outsourcing into back sourcing, which could boost the business model innovation, by product quality and on market time. (Gambardella & McGahan, 2010) However, making mistakes will have a long-term impact for the business model. In fact, getting the business model right, will bring success, but getting the resources and factors surrounding the BM right, will build a competitive advantage (Teece, 2010). This also supports the idea behind several parts that influence the competitiveness and sustained long term growth.

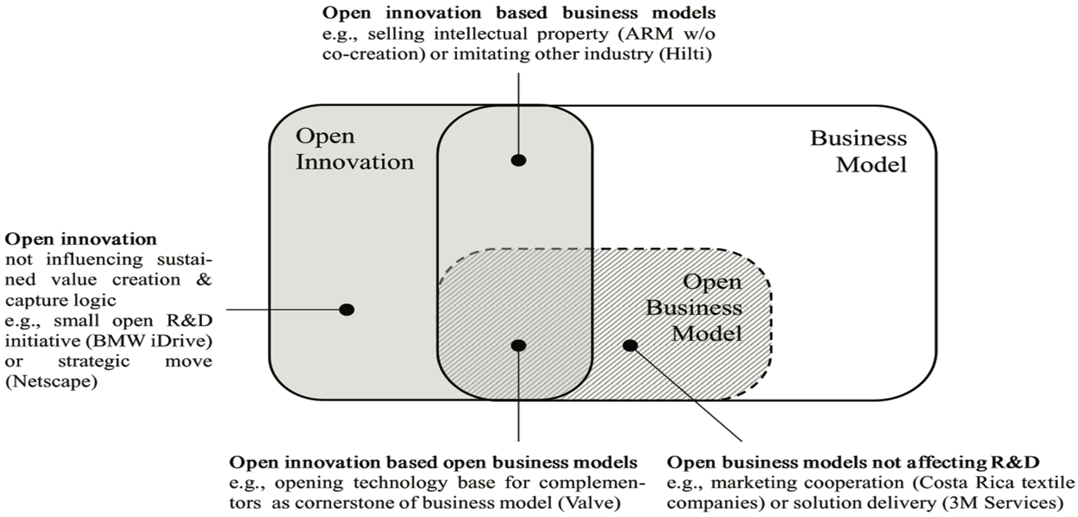
It is notable that business model innovation is not for free, that is why companies mostly invest small unites of money into project, this gives them the opportunity to scale it down or up if needed. A very good example is Amazon Web services(AWS), which provides pay-as-you go pricing model for cloud computing. Amazon realized in 2006 that they have a lot of computing power that they do not use, so they decided to rent it out. (Ritala et al., 2014) This has given the newly start-ups a huge capacity of computing power, with just minutes. As their slogan, "Friends do not let friends build data centres", from start-up point of view, they can scale up their computing power within minutes and scale it back down if they do not need it. This reflects the idea of experimenting in business model innovation. You do not need to build the whole prototype right away to see the results. (Hook, 2016)

2.2 Open Business model

Open business model(OBM) is a concept, where internal recipes are shared with the third party. According to Chesbrough (2007), OBM enables an organisation to be more effective in creating, as well as capturing value. This means that external parties can use the existing resources, key assets and positions, to create more value around existing business model(s). This leads to the possibility of trying out new things, with experimentation. It is not a secret that new business design requires experimentation, McGrath (2010) believes that, it is a massive part of innovation. However, it is not only inside the firm but also across the industry.

OBM, which is not much discussed in the current literature, is a gripping way to explain the benefits of collaboration. According to Weiblen (2014), OBM has a connection with open innovation(OI). Open innovation is about leveraging ideas both external and internal and commercialising them external and internal ways. (Durmusoglu 2003) What makes it challenging is the overlapping of the word use, where open innovation and open business model are used synonymously (Figure 4). Arguably, the difference is, that open innovation looks at purpose, from research and development ideas and OBM looks at collaborative value creation and capturing. (Weiblen, 2014) Based on that, we can state that they are different from each other and should be processed individually. What this thesis is trying to explain is that OI can be also related to different type of OBM.

Figure 4. Conceptual framework of separation and overlap between open innovation, business model, and open business model concepts (Weiblen, 2014)



What makes OBM connected with BM is the value creation. It would be hard to see a firm in connected world, without working with some external partner. Examples like, IBM, P&G and Air Products from the analysis made by Chesbrough (2009). The mentioned real life examples, support the idea, where factors mentioned by Teece (2010) at industrial times, where BM made money differently. Even though the ways how transactions are done has changed, the value creation has not vanished. The need for more real-world examples could clarify the OBM. Chesbrough (2007) & Weiblen (2014) encourages the community to research and experiment more on the topic to get more practical approach. This can lead to a better judgment of OBM.

One of the first statements for this study, was to understand, are the key proposes of having an OBM, the rising costs and the lack of innovation inside the organisations, which make experimentation challenging. McGahan (2010), states that experimentation, is the most important part of new business model design. The innovation role, is not just the open innovation concept, but also complementary factors, which can kick off a new open business model. Amit et al. (2011) and Gambardella & McGahan (2010) argued, that developing something new and especially a new business model, open business model can be the way for innovation.

Interpretation made by Chesbrought (2010) is that business owners, entrepreneurs and managers doubt about their business model innovations, which clashes with the existing business model. The reasoning is, that assets that are already locked-in, deliver value, no re-think is needed. This is one of the barriers that slows down the experimental phase. According to Chesbrought (2010), to overcome this, constructing maps of optional business models, would visualise better the circumstances.

Two examples are brought up in the article, one is the Osterwalders 9-point decomposition of a business model and other is a widely-used IBM's component business model. (Figure 5 & 6) They both are from the investment point of view excellent tools for experimenting. The importance of experimentation inside the business model is supported widely. OBM concept, which explains the risks and managerial willingness to take on risks and launch experiments, in fact it is supported by the observation factor, that small or third parties can provide. (Chesbrough, 2007)

Figure 5. Osterwalder's 9. point decomposition of a Business Model (Chesbrough, 2010)

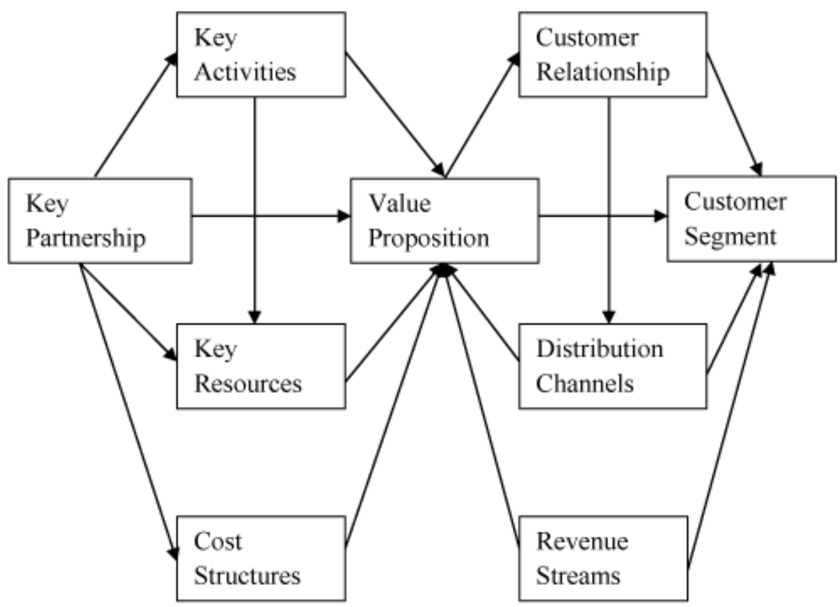
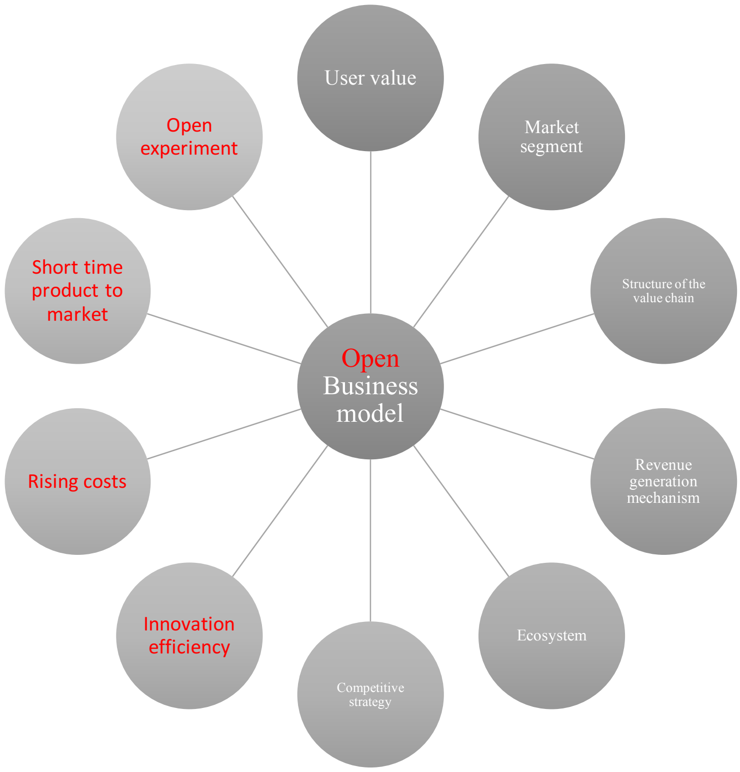


Figure 6. IBM's Component business model

<table>
<tr><th></th><th>Business Administration</th><th>New Business Development</th><th>Relationship Management</th><th>Servicing and Sales</th><th>Product Fulfillment</th><th>Financial Control and Accounting</th></tr>
<tr><td>Direct</td><td>Business Planning</td><td>Sector Planning</td><td>Account Planning</td><td>Sales Planning</td><td>Fulfillment Planning</td><td>Portfolio Planning</td></tr>
<tr><td rowspan="2">Control</td><td>Business Unit Tracking</td><td>Sector Management</td><td>Relationship Management</td><td rowspan="2">Sales Management</td><td rowspan="2">Fulfillment Planning</td><td rowspan="2">Compliance Reconciliation</td></tr>
<tr><td>Staff Appraisals</td><td>Product Management</td><td>Credit Assessment</td></tr>
<tr><td rowspan="3">Execute</td><td>Staff Administration</td><td>Product Delivery</td><td rowspan="3">Credit Administration</td><td>Sales</td><td>Product Fulfillment</td><td>Customer Accounts</td></tr>
<tr><td rowspan="2">Product Administration</td><td rowspan="2">Marketing Campaigns</td><td>Customer Dialogue</td><td rowspan="2">Document Management</td><td rowspan="2">General Ledger</td></tr>
<tr><td>Contact Routing</td></tr>
</table>

According to Chesbrough (2007) OBM has four key functions, innovation efficiency, rising cost, short time and open experiment. However, these functions mentioned are not suitable for the financial industries change. These views are missing a part of same customer, where competition is centred around the same value chain. It is important to understand what type of functions a business model should have. In the previous paragraph, the functions of business model (Rosenbloom & Chesbrough 2002) and the four BM concept (McGrath, 2010) both have the similarities for OBM. Figure 5 about BM, which fulfils the function of business model, has parts, that are also important for the OBM. Figure 7, which positions OBM into BM and BMI we can say that by adding them all together we can have function of OBM.

Figure 7. Open business model functions



These functions, which are described first in 2002 by Chesbrough and Rosenbloom have been cited in many of the previous articles. (Teece 2010, Zott et al 2011, Chesbrgough 2010, Zott & Amit 2010, Casadesus-Masanell & Ricart 2010) Already then, authors stated, BM is interdepending on the layers of technology and economic value.

The two components explain the connection between product development and customer demand. (Zott et al 2011) Discussed in the previous chapter the importance of user value (Teece 2010) is the key to earn profits. Zott and Amit (2010) continued, everything is connected and important for a focal firm. Constantly looking for new business, out of its boarders, for sustainable growth. Said that, the functions for making this all happen, are market segment, user value, structure of the value chain, as economical value and the ecosystem, which brings that it all together.

Teece (2010) mentions:" *in practice, successful business models very often become, to some degree 'shared' by multiple competitors* ". This is what the OBM is all about, where working with your competitors, for greater success. The beneficial sides for that are the functions added by Chesbrough (2007) in figure 4. This sharing and working with competitors can open new additional markets. (Gambardella & McGahan, 2010)

McGrath (2010) discusses, incumbent firms, which are weak to take advantage of new BM's and new entrances are taking advantage of their brand and capitalize from it. This can be explained by the entrepreneurial profound and outside in view, what customer really wants. Teece (2010) agrees on that point, that the entrepreneurs, that figure out the customer need can design better BM's and be trailblazers. Cruciality for firms to have deep understanding of what customer want and coming out of the comfortability zone, has a positive impact to the customer and the firm.

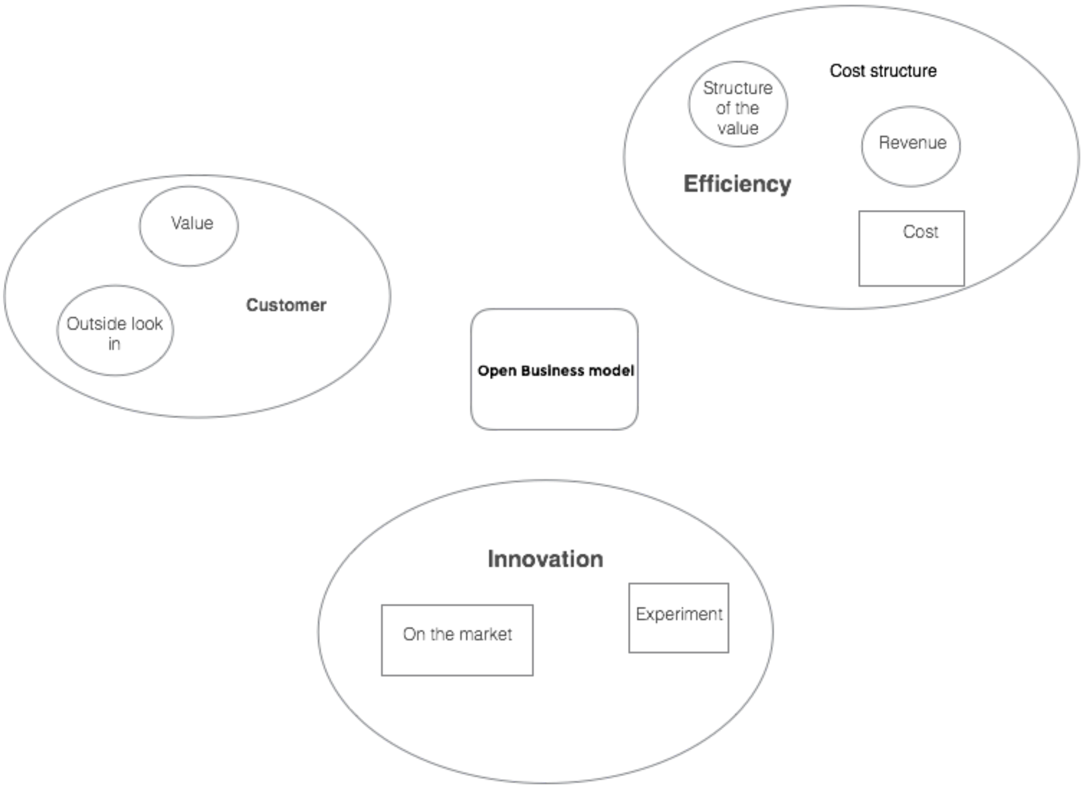
2.3 Open business model functions

The interest of studying business model started from the cost of new business development, managing several BM's and customer centric BM's. Based on the literature and the concepts, the piles of different functions, give some clarity of what the OBM functions might be. The elements can be found from the figure 7 from previous chapter. New business models and especially open ones have benefits of cost reduction, which means that other resources are opened for different use. The world we are living now promotes specialisation and deep knowledge of the business we are in. Said that, core business functions, like for the university is research, not owning facilities, has become more important.

Weiblen (2014) speculates that the "open" function, has indication of partner focusing. Baden-Fuller and Morgan (2010) addressed that BM's can be seen as recipes, where driving the result, is based on components added. Said that, the elements of the recipes in the OBM and BM figure 8, cost can be handled, when different resources are used. This means that position of the firm inside the OBM functions, determinates the revenue and cost. (Chesbrough & Rosenbloom 2002) Nevertheless, finding efficiency connects them. For incumbent firms the cost for innovation is high and the potential value determination is difficult. (Chesbrough 2007) Judging from that, even if you have the right ingredients, finding the right balance is very difficult, and arguably there is no right recipe for OBM.

Casadesus-Masanell and Ricart (2010) believe that BM has different parts, which consist of aggregation and decomposition. Hence, the importance of understanding the bigger picture and the interaction between them, is very important. BM role for the customer is one of the key success parts, get it right and you will have better chance of succeeding. (Teece, 2010) End goal should always be that the customer receives true value. (Chesbrough & Rosenbloom 2002) This means, having the outside view, plus the inside designer view of the business, tactics and strategy can give a competitive advantage over others in the same industry. (Casadesus-Masanell & Ricart, 2010)

Figure 8. Elements of open business model and business model



4 EMPIRICAL RESEARCH DESIGN AND METHOD SLACK

4.1 Empirical study method

For the justification of the study, case study method is used. The case study, according to Robson (2002:178) is a “research strategy that involves the empirical investigation of a particular contemporary phenomenon within its real-life context, using multiple sources of evidence.” The practicality in this study and the way literature review has directed in this study, it can be said, that this is the best way for empirical part to be conducted. Said that, Yin (2009) likewise emphasises that, understanding the phenomenon context, the case study would give a clearer evidence for the study. The author also points out that the real-life factor, which is an important part of understanding business models, supports the study.

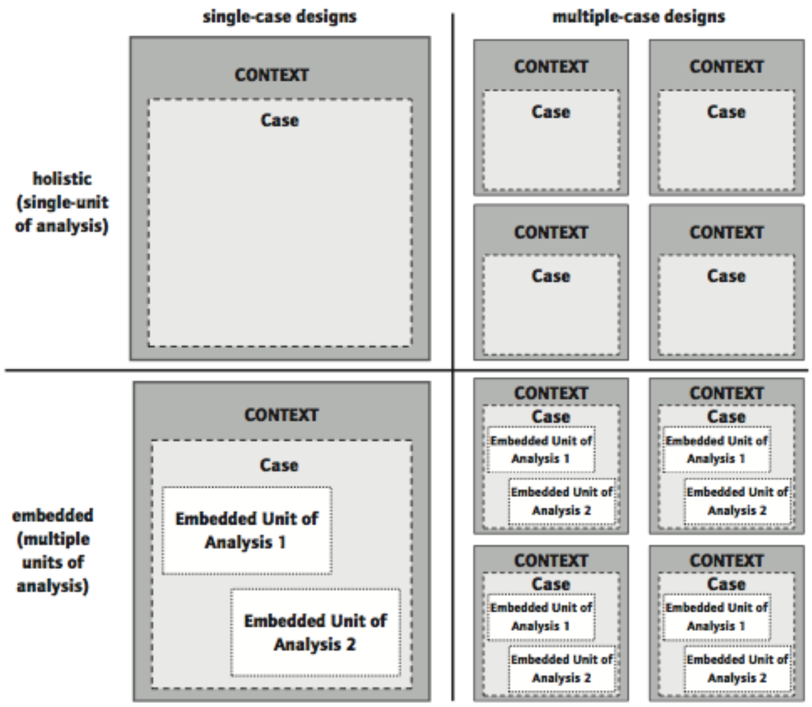
Case study research is used because the empirical part of the study is related to examining modern event. Case study method is used to open a discussion on why something has been done, how they were done and what is the outcome. Said that, the practical investigation has a role in it.

What are the functions of open business model?

Use of the case study method has many different study types, according to Yin (2009) case study can be designed as single case (holistic or embedded) and multiple-case (holistic or embedded). The design can be found from the figure 9.

The use of multiple-case design is used for the purpose of understanding the practical side of the theoretical framework that was developed in the previous section. Case study has its strengths and weaknesses, the strengths are mentioned by Herriot and Firestone (Yin, 2009. 53) imperative and the study itself can be seen as more dynamic. Yin (2009) discusses that two or three literal replications that are believed to fit the frames is enough for the multiple case study. Considering that the study is following a specific phenomenon in a highly structure and similar market. The multiple-case embedded case design version is used because the market situation is same for all the firms in it. They need to adapt the situation and adjust their business model accordingly. This mean that the context for the firms is same, the case as well, but analysis will be done for two cases.

Figure 9. Basic types of Design for Case Studies (Yin, 2009, p. 46)



4.2 Data collection

Data for the study has been divided into two parts, one is the secondary data, which is based on seminar held 27-28 of October 2016 called Future Digital Finance. Also, various internet materials, that support and explain the phenomenon are included.

Interviews were conducted by recording the interviews, for after word analysis and comparison. Questions that were asked were split into two themes, first part is business model and business model innovation and second theme of the interview is about open business mode. Wideness of information gathered depended on the situation of the firm, the ones that had a clear vision on what will they do and how, were more open and collaborative.

To do the confidentiality, the sharing was easier for the participants. The questions were sent beforehand and all the interviewed persons knew what the study is about. Interview duration varied from 30 min to 60 min, considering that all the interviewed persons are director level executives, time of the interview can be seen as sufficient. All interviews were conducted face-to-face. However, due to the lack of interest and time of some financial industry specialists, secondary data resources, such as internet publications, seminars and videos are used to allow the study to be generalizable.

The interview questions were the same for everyone, but the asking process and the order changed. The changes in the asking processes occurred because of the different answers given and depending on conversation flow. Discussion was open, for gathering as much information as possible.

4.3 Case study analysis

The most important part, when analysing case study, is to follow theoretical proposition (Yin, 2009). This study uses a certain structure, which is also used in the interview and interview guide and the analysis follows the steps and the structure of the thesis which is described in the chapter 1.4. Yin (2009) has suggested five analytical techniques for analysing a case study. The types are: pattern-matching logic, explanation building, logic models, time-series analysis and cross-case synthesis.

This case study analysis uses explanation building technique. This technique is used, because for the secondary data, that building cases around the subjected cases. Yin (2009) states "*final explanation may not have been fully stipulated at the beginning of a study and therefore differs from the pattern-matching approaches previously described*. This study has had a new and not so widely researched parts in it. Explanation building in this case, suits best out of these choices that were taken into consideration. In over all, to build case studies based on interviews, the first step in data analysis is transcription, which clears the noise if it is done as fast as possible after the interview was conducted.

The analysis started from the transcription of the interviews that where recorded. After that all of them were analysed one by one and the key observations and notes were assorted.

(Gillham, 2005) Cross-case analysis is conducted, for understanding the open business model environment from industry point of view. Analysis main goals is to understand the patterns between different banks that operate in the same market. This gives new insights and practical guidance.

5 Multiple-case study: Open banking business model

Changes in the financial sector have changed their business models. After the financial crises 2008, regulatory has taken a harder look at their processes. At the European level, regulatory is trying to get more innovation, cross boarder service providing and better user experience. When before the banks had an opportunity to be in the environment where entry level is high and the complexity of establishment of a bank was out of reach, the current situation has changed. PSD2, directive by the European Commission, which is a revision of the PSD, comes into action January 2018, will enable the third-party access to the banking infrastructure, changes the business models for financial institutions. (Link to the directive)

For analysing the theoretical part, empirical part observers an Open banking phenomenon, which is based on the directive from the European Commission called PSD2. Appropriateness and the connection between the business model theory and open banking is the challenge. That technological capabilities and new ways of delivering value to customers, is disrupting the industry.

Three of the key elements are: digital services, which make the processes more efficient, open market for new entrances and customer centric orientation. It is important to remember that this directive is a regulatory issue, which effects current business operations. The elements mentioned are very similar to the framework, which was emphasised at chapter 3. For a better understanding, interviews and secondary data about the changes in the financial industry seems relevant to get an empirical evidence to support the theoretical framework.

BM meaning and usage is often connected to technological advantages. (Chesbrough, 2010 Al-Debei et al 2008, Teece 2010, Wirtz et al 2016, Chesbrough & Rosenbloom 2002, Chesbrough 2007) The relation is recognizable, the goal and the capabilities that the current environment provides. This type of innovation is happing in all the industries for productivity adjustments. The open component, which is not much discussed in the business model literature, but is connected and over lapped with open innovation concept, suits well to the regulatory compliance. Firstly, OBM idea is to share resources, key assets and positions to create more value around general operations. This makes the new entrance and obstacles more competition oriented. This not only makes the business environment better, but also fosters the innovation, which is the key for open innovation. Secondly, consequences and the outcome of the openness is unclear, the experimental and risk related to the directive are represented in the literature.

5.1 Case study companies

The interviews that were conducted and the overall opportunity that these types of interviews were allowed, the company and the interviewed persons will not be disclosed. The interviews are transliterated and archived. The target group is financial institutions, which provide everyday banking services, like payments, savings, loans and credit. For getting a wider view of the phenomenon, size of the bank varies from few hundred thousand clients too million clients. Some of them are local and some of them have international operations. The persons in this study are selected because of their unique expertise and professional knowledge. The way they are arranged in this study is random and the individuals have names as letters for their privacy.

Case company A is a financial institution, which operates only in Finland. It has decentralised organisation, which gives the branches an opportunity to work on their customer base around specified province or district. The governance has a structure that gives transparent decision making and targets to the branches and helps them to grow their business. The services that the financial institution is providing are centralized to personal and corporate banking. The individual who has interviewed for this study has over 10 years of experience in financial services, especially in banking and digital financial services. Person A is responsible for transforming the strategy with the board and helping them to archive the transformation on the upcoming PSD2 directive. The tasks are related in areas like, customer centric strategies and developing new online services.

Case company B is a financial institution, which operates only in Finland. Organisation has business units like: saving and investments, insurances and loans, branch operations, marketing and digital services etc. The person interviewed has specialised in payments and regulatory in question. Person B is an executive level director with plus 10 years of experience in banking.

Case company C is a financial institution, which operates in Finland, but has stronger presence abroad. They operate around the world and have presents in all continents. The person interviewed has more than 20 years of experience in banking.

Case company D is a consulting company, which offers variety of services for the financial sector around the world. The individual who was interviewed has global expertise in baking. The responsibilities are international banking services ad payments.

Selection of interviewees gives the case study a very diverse understanding of the business models that they have right now and how they see things in the upcoming years. As of this thesis concentrates on the current adaptation, the strategic decision that they make have long-term impact on their business performance.

5.2 Analysis

The thesis findings are presented in two sections first part discusses the business model changes in the banking industry and the second is open business model. Case companies have several different approaches on tackling with the directive. This is due to do the size, strategy and resources available. The cases are first analysed within-case and then cross case. This helps to look inside the business model for investigating the challenges they have. Cross case analysis helps to look for factors and relationships in the industry itself. The order of the analysis is random, the identity and the company's names will not be disclosed.

5.2.1 Case A analysis

A has operations only in Finland. To do the nature of their local operations their business ambitions and growth goals go under follower and observer. Their main strategy is to be very customer centric and they are doing everything on their own. According to A, they like, all other banks are transforming their business model from interest and loan business to a more transaction based revenue model. However, they are not developing any special strategies for archiving it. The argumentation behind that is that all the banks have had very identical business models. Mortgages, credit, savings, insurance etc., which have made them all the same from the industry prospective. The change, for them has happened recently, where they have seen that competitors are experimenting with several different new models, which have no or little to do with banking itself. This is possible to the digital capabilities that are available right now. Precautionary approach that they have is based on the risk management. Bank A argues that banking is not much more than managing and mapping risk. Banks are rigid and they operate based on that.

The collaboration and working with external partners is not on their table, neither is anything related to open innovation. When it comes to business development, everything is developed based on high demand and must be justified, what will be the business value. They have not brought any new products to the market, neither have their development process changed. But when it comes to fastening processes they have hired new people for getting things done faster.

As mentioned before they are not into open innovation, but they have thought about bringing in some external partners. Till now they have operated on their own ideas. The interest towards them is high, there are different firms trying to collaborate but nothing has been done in that area. They have right now so many different project internally happening that there is not any time for bringing in third parties.

The open business model concept is very clear and bank A defines it as *networks, platforms and ecosystems, which work together for the same goal*. According to the emphasis is that companies can not work without customers and other firms to be successful. This is a very good argument, but their own business model is not that flexible for having external partners working with them. It is not a secret and bank A confirms that industry is very closed and they have walls, which include culture, mentality and on some levels systems that ca not provide the openness. The API world is making a lot of misery for the banking sector. The current systems are not built for that type of new digital era. This is developing a lot of risk, which again needs to be managed. What this digital world has teach bank A is that banking services can be developed in different ways as well.

They have had external services integrated into their net bank over the years, which is not much of a value adder for the bank, but is for the customers. The thing that everything falls, is the security and the trust that they have developed with their customers. Nonetheless, Finland has managed things well, people trust and listen to banks. In overall bank A mentions that there is no categorical barrier on what service or a product banks could not provide. From the overall industry point of view, this is very much true. Some banks have started already to look for other business models. Based on that, it can be said that the more variety and options customer gets the better. From their point of view, they are not looking to becoming a multi-company, that provides other services outside of financial industry.

OBM provides a lot of opportunities for customers. The angle bank A argues is that not everyone wants a self-service business model. However, he mentions that the best service will give the competitive advantage. Yet the real value in this market will be created with long-term strategy. Analysing the TPP form of customer value bank A states, *"it would be arrogant to say that we want all the customers"*. That is surely true and keeping the strengths that they have can have a positive outcome for the long term. The problem itself is behind the digital opportunities and the changes in the consumer behaviour. Arguable disruptors kill and cannibalise business models. Nonetheless, they have not changed their business model to more open direction. Even though the understanding, that the disruptor mostly comes outside the industry. The comments that other banks are shooting in every direction and trying out new things is solely that they have assets to do so. Bank A sees that current launches from fintechs is just branding and few of them will really succeed.

The struggle between fintechs and banks is mostly related to regulatory. The regulatory issue in this case is seen by a resource intensive part of banking operations, which create little or no value at all to the end customer. From the fintech side, they can build but the whole infrastructure very easily, the thing that fintechs are missing are the customers. People who work actively in the industry are so inside their world, that they ca not see what is really happening outside. Bank A constantly mentions that they should get into the hackathon and accelerator world, which the other industries have already taken advantage. This would require a spin-off or an entire new company to be established. This is something that banks do well, they manage risk and providing a clean company with no history to develop services is a very good strategy.

Bank A mentions, that they are in a followers' position, but want to be ready to strike. They currently they see that complying with the PSD2 will be enough for now, but they will keep a close eye on things like customer satisfaction, efficiency, self-service development and other banks strategies. However, based on the answer, it can be said that they have not made any business model adjustments, but they are constantly analysing the changes. Based on the case, it can be said that their readiness is not as good as it could be. They are not in a phase of letting external partners help them develop and bring innovation in. Barriers that are stopping them are cultural, mental and system wise, which can be changed and should be changed from the top management. The fact that they have the will to look outside of their business zone and let third party in at some point gives them a follower's position.

5.2.2 Case B analysis

Like all banks, they are very structured and a conservative organisation. This phenomenon that banks are right now facing, makes them rethink their operations, but only from the legislative prospective. When discussing about Open banking and the advantages that they bring, the answers given suggest that they do things according to the law. To do the Open banking is not legislative factor. However, it is pointed out that they have key elements, that they are considering, when dealing with the PSD2. It is centric that customer value has high priority. Emphasising and understanding, that customer risk management has more important role in the future makes the bank more cautious. This is due to the responsibilities that they have over sharing and opening their interfaces for third party providers. As mentioned before, they will comply with the law and do the changes in their processes. This will defiantly limit their opportunity to provide customer centric solutions in the future. Said that, the idea behind opening up banking services is to provide better services and more competition. This is where more is better and competing with the wider service range raises the risk level of losing for better service provider.

Customer centric approach, which is basically the standard in the industry can be seen from their operations, trying to be a reliable partner. The market segment that they are doing business, does not bring out any special strategy or niche.

Discussion about the advantage in the API world, the interviewee states "there is a lot of risk related requirements that we have not yet figured out ". However, their concern is on their customers. They see that the customer knowledge base should be widened and more information should be given to the customer. The risk itself according to bank B is payment initiation. This mean that TPP providers and initiate payments from banks accounts.

From the BM point of view, they will just be a piece of the transaction. Their BM has gone from product development side to the service oriented approach. Bank B argues that the product developing is not wise in that environment, to do the high cost. The highlight is that "we are not a fintech, we see fintech's as partners who we can work with". Another key mention is the long-term vision. The scepticisms of the continuity of a fintech is questionable, according to B. Emphasis comes from the commitment on having an account on a bank, which is connected to the TPP. This works till the consumer has given the right to TPP, when the contract is not extended, the TPP will not get any new information from the account provider.

From the BM point of view, they do external collaboration with different partners, but very are very selectable. They go through ideas with them and test them with customers to see if it works or not. When asking about Open innovation related to their business model, they have established a separated business unit for that. This done by distributing risk from the core business.

The reasoning comes from the long history that they have and the change, that is constantly required. The systems that they are working with are very old and developing new solution on the top of it is very challenging. Bank B describes it as "herring salad", which means that fintechs can start from zero and build scalable solutions. With the current available technologies, they can have a fresh start, but with heavy systems the transformation is slow.

What stood out from the interview, was that they are not actively participating in any program to modify or develop their current BM. Even though bank B mentioned that they are proactive and have partners, no steps have been taken. This means that they will do the minimum requirements on the API side and will follow the market and keep their current service oriented strategy.

The second part of the interview was about open business model, which is on some levels new term in the business world but, the answers given gave some foundation on the OBM discussion in the OBM paragraph. The first argument mentioned is that OBM means "integration of different models". Emphases, that OBM works only with partners to collaborate. When asked, if they have an OBM, the answer is yes, but the practical input is still missing, but they have the will to act and work on it. This means that they collaborate but only on the partner level. PSD2 directive does not give options to choose, you must give access, if the customer wants that. This makes the OBM idea solid, from the literature point of view.

5.2.3 Case C analysis

Their willingness to diversify their banking operations from credit side is high. They work on lowering their credit risk, but still want to be in the loan and credit business, because it is the core of banking. However, it is noted that there are many different new entries coming to the market, with alternative finance like crowdfunding and instrumental credit providers. It is noted and mentioned that anyone can operate as a bank with certain licence. This supports the fact that business models can be developed from any market segment.

When discussing the possibility, that banks would have given a change to open their business model to TPP's few years before, the answer from bank C was "*can't be done*". Argumentation behind that is that banks capabilities neither the regulatory wouldn't have allowed that type of solutions. Now when the digital world is leading the new era, customers want more. When it comes to opening the infrastructure, we must understand that it is all about the customer and very little about the bank itself. There are several other directives and data protection laws, which need to be considered before managing and using the data. Again, banking and insurance business model fundamentals are based on trust and reliability, on who is using your data and how it is protected. The open business model ca not work if the customer does not want to give their data out.

Aside from that, the benefits and the value will be created around us. We will defiantly provide new entries with customer, but we will be a part of the ecosystem. For understanding this better, every time when account access is done we will get a transaction from it. However, the value itself will be made out of our reach. This means either a better service or something else. The disruptors, according to bank C will lower the prices and enter from another industry, not from banking.

Their process of benefiting and being ready for open business model has been split into two themes: compliance and capabilities to provide the information. Compliance mean that they need to make it work and capabilities is the API's for TPP's. Not to mention the ecosystem itself, where everything will work. Needless to say, they are not developing anything new and as bank C explains, they will not go with the first wave and the most important part for them is seeing how the customer behaviour will change. Bank C mentions that they will not have accelerators or start-up hubs in their organisation anytime soon. This also means that they do not collaborate with external partners, like some banks, which have partnerships and internal programs. This also rules out open business model possibilities. The comfortable zone, reflects a smooth way of doing business for more than 20 years, where banks business models have been identical. But now with the digitalisation, robotics and self-service business models have drifted the focus elsewhere. Bank C mentions that these new ways of doing business will diversify the banking industry.

Digital banking provides anything without borders. The second part is the advisory side, which can't be 100% automated. Bank C arguments for that are that consumer behaviour won't reach to everyone. Even if the bank has a lot of data and masses behind, they still need to reduce costs, automatization and algorithms give options not the real advice. It is notable that options which are given by the algorithms make people still ask questions. The true value creation will still be the face-to-face advisory.

They do not have an open business model – it is mentioned that their organisation is rigid like everyone else's. They see that the world is going to a more open and transparent direction. The development that they are looking into, is how to develop programs that are fast and value adding. The open business model for them would mean that, they work with different partners, but not too many and there should be a constant flow and everyone should be committed. This means that open business model must be flexible, their current business and organisation model will not allow. The challenges that they face are regulatory, banking secrets and compliance. This is their framework on how they operate. Discussion about it is that, they can not work with external partners, without revealing customer information. Also, the testing and developing ca not really happen without that information. The synergies, which for example retail stores have with their own banking unite create a lot of value. This is something that not all banks have, but from the collaboration part could have. This supports the theoretical understanding for open business model, where working with different industries build up strategic advantages. Based on that, the open business model for banks should be a combination of different services combined into one.

The Finnish banking sector has developed more than the other European market. Here people have many accounts, different loan and credits from variety of providers. The market itself is very diversified. Customers are a lot of options. The benefits will be around price competition. Upcoming years will provide more and more options for paying. Whether it is a useful thing for consumer will be seen. According to bank C, it really does not matter for the consumer what solution you paid, it is more on how convenient and service oriented other parts of the process are. The value adding must happen at the same time. The data part is not that clear yet, what are the opportunities behind it. Bank C mentions that one option is combing and keeping your transactions under one brand. Ideology behind is that larger retailers can have their own payment systems that will lower the cost. This is again an open business model world, which creates value on the top of current business model.

Digital world cannibalizes branch network, different options for communication and transaction making in the web. These options have made some customers more satisfied than others. The challenge C mentions is, cannibalising client's business in the area. The example given, is the cash management, which requires local level money collecting. Smaller businesses can not afford expensive money collecting services. Clients will be needed to evaluate on the local level, which their current business model can do. Using cash is declining in Finland and managing it will cost more and more, there will be specialisation happening soon. The API world is not really taking this into account at all. They will have an opportunity to provide everything online and without any cash related issues.

There interesting part, where fintechs have a better situation with regulatory and managing their risk than large banks. This means that minimum capital requirements and few regulatory papers. Bank C points out that this weights lot of individual risk for people with saving accounts, in case they use a fintech services. If the customer wants to join and give permission to the fintech, they will provide the information. However, their personal level business co-operation will be very selective.

The selectiveness is based on their key functions that they see in their future strategy on tackling with the open business world. The forces that bank C mentions are money laundering, data protection and protecting their brand. Money laundering brings a lot challenges with the API, because the transaction will happen from their accounts but will be initiated with third party provider solutions. Data protections will become more important, both for us and for our customer, with whom will they share it and how will it affect us. We will try to find a suitable model for both. Our competitive advantage is based on our local decision making power. This keeps our brand stronger compared to fintech's and from the consumer side we will have an opportunity to be present. However, we want to collaborate with partners who already have other banks involved as well. This could be seen again as a follower's strategy, even though they are not creating new solutions themselves, they want to be part of the wave. Bank C mentions that they are very much open to collaborating with partners who can develop services on the top of their customer accounts and create value.

5.2.4 Case D analysis

This interviewee was chosen because of the extensive experience the person has and the hands-on experience not only in Finland but also elsewhere. Everything related to changes in financial industry started according to D already before the financial crises in 2008. Banks started to concentrate more their attention to transaction banking. This is the time when customers started to require more from banks. The digital shift that happened then changed a lot. According to bank D, this is where real investment into fintechs started to happen. And last year it went up rapidly. However, the corporate banking is changing very slowly. This is due to the retail banking business models – it is much easier to figure out what consumers want. Reasoning behind that is testing and experimenting. Said that, bank D mentions that corporate banking needs someone who has worked in the industry to understand the needs.

The innovating in the industry is very slow, both for the retail and corporate. Few years ago, no bank would have open their API's. The profits would have flown out from their businesses, according to bank D. However, there are two benefits, one is that open up everything before the regulatory or external forces will do it. This will keep the competitive advantage and also the learning possibility, on who banking services could be provided differently. The second benefit mentioned is doing something different and providing good infrastructure services. This could mean managing risk, which banks do very well. However, little has been mentioned about, providing so good service to the TPP's, that they will bring new customers and cross-selling will happen over the TPP's. This is a very long–term thing, but having a well-structured ecosystem, can be seen as a very open business model way of doing transactions. Bank D highlights, "*the consumer behaviour and the development in the area will not disappear or stop*". Moreover, the more competitive banks will develop high class API's and the slower ones will lose the customer, if they ca not provide transaction between the TPP's.

Billions of euros are invested right now into the core business infrastructures. This process is not happing overnight. According to bank D, this will last for years, but creating competitive API*'s won't take that much of time. The backend should the fundamental for banks right now. Considering that, PSD2 requirements shouldn't cost more than tens of millions. Larger banks in the Nordic have already started to fix their backend before the PSD2. This means that, starting now you would be late already. The worst thing that can happen with a business is that they lack fundamental resources to operate and provide new type of solutions. This can be very critical.

It is not only the IT side, there are strategical acquisition that have been done over the last years. (Hirn 2014, Vänskä 2015 & Esko 2016) According to bank D, the market point of view, they are already in the online merchant value chain. The position is when the customer is paying. When you are a bank, this is where we see cross selling. Payment providing function can be delivered cross banks, when a user is making a payment, it is possible to ask permission to check the account and provide better credit offering for the consumer. The thinking behind this type of moves are based on where your customer might want your bank to be. Based on that, it can be said that customer journey development and thinking is very much welcome.

Collaboration in the international level is high, they all have some type of a start-up accelerators. There are no guarantees, that banks will take you under their wing. However, bank D mentions that hack downs are a better way of bank tackling with problems. In Finland, there has been few of them, but internationally, there API environment has already developed so far that farms and developer communities are arranging them. The idea behind it is that solutions that are developed will benefit banks as well. This advantage environment provides secure solutions, both for the customer and banks. Transactional open business model, which shares the profits between a fintech and bank.

This all needs to be organised well, because of the brand, which is very important for the banks. Bringing out a new business model under the current brand. Bank D mentions, "*It is hard to define, when there is cannibalisation happening and when the business environment is changing in to new products* ". Based on that, it is wise to say that the innovation is the cannibal here, as mentioned before change is happening, whether we like it or not. Capital adequacy requirements, are very tight for banks, so alternative products that can serve client on risky projects, can be solved by crowdfunding. Diversifying product range will shift the risk from banks to individual investors, but providing products like that, can not be under banks recommendations. This is because of the high risk.

The products that are developed at the moment provide different types of payment related options. For the customer it makes little difference, with what you pay. Bank D points out that extra services that are combined with payments are the value creators. The things banks should look are the customer journeys. Understanding what your current account holders need is crucial. The key point bank D points out is services your customers use, by figuring out what they need, banks can develop better ecosystems around. Arguably, using current customer data is the key for better business models in the future.

5.3 Cross case analysis

The last section opened the challenges and the thinking behind the change. Having the understanding, what financial institutions are facing and how are the moving towards the open business model world, it can be said that industry itself has very different stand points. The cases, which are discussed, have the follower's role. They are not actively developing, search, neither collaborating with external businesses. As discussed in the beginning, the regulatory requirements, restrictions and corporate culture are limiting the possibility to innovative and work with new ventures. These glass ceilings are grounded on difficulties to experiment and share their customer secrets.

Because of the nearly identical business models and based on the answers, discussing the different business models, that other financial institutions have adapted and taken into their service product line is appropriate to show the shift. As mentioned before, the business models that banks have right now are identical. However, the services that some financial institutions are providing are entirely different. The connection between the current offerings, like insurance can be very easily connect with healthcare business models. Bank D discussed a lot about how third party interactions are the value creators. (Jurvelin, 2014)

The synergy, which is a type of a connection between insurance business, where banks can see through the whole health care need and also the financial need. This gives the customer and also the provider better offering option. Said that, the healthier you are the better conditions you could get for your insurance plan, not to mention the terms for your loan application. This can be taken as far as your whole credit and loan offerings. From the strategic point of view, the only downside for this type of cross offering is the legislative foundation. In Finland, this can be done and the healthcare market is getting more private input, but this has political risk. Considering, that financial institutions are doing a lot of risk management, this is a very suitable business model approach. The form on TPP options that healthcare and financial services can provide are unlimited, this shows that open business model, which has different options for customers work well. Hence, the real benefits can be seen in upcoming years. (Vänskä, 2016)

Transportation offers like long and short term rentals, have become more attractive for consumers living in the hubs. This trend is based on the generational, public service and price of owning a car. The flexibility that renting a car for short time is very attractive, you do not need to pay for insurance, lend money neither maintenance the car itself. This is again connected to the insurance business, where banks provide half of the services an individual need.

Alternative financing has been a very hot topic for the past year. Business and personal loan market has come under pressure aft her the financial crises. Different types of financial instruments have been brought out, both for the B2b, B2C and P2P. For the investors, they provide very high returns and for the consumer's flexibility. C discusses that and they have noticed and mentioned that it is very risky to have something like crowdfunding in their offering. This all relates to the brand and also regulatory has an effect on it. This is all because of the protection of the banks client. Suggesting your client to invest in very high risk instrument and bring sanctions on the bank. There has been testing around this type of service in Finland. (Eskola, 2016) The service is connected and works under the bank brand. This service has been available for businesses and investors since November 2016. None of the campaigns have been successful. This is because of the criteria's that they require from the firms who want to participate in the funding round. (Nordea, 2017) They include being a client of the bank, successful business idea, clients, turnover and the amount should be at least 100 000€. There is no cross-selling thinking behind it, considering that most of the ventures that get funded by alternative finance are start-ups or visions on what we want to succeed.

For some, this is marketing, like bank A mentioned, industry is right now trying to push out as many different services and products as possible. Experimentation can be seen around the industry. However, the case firms are not a part of that wave. They all act as followers and try to keep investments, risk and partnering as minimal as possible.

When it comes to open business model, they all have figured that out and have had some level of talks about it. Most willingness, can be seen from case bank B. They have done strategic decision and diversified their corporate structure. The problem that all of them are facing is the old infrastructure, which is under renovation, but will take time. According to bank D, if this has not been done by now, they will be late in the development era. This means that they will only provide the minimum required. This will be a problematic situation, where international banks are already doing more, to provide as many options and solutions for their current customers.

Table 3. Functions for decision making

COMPANY	OBSTACLES	VALUE CREATION
Bank A	- Getting out of the industry and looking for new inputs. - Regulatory	- Niche business models - Consumers are smarter
Bank B	- Too many different business models - Integration	-Organisation has already an open way of doing business
Bank C	- Customer data sharing - Third party collaboration - Organisational structure	- Price competition - Service orientation
Bank D	- Damaging brand	- Have a community to work with - Diversify your product range for lowering your banking risk

5.4 Open business model framework for banks

Benefits of having an open business model in the banking industry, gives a very compelling argument for developing a successful strategy based on the key concepts, theories and literature. According to previous discussion, the concepts for having an open business model are, efficient innovation, keeping costs in place, experimentation and new market opportunities. (Chesbrough, 2007) Said that, discussion also applies that the BM, BMI and OI are all connected to each other. Figure 7. which has the functions of BM and the added parts of OBM and OI, has some overlapping. Function like experimentation, which is know from OI, is a something that is been observed, but not implemented in banking industry. They are looking towards that but stick behind the regulatory and cultural barriers. However, the value part in it has been recognised, few have taken any steps. The information provided by the case companies, gives a much deeper thinking point for their transformation. They see the importance of experimentation and efficiency finding, but are not at that point yet. On the other hand, they are trying to reduce their in-house development and have taken the followers role, which means that that they understand the change. According to the cases the most important role is developed around customer and brand. Personal approach, which banks are all about will become key according to the cases.

Developing new around current services is the key for all the cases. According to the cases key functions that will be followed and developed are: integration of different business models, practical approaches, understanding the limitations, service orientation and brand building. Framework is split into two sections, one is the obstacles that are limiting and challenging the open business model in the financial sector and the second is the value creation, which is expected from the industry.

5.5 Payment service directive 2

The motivation to write this thesis was PSD2 and the challenges, opportunities and innovation in the financial industry. The pressure that industries are having to change their business models is very high. PSD2 itself is not and innovation, but more of a force that gives a possibility to do that. Functions that banks need to work out this directive were coming over the obstacles and leveraging the value that can be created. Improving the competitive environment, cross boarder services and customer value are the key things to understand. For external parties this means that they can leverage the open world and build greater services around banking infrastructure.

Discussion about third party access was seen very sceptical from all the interviews. This for them means more responsibilities and risks. The technology itself is not too complicated, but managing all the ecosystems around it can be very demanding. Not to mention that they already have high compliance costs, this will definitely raise costs. This is one of the cultural reasons why banks are not very fond of collaboration. It is not much about choosing the right business model, but having a strategy to compete. Empirical evidence show that observation gives a good foundation for successful business model, which applies here as well. None of the case firms have any strategy but they are observing the industry. This does not give them the clear picture but, gives a sense of what type of business models are developed.

Even though this thesis did not observe payments, the first changes in the financial industry will happen in that area and have already happened. Global giants like Apple, Facebook and Alibaba have already taken an interest to the mark. (Viljanen, 2017) The next step is XS2A, which is the most interesting part of the new directive, the opportunity to access client's transactional data. The opportunities that this offers are unlimited. By combining this data with consumer behaviour, social media, location and credit history, it is possible to provide services and ecosystems that deliver instant offerings and purchases.

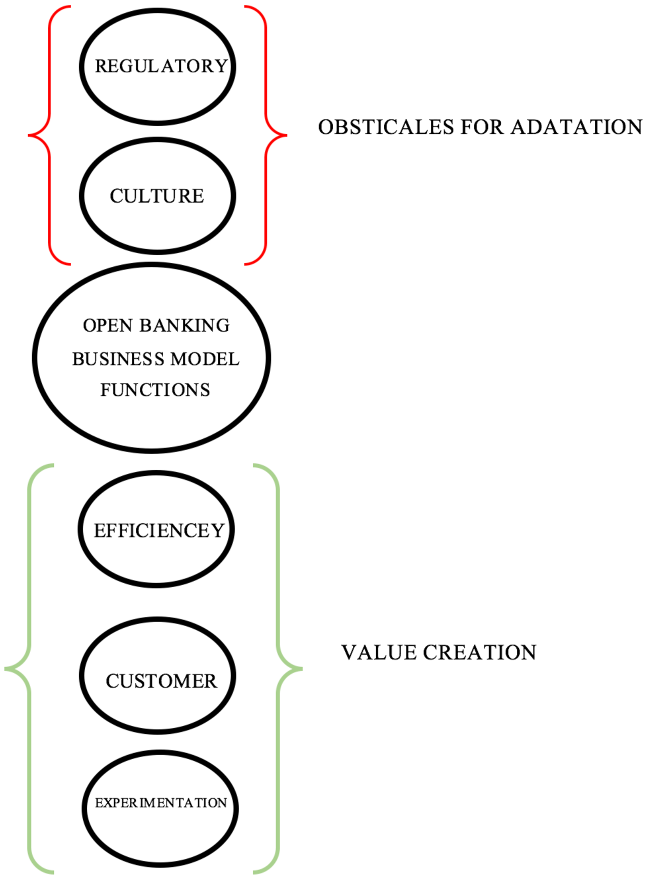
For the consumers, this means complexed decision making, on whether they want to share their transaction history with online shops or other services providers. Case company C mentioned that, even if algorithms will give you options, individuals still need guidance and these services are not for everyone. They will bring value to some customers, but not to all. Said that, the next valued service in the financial industry will also be the face-2-face interaction and advisory services.

The ones that have a diversified portfolio of services and large customer segments to serve, have more challenges in the open business model contexts. Even though the aim is not to serve all segment, customers will have more options. Larger institutions will definitely be the winner because of the scale and attractiveness. New comers will most likely target large customer segments with their TPP services. This leads to the acquisition opportunities and building better portfolios.

European market itself offers a lot of opportunities and the easier way of doing cross border transactions and business is already in its highest in other industries. This brings efficacy to operate in several countries, not to mention that having a banking licence in one EU country gives possibility already to operate in any of the European economic area.

Consumers will have more options, but also risk of doing business. Trust that your money is safe and your personal information is secure will come important. There are two winners in this situation, consumer will have lower prices and larger banks will take more market share from smaller banks. It will be seen whether it is good that concentration in the industry will give more power to the bank, but transparency for consumers will get better.

Figure 10. Framework of empirical research findings



6 DISCUSSION AND CONCLUSION

6.1 Discussion of the findings

The aim of the study was to investigate the open business model adaptation in the banking industry. The scope was to answer the research question:

What are the functions of open business model?

Topic is related to PSD2, which banks must adapt in 2018, the supporting questions for deeper understanding were:

What needs to be considered when designing an open business model with PSD2?

What are the advantage, when implementing open business model into financial industry?

There is not much mentioned in the empirical studies about the regulatory and cultural challenges. However, experimentation, efficiency and customer oriented approaches are well documented. Both the case companies and empirical studies, understand the sharing and collaboration benefits, which are very much needed in the current high tech business environment.

The multi-disciplinary over lapping's show that the open business model concept has variety of functions that need to be taken into account when design a new business model. Empirical evidence show that the ecosystems that consist different sectors have impact on how value creation and capturing can happen. Experimental part mentioned by McGahan (2010), truly connects the current situation, but financial sector is not as open for that. The core four functions that Chesbrough (2007) discusses, where missing the financial industries points, like regulatory and culture, which are slowing down the open business model adaption. This is where this thesis makes a contribution, by adding the regulatory and cultural functions.

Arguable, empirical and theoretical studies show that cost of developing something, is higher than ever before and there are not recipes to copy from. Baden-Fuller and Morgan (2010) discussed that adding new elements to current business models can drive efficiency and value. Case companies interviewed, mentioned several times that value will be created in areas connected to the current models. This means that open element is present and the best possible outcome will be archived by those who experiment with external partners. Weiblen (2014) speculates the same thing, that the open part in the business model concept means partnering.

Teece, (2010) mentions that if business get the things right, the customers will poor in. This means that the true value always should be created around customers. Financial institution has high customer relationship connection, which means that they can't do wrong things. By wrong I mean collaborate with third parties that have bad reputation. This is one of the things mentioned by case companies, they are very selective and partner if others do that as well. This on the other hand means also that if you are not the first mover you will always be the follower. The best-case scenario would be Casadesus-Masanell and Ricart (2010) mentioned way, which is a combination of outside and inside view. This for the financial sector means that collaborating with different industries will give them knowledge, tactical and competitive advantage over others. The value capturing will happen outside of the financial industry itself, both the literature and interviews endorse that view.

6.2 Theoretical contributions

The main theoretical contribution of the current research is that it adds regulatory and cultural differences, compared to the other industries that have been studied. There is little or no studies made when it comes to opening a very rigid industry. The empirical evidence collected show, experimentation and external collaboration is still unknown in the industry. Regulatory issues are both enablers and barrier builders in the open business model world. Teece (2010) pointed out that technology enables to discover and satisfy new customer needs. In this case, the technology itself is not making anything if it is not used in a right way. The right way is a combination of strategy, experimentation and efficiency. Chesbrough (2007) noted that rising costs for developing new products has made companies look for sharing and collaboration. Getting the internal developing costs down and getting more value out of the market is also a key motivator for financial industry.

6.3 Managerial implications

Considering that these cases represent a small part of the financial industry, making any permanent assumption wouldn’t be accurate. However, the follower’s role and cautious strategy, could be something to keep in mind. Financial institutions and other industries should look for beneficial synergies between their models and evaluate and share their knowledge for open business model benefits. Establishing a separate unite for that could be one of the options for low risk open business model development.

Functions to keep in mind when starting to develop open business model, like cultural and regulatory impact are key for not losing customers. Not to mention, the more open sharing attitude and openness about their business model developments. Thus, the customers will have a choice anyway to make the final decision about third party applications and usage. Nobody is in for all customer experience, select the segment and stick to it.

6.4 Limitations and future directions

The main limitation of this research is that larger financial institutions were not interested in participating in the research. The reasons for that, is also the one that restrict the banks to be open. The legal side, which was one of the arguments for not participating in the research. There are secondary sources, which show that there are open business model adaptions happening in the industry but no concrete evidence was gathered from the interviews conducted.

The future direction could be where banking services will go from this point forward. Digging into the banks business models after few years and analysing the changes, would give better understanding, on which direction financial industry has taken. What are the proportions of transactional and credit related business models, or are there new sources of income developed? Another key function to be learn is how banks have managed to be competitive with the industry change, where fintechs have the leverage over them at the moment.

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APPENDICES

APPENDIX Q: Interview guide

Interview guide

Changes in digital finance are rapidly shifting forward open business model. Last change, which disrupted banking sector was PSD, which has over the 10 years been improved and annex. The next phase for Europe is PSD2, which will allow third party operators to access bank accounts.

The purpose of this interview, is to collect empirical evidence for the theoretical framework, which is developed based on the literature related to business model and open business model.

There will be no named based quotations, all the answered gather in the interview will be compared and generalised. Identity of the person, who is interview will be withhold from the research if the interviewee wishes.

There are two themes for this interview, one is the understanding of the business model concept and the second part is the practical understanding of what an open business model is.

Business model

1. How would you describe the current business model the organisation has?
2. What type of benefits do you see in the open banking(API) environment?
3. Are there any changes in the investment side, that are different?
4. Do you see difference in the product to the market process?
5. Has the experimentation in the firm and outside the firm somehow changed?
6. How big of a deal is open innovation in your firm?
7. Where do you see that the current business model will be in the future?
8. Do you work with external firms?
    a. If yes, what are the benefits?
    b. If no, why?

Open business model

1. What does an open business model mean to you?
2. Does your organisation have an open business model?
3. What type of business models open business model creates?
4. What type of limitations open business model has?
5. What is the value for the customer in the ideology of open business model?
6. How do you make sure that you are not cannibalizing your current business models?
7. What position regulatory has?
8. What are the key function you see that an open business model should have?