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The future role of fintech in Finnish financial services

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Abstract

Financial technology and digitalisation have quickly become part of financial service providers' daily operations. Technological development and certain regulations have allowed new financial service providers to step into the markets along with the traditional banks.

The objective of the study was to examine financial technology as a phenomenon and examine the opinions and attitudes related to digitalisation in the financial services. The aim was also on identifying new financial market players who compete with the banks. The main focus was on the Finnish service providers, but other objective was also to examine how changes in the global markets and trends in technological development affect Finnish organizations and how they should adapt themselves to the changes that the global digital development might cause.

The research approach in the study was qualitative, and the study was implemented as open-ended questions that the participants answered verbally via online survey. All eleven participants were divided in three focus groups according to their field of business. The questions were formed depending on the focus group, which were start-ups, banks and Finnish Financial Authority. The survey was executed by using Google Form as a platform.

The findings showed that the participants were familiar with the theme of financial technology and acknowledged the changes in the digital development. According to the primary data, overall attitudes towards more digitalized operations were positive and changes in business models were seen as possibilities more than threats to every-day business procedures. The participants were aware of the uncertainty of the future and the changeable nature of digitalisation on the global scale, which had forced the participants to be more prepared and agile than before.

Keywords/tags (subjects)
Financial technology, digitalisation, digital finance, future forecast

Miscellaneous

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Tiivistelmä
Kehittyvä finanssiteknologia ja digitalisaatio ovat nopeasti tulleet osaksi finanssipalveluiden arkea. Sääntelyn muutokset ovat avanneet uusien finanssipalvelujen tarjoajien pääsyn markkinoille, joita pankit ovat perinteisesti hallinneet. Tutkimuksen tavoitteena oli tutkia finanssiteknologian trendejä ja selvittää mielipiteitä ja asenteita finanssipalveluiden digitalisaatiota kohtaan. Päämääränä oli myös tunnistaa perinteisiä pankkialan toimijoita haastavia uusia kilpailijoita. Tutkimus kohdistui ensisijaisesti suomalaisiin palveluntarjoajiin, mutta myös toimialan kansainvälinen kehitys oli tutkimuskohteena; Miten kansainvälisten markkinoiden muutokset ja teknologiakehityksen trendit vaikuttavat suomalaisiin organisaatioihin ja kuinka näihin toimintaympäristön muutoksiin tulisi sopeutua.

Työn tutkimusmenetelmänä oli laadullinen tutkimus. Aineistonhankinnassa hyödynnettiin verkossa toteutettua kyselyä, johon osallistujat vastasivat tutkijan esittämiin avoimiin kysymyksiin sanallisesti. Osallistujat edustivat kolmea eri ryhmää toimialansa mukaisesti, ja kullekin ryhmälle tehtiin tarkoituksenmukainen kysely. Tutkitut alaryhmät olivat alan start-up-yritykset, perinteiset pankit sekä Finanssivalvonta. Vastaajia oli yhteensä 11. Kysely toteutettiin käyttäen Google Form -alustaa.

Tutkimustulokset osoittivat, että osallistujat olivat tunnistaneet finanssiteknologian kehityksen ja digitalisaation merkittäväksi muutosvoimiksi alalla. Toimijoiden asenteet näihin muutosvoimiin olivat myönteisiä, sillä digitalisaation ja finanssiteknologian tuomat muutokset toimintamalleihin nähtiin enemmän mahdollisuutena kuin uhkana. Tulosten mukaan alan eri toimijat tunnistavat tulevaisuuden kehityssuuntiin liittyvän epävarmuuden ja erot kehityksessä eri markkinoilla. Tämä haastaa alalla toimivat ja sinne pyrkivät yritykset entistä parempaan valmistautumiseen ja muutosnopeuteen.

Avainsanat (asiasanat)
Finanssiteknologia, digitalisaatio, digitaalinen rahoitus, tulevaisuuden ennuste

Muut tiedot

Contents

Figures

1 Introduction

The very first formation of financial technology took place as the after-events of the financial crisis of 2007-2008. The genaral trust in the banking system was crumbling, which was a perfect opportunity for innovative thinkers to step into the picture. This was possibly the very first time when individuals were introduced to new digital financial solutions offering lower cost service through, for instance, mobile applications that did not necessarily need the blockchain of banks (Menat 2016, 10). Transparent, easy-to-use services without the administration of banks are constantly growing in the global scale as well as in Finland. It is then fair to ask how banks are prepared to face this massive turning point of financial services.

As financial technology (later on being referred to in the thesis with the word "fintech", which is a globally established abbreviation for finacial technology) is becoming a "new normal", players in the financial industry need to become more agile and change the way to pursue this innovation (What is Fintech 2016). Understanding the role of fintech is essential and inevitable in today's world both to business operations as well as individual consumers. Digitalisation in the financial services has created practically unlimited possibilities, but in order to be able to assimilate the bigger picture, it is necessary to start from the basics.

Research questions and objectives of thesis

The purpose of the thesis was to dig under the surface of fintech as a global phenomenom while concentrating mainly on its effects on the Finnish financial services. The method used in collecting the primary data was qualitative, based on interviews from groups operating in divergent fields in business. The thesis takes advantage of multiple perspective –approach, focusing on the influence of the technological change and its impacts on organizations and personal behaviors of the customers. The target was on answering three research questions which were utilized during the writing process and which were hoped to clarify the future role of fintech:

1. What are the major effects to Finnish financial services?
2. Who are the competitors of banks and how new players will be challenging banks in financial markets?
3. How should/could Finnish finance sector/banking industry adapt to changes due to global digitalisation?

The major interest of the thesis was to examine the prevailing phenomenom as "futures research". The purpose was not to offer absolute facts about the future state in terms of financial services and the banking industry but rather give an idea about the related visions and forecasts as well as possible directions according to the specialists. The thesis used a qualitative multiple-perspective research method as the main method and utilized it in the interviews.

Research process and structure

After introduction, the reader is introduced to the background of financial technology as a phenomena in chapter two. Chapter three examines the method used in the research, followed by qualitative study in chapter four. The primary data was collected by using a survey on expectations and opinions about the fintech and digitalisation of the financial services. The first contact to the participants was made by phone, and after their approval to take part in the interview, they were sent an e-mail with a cover letter and a link to the survey as well as essential information about the confidentiality of the answers gained. The primary data was compared to the contents of the analysis with the aim to find issues where opinions and future foresights of different layers are similar as well as spot the issues where expectations about the future differ from each other.The research findings were compared to the secondary data and theory part of the thesis in order to see in which extent they confirm findings of earlier studies as well as indicate new directions development may head to. Thus, the fourth chapter focuses on research results, while the fifth chapter summarises the content and discusses possible future scenarios and ideas for future research as well.

Glossary

Financial technology, fintech	"Computer programs and other technology used to support or enable banking and financial services" .[1]
Digitalisation	In the framework of the thesis, used by definition of everyday products and services using more digital technology to function. [2]
Peer-to-peer lending, crowd-sourcing	Contacting lender and borrower together without the need of banking system. [3]
Bitcoin	Digital currency created in 2009. Bitcoins are not backed by governments or banks and individually they are not valued. [4]
Blockchain	In the framework of the thesis, blockchain refers to a way of transferring any types of transactions on a digitalized platform without a centralized authority to confirm the process. [5]
Algorithm	Procedures following a certain set of rules in a correct way in order to perform a designed operation.[6] In the concept of fintech, algorithms are used to analyse data obtained e.g for the purpose of creating individual services in banking.

[1]: https://en.oxforddictionaries.com/definition/fintech

[2]: http://www.businessdictionary.com/definition/digitalisation.html

[3]: http://www.thorinvestment.com/peer-to-peer-lending-its-role-in-fintech/

[4]: http://www.investopedia.com/terms/b/bitcoin.asp

[5]: http://usblogs.pwc.com/emerging-technology/a-primer-on-blockchain-infographic/

[6]: http://www.businessdictionary.com/definition/algorithm.html

2 Theoretical framework for the research

The chapter introduces the core concepts of the thesis, starting from the definition of financial technology and digitalisation of financial services as well as familiarizing with the global trends in the area. Furthermore, it discusses the turning point of the financial services in terms of the growing role of technology and eventually concentrates on the prevailing position of fintech from Finland's perspective. After that the focus is on the Finnish start-ups as future challengers for banks. In the last section, the role of Finnish Financial Authority in fintech is clarified.

2.1 Definition of financial technology and digitalisation in financial services

Financial technology introduces a new era of companies, which revolutionizes the previously absorbed ways of dealing with payments, loans and sending money (Menat 2016, 10). By cutting restrictions on transparency and deleting the middlemen fees that banks add to their services, this is where specialized fintech start-ups step in to the picture by allowing individuals more authority of their own money (ibid.) Through peer-to-peer lending, fintech offers individuals an easier and more transparent access to money, and thus, fintech is closely attached to the overall digitalisation in financial services.

Digitalisation itself and the use of digitalized subtances and services is considered the "new normal". In addition to already digitalized services, for instance, in health care (Digitalisaatio muuttaa ihmisten ja yritysten arkea – myös sosiaalialalla 2016), new technology has been tamed to the banking services as well (Fintech - pankkipalveluiden tulevaisuus? 2015). It can be seen as disruptive technology because it fundamentally affects how businesses operate and eventually leads to a situation where old technology is unserviceable (Castrén & Snellman 2017). Consumer behavior is also facing changes due to new technology, as new mobile applications for money transfers and specific "cloudservices" are gaining ground (ibid.)

Currently fintech is considered to be quite dynamic phenomena in the crossing point of financial services, where start-ups and new market penetrators establish the services currently provided by the traditional financial industry. The value chain of financial institutions is getting more fragmented caused by technology development, dimming the borders of once well-defined players in the financial industry. Cavallo, 2016, illustrates the complexity and relationships of different players and intricacy in Figure 1.

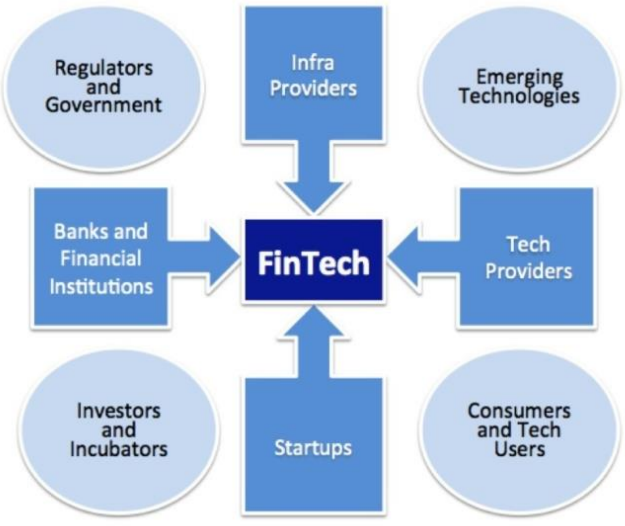

Figure 1. Environs of fintech (Cavallo 2016).

The traditional financial service industry, which is currently providing finance products and sevices, is challenged by technology-centered market entries and start-ups. The disruption caused by fintech is affecting both the traditional value chain of the traditional institutions and economic schemes. Once well determined players in

the banking industry are now facing a potential threat by the fintech companies providing new services and products in the digitalized format (Cavallo 2016). According to Cavallo, especially the “Millenials”, those who were born between 1980 and 2000 and who value customer experience and accessibility, are speeding up the absorbtion of fintech solutions. Customer centricity is referred to as the “DNA of fintech companies” and as customer value is constantly receiving more attention in the business world, thus, it is safe to say that fintech provides solutions for a growing demand of upgrading customer experience (ibid.)

Hand in hand with digitalized financial services goes the blockchain process. Blockchain is a thorough concept, which *“—will do for trusted transactions what internet did for information”,* (Rometty 2017). A specific blockchain process, as seen in Figure 2, has a likely prospect in future to turn around financial industry. Originating from the digital currency Bitcoin, a blockchain operates as an electronic transaction-process and recording system which does not need any third-party confirmation but allows every party to track information via a safe network (Kelly 2016). Because blockchain was originally created for supporting crypto-currencies, such as Bitcoin, it took time before it was utilized and adapted as a new technology in other areas as well, for example, in the traditional banking industry (Lucas 2017). Currently banks and other financial institutions are adapting themselves to the blockchain technology faster than expected (Kelly 2016) and in terms of financial services, a blockchain process allows more secure, decentralized and automated experience to the consumers.

Examples of banks using the blockchain process in their services are, for example, the originally Danske Bank’s Mobile Pay-application and the ICICI bank in India as well as the mobile banking application m-pesa. These “direct banking” applications, in other words, banks which operate and offer their services through the internet and mobile platforms, offers their customers cheaper and convenient services with lower or none service fees (FAQ Mobile Pay N.d). By offering easily approachable and secure payment services to their customers, banks gain essential ground in the competition with independent start-ups. 24/7 accessability and easy usage are the key terms in the provision of services.

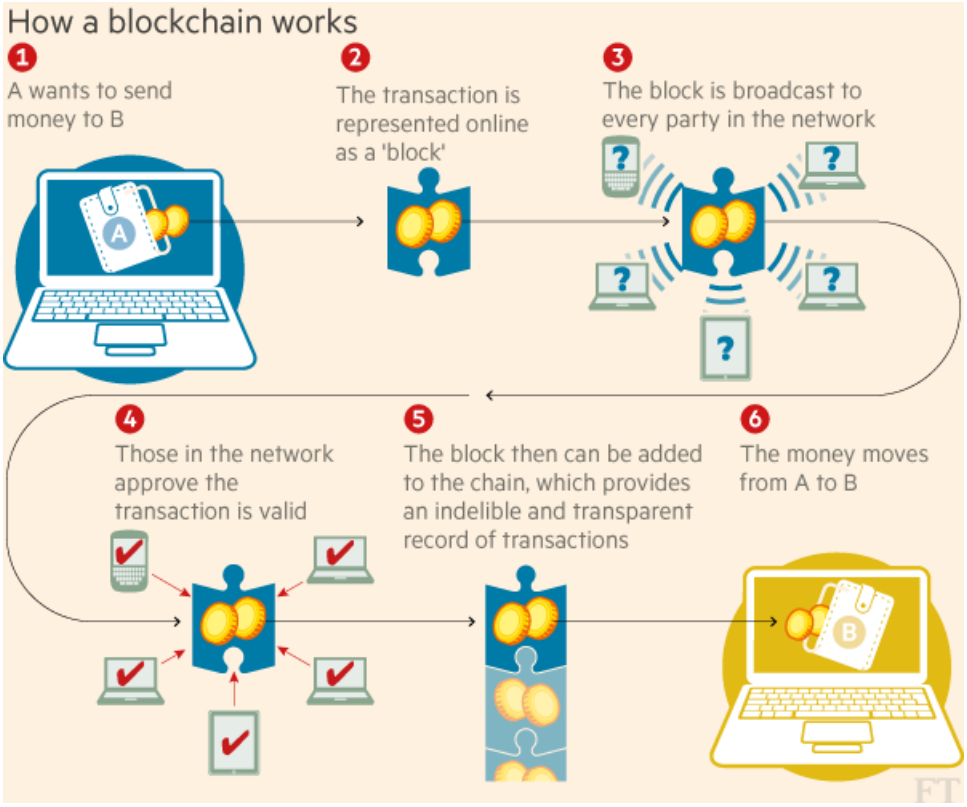

Figure 2. How blockchain works (The Financial Times 2015).

Start-ups are often referred to as the future direction setters and job providers. The main challenge is the breakthrough and disruption of competitive business, in other words, how to stand out from the big corporations and offer consumers better absolute value with the new products and services. Visibility and distribution are challenges to young business operations. The current trend and interest in fintech is providing start-ups the spotlight to utilize in customer seeking. Frankly, in most cases, start-ups face three main phases in their lifespan: Formation, validation and growth (Loikkanen 2013). In the fintech industry, start-ups have their advantage in a modern approach to the field and in their cabability to adapt themselves to the volatile business environment which is compared to the often slower and stiffer big corporations. Fintech start-ups have the possiblity to offer consumers financing services without the presence and authority of banks, which is fast and costs less to the customer as well. On the other hand, small start-ups might have problems in gaining the trust of the majority of their prospects as well as standing out from other small competitors. On some occasions, visibility can be difficult to gain by a young start-up.

During the first quarter of 2017, the global venture capital backing fintech start-ups rose to 2.7 billion dollars, and if the rest of the year sustains the pace of the first quarter, the funding in fintech during 2017 exceeds the year 2016 (CB Insights 2017). The direction creates a constantly growing interest in fintech start-ups, and and especially the European fintech companies have been penetrating the global markets during this year (ibid.). The trend is upward, and forecast positive according to the supply and demand of fintech services, but very little can truly be predicted as facts.

In the banking industry, the end product in the above-mentioned modern data analysis is more and more algorithm-based banking (Dapp 2014, 19). Digitalisation offers flexibility, efficiency and in a timely manner customized customer service. This is also essential for the traditional banks if they want to keep up with the other financial service providers (ibid.)

2.2 Fintech in a global perspective

The purpose of this chapter is to introduce the tendencies of digitalisation in the most important regions in the world in terms of fintech progressiveness. Almost every nation has its own specific financial regulations based on its definite culture, financial structure and historical background. Even so, it is necessary for fintech companies to form protected and reliable services despite legislation and geography (Wendenburg 2016, 22.)

United States

The United States, regardless of having one of the biggest fintech industries, is distinctly falling behind other countries and areas of the world when it comes to a decisive regulation policy (Kocianski 2017). According to Kocianski (2017), the regulation report from BI Intelligence (2017) affirms that compared to Asia and Europe, the United States' regulatory environment is more fragmented, as the regulations in the USA differ on the federal level as well as on the state level. The complexity of the regulatory system creates massive obstacles to the improvement of a rational and unitary fintech policy, which can be interpret from Figure 3.

Panel C: Summary statistics for the U.S. sample by year
Columns (1)–(7) are as described in Panel A, but calculated for the U.S. sample only.

YEAR	U.S. SAMPLE						
				CATEGORIES			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Nbr. Fintechs Started	Financing Rounds	Amount Raised (Millions $)	Financing	Asset Management	Payment	Other
2005	45	110	924	34	7	10	6
2006	63	157	1,360	40	5	12	16
2007	100	260	2,960	67	10	17	19
2008	104	214	1,540	81	14	15	15
2009	142	375	3,340	101	17	26	26
2010	185	426	3,220	125	17	43	35
2011	255	619	4,780	180	24	46	43
2012	263	530	3,720	187	25	52	44
2013	273	497	2,530	177	33	77	50
2014	235	315	987	160	33	77	29
All Years	1,665	3,503	25,361	1,152	185	375	283

Figure 3. Development of United States' fintech market during 2005-2014 (Haddad & Hornuf 2016, 27).

Even though the number of fintech start-ups has continued to grow rather steadily, recently the number and growth of these start-ups has dropped (Figure 3). Haddad and Hornuf (2016) claim that the growth of start-up generation is usually dependent on well-developed capital markets and easily exploited latest technology. The unharmonized regulations and the lack of governmental support is one of the biggest threaths to the US if it wants to maintain the leading position in the world's fintech markets.

The position of fintech in the United States can be partly explained by many mainly profitable companies, for example, the internationally operating PayPal, which allows consumers to send and require payments online by using their e-mail (PayPal: About us N.d.). During the first quarter of 2016, PayPal had 184 million active users (Number of PayPal's total active registered user accounts from 1st quarter 2010 to 1st quarter 2017 in millions N.d). In addition, the worldwide known Apple inc. provides the digital wallet service, Apple pay, which allows Apple users to transform contacless payment transfers (Apple: About Apple pay N.d.). Since its launch in 2014, it has acquired 12 million monthly users globally (Kharif 2016).

Europe

Intending to unify different governmental financial regulations, from autumn 2014 European Central Bank ECB has the sovereign authority to supervise banking sector in the Euro area, thus, this implemented the Single Supervisory Mechanism (European Court of Auditors 2014, 9). The SSM allows more unite financial policy to the Euro area while control is accumulated to ECB, however, the national supervisors continue to monitor the remaining banks on a national level (European Commission N.d). This intent of harmonizing the different national financial regulations eases international fintech companies' operations in European level.

Panel B: Summary statistics for the 10 most relevant European countries
Columns (1)–(7) are as described in Panel A, but calculated for each country separately.

COUNTRY	TOP 10 EUROPEAN COUNTRIES						
				CATEGORIES			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Nbr. Fintechs Started	Financing Rounds	Amount Raised (Millions $)	Financing	Asset Management	Payment	Other
United Kingdom	231	483	2,350	149	23	55	52
Germany	54	118	749	34	12	19	13
France	53	84	265	27	1	19	14
Spain	37	75	152	24	8	5	7
Netherlands	34	66	365	19	6	10	6
Ireland	24	46	203	17	4	8	5
Italy	24	43	68	12	3	8	5
Sweden	19	43	370	12	1	8	1
Denmark	15	21	25	9	0	7	3
Switzerland	15	34	41	12	2	4	4
Total	506	1,013	4,589	315	60	143	110

Figure 4. Development of European countries' fintech market during 2005-2014 (Haddad & Hornuf 2016, 27).

United Kingdom undeniably leads European fintech markets with number of fintech start-ups launched every year and amount raised in US dollars (Figure 4). London is often considered as a center of global financial activity - the country itself atracts new fintech players also by effective tax inventives and supporting regulatory policy. Therefore, it is a good base for startups to grow (UK FinTech: on the cutting edge 2016).

Founded in 2012, London-based start-up Osper provides prepaid debit card service for young people aged 8-18. The function of formentioned app is that parents can load their kids Osper card with specific amout of money to monitor their consumption and target of money spendings (About Osper N.d.) Osper is a good example of peer-to-peer funding, where the role of traditional bank becomes unnecessary.

Originally Swedish-based banking app Qapital *"--automates your savings by letting you set up Goals toward the things you want"*, and then *"save toward them by setting up different saving Rules*." Users' banking account is connected to Qapital app and they can set their personal Rules according to their will. Rules can include details, for example, rounding up every money transaction so that the amount rounded up goes to specific FDIC-secured account, where the funds can be withdrawn at any time even though the Goal would not be met (Qapital FAQ N.d.) Taking this into account, Qapital replaces the traditional saving account which a bank could offer to individuals.

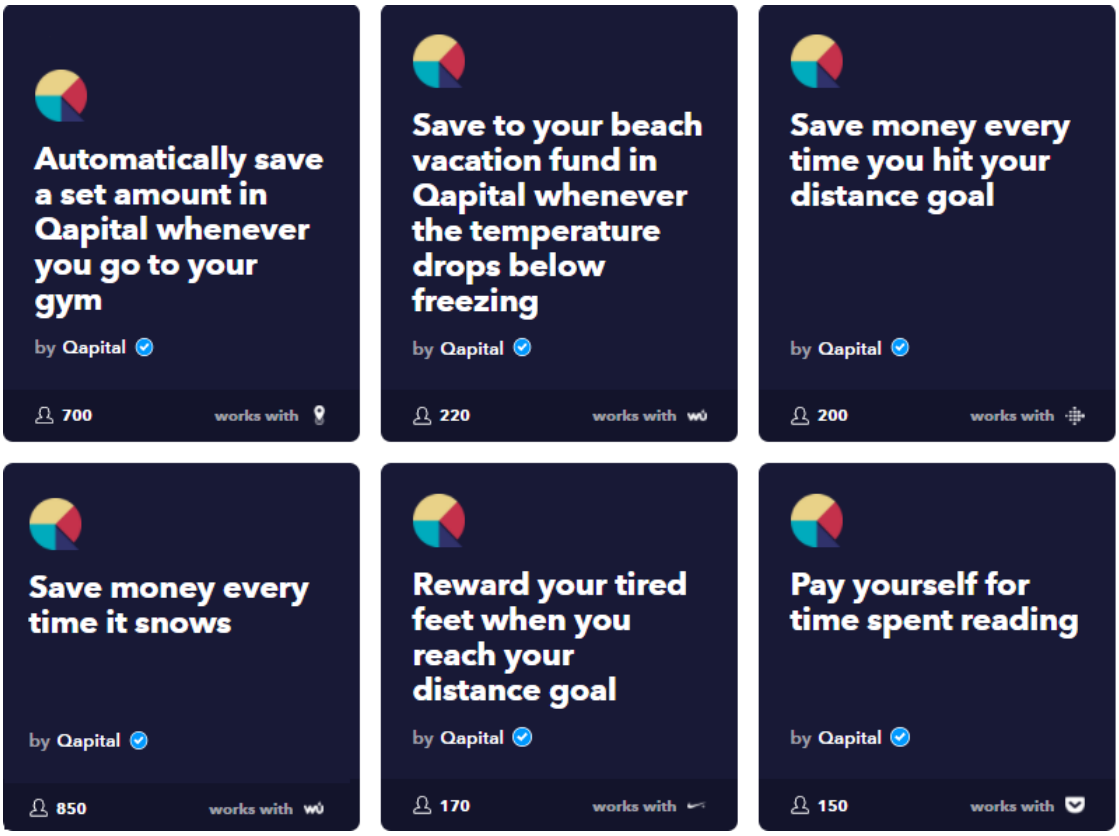

Figure 5. Rules that can be set to Qapital as in to save money to saving account (Qapital applets N.d.).

Asia

Propagation of new technologies and start-ups in Asia has lead to a setting where financial systems across the continent are facing remarkable conversion. Historically large banks have been slow and stiff in terms of adapting to almost fundamental technological change – however, nowadays start-ups and companies outside the traditional finance sector are gaining ground with new ways to deliver financial services. Regulators have sought to keep up with the constant growth of fintech and financial services (Creehan & Borst 2017).

In Asia, non-bank firms have taken part in payment system which have previously oeprated only in supporin functions, working in the background of traditional banks. The model is starting to change, as more and more non-bank companies have started to offer contemporary and innovative payment services (Creehan & Borst 2017). However, increase of financial accessability and more competent payment systems introduce brand-new risks and could also make unite regulation more hazardious (ibid.).

Figure 1: Non-Cash Payments Growth 2010-2014 (CAGR)

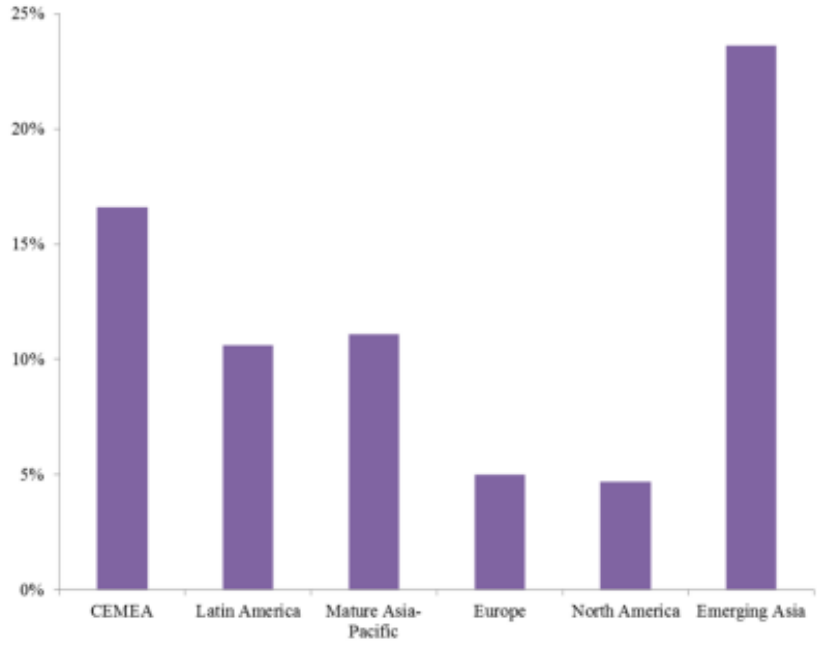

Figure 6. Growth of non-cash payments during the year 2010-2014 (Creehan & Borst 2016, 2).

As seen in Figure 6, despite the importance of cash in Asia, non-cash payments have grown rapidly during the years 2010-2014. It has been forecasted that by the year

2020, China alone will be representing half of the global ecommerce retails (Worldwide Retail Ecommerce Sales Will Reach $1.915 Trillion This Year 2016). Nevertheless, the inequality in development of digital payments infrastructure as well as limping logistics are braking the even growth of ecommerce markets in Asia (ibid.).

Launched in 2013, originally Japan-located start-up Alpaca offers data-driven stock trading with specific algorithm modified to individual's personal preferences (Alpaca About us N.d.). The core idea of the service is to track the data around successful trading event and save the data which led to profit – therefore the goal is to reach for maximization of the winning with the use of algorithms. Use of deep-learning engines in trading also *"—gets your error-prone emotions out of the way while trading*", (Tegos 2016). The company claims they add scientific solution to the constantly growing retail user foundation in financial trading. With computer-based monitoring of trading based on rationality and historical trading behaviour of individual, Alpaca offers its users more efficient services without the need of theoretical knowledge of financial trading.

Founded in 2014, Coins operates in Philippines and Thailand with specific block chain technology which allows anyone easy access to financial services by their mobile phone, even without an actual bank account. Using different wallet and online payment services, Coins mission is to make financial technology development advantageous to everyone (Coins About us N.d). Block chain technology, as explained in the chapter 1, allows money transactions between parties without the actual need of central authority e.g. traditional bank.

2.3 Trends in Finnish financial services and role of technology

Nordic countries are often considered as top class in technology development and innovations. Technological know-how in Finland in international standards is considered to be top quality – based on the research fintech in The Nordics, Finland came to the second place in terms of fintech investments, right after Sweden (Fintech in the Nordics 2017.) According to the study of Deloitte, the wellbeing of Nordic banks

and other financial institutions can be partly explained by the ability to perform profitably even through the EU crisis. Even with the current position and therefore advance in the business environment, they are also facing the change of business models in the field.

The obvious reason behind the fundamental change of the business models in finance industry would be growing interest in digitalisation and technological development in many other business sectors as well. Often “the Millenials” are the ones kept under a magnifying glass as a particular customer group with needs and wants considered to apart a lot from older generations. The preferable usage of financial services has come to a point where traditional ways of paying are slowly shifting away and they are forced to change their way of operating. When new players and solutions are constantly approaching the field, only way to keep up with the pace is to offer real-time, more efficient and transparent services to consumer - *“We are most likely last generation who uses plastic card as a payment.”* (Nordlund 2016).

According to specialists, the upcoming size and possible direction fintech will eventually take is challenging to predict. In January 2018, a new Payment Service Directive PSD2 will come into effect in the EU area. Pivotal change is going to be the opportunity of third parties to have access to banks’ customer information and possibility to offer, for example, card-based payment tools and account information. In practice this third party has access to customers account information and account transfers with the approval of the customer (Marjakangas 2017). It is common belief among the analysts that ways and tools of payment will be distributed and more fragmented after the directive comes into effect (ibid).

It has been forecasted that upcoming changes alongside the directive are going to slice almost half the revenue from banks’ payment transactions. It is safe to point out that this has partly put banks to a position where they have had to develop new services to offer for their customers. Finnish Op-Ryhmä has been spreading its services to healthcare and car renting business while savings bank Nooa offers services where their employees can come and visit customer who is disabled or does not want to use digital services at all (Karismo 2017.) On the other hand, markets that are open to new players enable the formation of new start-ups and also makes it possible for

banks to co-operate with new companies so that both parties can benefit from this process (Marjakangas 2017).

Strict regulations slows down the development in fintech start-ups. If a service is bringing added value to a customer and getting business lead compared to competitors, a country will eventually make enough effort to break down prohibitive regulations or make favourable changes to it. A big challenge and inhibitory for fintech development in Finland is considered to be lack of financial capital or distribution to other sectors than fintech itself. Even though Finland is competitive in international markets in terms of service scape, many successful international players have harnessed large-scale resources which compensates dominatingly against lower level of technological know-how (Riikkinen 2015, 13.) According to Riikkinen (2015), for this reason it would be wiser for fast-growing start-up to sell the company to a foreign competitor instead of trying to break-through international markets for instance by company takeovers. Another reason for Finland to lack behind the international players is the complexity and yet unknown possibilities to build partnerships between banks and start-ups – partnership that is already ordinary for many international competitors.

While customer information is no long only exclusively property of banks while third parties step into the picture, the threat picture of cybercrime grows bigger. In Finland, Financial Supervisory Authority's role as a monitoring organ as well as regulation setter in the future of fintech will be discussed more specifically in the following chapter "Role of Financial Supervisory Authority in Finland".

2.4 Role of Financial Supervisory Authority in Finland

Financial Supervisory Authority has the responsibility to supervise financial sector inter alia banks, insurance companies, pension corporations, financial service enterprises and Helsinki Stock Exchange. It operates administratively among side Bank of Finland but is independent in its decision-making in supervision (About us N.d). The main objective is to guarantee and maintain stable and reliable actions of financial

markets in Finland while developing good practice in procedures of supervised institutions (ibid.).

Keywords in payment services are currently circling around globalization, real-time availability, mobilization and growing trend of block chain processes in services. Digitalisation itself has a major influence in supervision and authorization of payment service providers – offering these services in Finland requires license accepted by Financial Supervisory Authority. While new players and directives are stepping into picture, the main targets remain to be maintaining trust in financial markets and risk management. Payment services need to guarantee that they are safe for customers to use - customer information as well as assets are protected (Nisén & Koponen 2016, 54). From the point of view of supervision, it is relevant to understand the technology used in new services to enable requisite monitoring. If authorization is incomplete or regulations offer clear pitfalls for innovative service providers, these players might utilize the opportunity to function without permission. These rather juridical complicated “blind spots” for regulation setters contain for instance different digital currencies, crowdfunding and peer-to-peer lending. To be able to create impervious system that minimizes the misuse of regulations but on the other hand does not slow down the fair competition and innovative services might take time. This is one of the main challenge for authorization (ibid.).

As mentioned previously, even though authorization needs to be secure enough, regulation setting should not prevent development of new payment services. In January 2018, when new payment service directive comes into effect, the objective is to create coherent environment for competition to help forward technological progress across the country borders in the Europe. Nisén and Koponen (2016, 55) state that the problems usually occur with juridical aspect of maintaining unite regulation system, as interpretation of regulations might differ depended in the country in question. Offering payment services online enables operations globally. While globalization is speeding its pace in the field of business, monitoring these companies across countries might get more challenging, especially with players outside Europe which won’t be tied for EU regulations and law. As every nation has its own regulation setter and authority, confusion in legislation across the borders of nations might in the worst case benefit misusers of law. Like in misusage of changes in currency values,

providers aim where regulation system is loosest. This causes unbalance in competition, as players operating in stricter regulation area are underdogs in penetration markets with tighter requirements from the authority (ibid.)

Start-ups providing their online payment services across the borders in the Europe cause challenges for Financial Supervisory Authority as well. Where big banks might have slower and heavier processes, start-ups can offer customers more real-time services with better usability – the thesis will concentrate more on start-ups during the following chapter. Nisén and Koponen (2016, 55) admit that small service providers are challenging for the reason that even though they operate on a smaller scale compared to bigger institutions, their authorization should not be any looser – risk management is extremely essential. New technology and alternative ways of paying are intriguing to traditional players as well, not only to newcomers. Stages of payment can be distributed by block chain process even to different companies operating in different countries, which brings along more challenges to monitoring processes. Some of the links in the chain might not be regulated by Financial Supervisory Authority which puts the whole block chain at a risk, as management and authority gets challenging. This might come as a surprise for consumers as well – with publication of PSD2, consumers are told to consider carefully to which companies they give rights for customer information, as service owner and process executive can be maintained by two separated companies (ibid.)

Finnish Financial Supervisory Authority claims that by setting reasonable regulations and demands for technical processes customer information will be maintained secure in the future. The possibility of unintended exacerbation of new innovations is downside Financial Supervisory Authority is aware of – authorities can offer counselling in interpretation of regulation system for players wanting to break through markets. This “Innovation help desk” of Financial Supervisory Authority promises to welcome and help start-ups with their upcoming product, service or procedures (Tarvitseeko innovaatio toimiluvan 2017).

2.5 Future of start-ups as fintech challengers

The trend in current research and discussion support the forecast that traditional payment is going through massive changes. The expectations of money liquidity and real-time money transferring are being answered by development on technology and regulations which support rather than slow down digitalisation. The concrete outcome of this turn point is the urge by start-ups to fill different roles of banks and payment service platform providers (Malinen 2016, 30). In January 2018 new payment service directive will open payment service markets also to other players than banks – In Finland, there are already small businesses offering targeted financial services for their customers.

International visibility gained Finnish start-up Holvi offers *"Alternative option for traditional banking services for entrepreneurs, who can manage their financial administration practically in one service",* (About Holvi N.d.). It has traditional bank account features including invoicing and digital book keeping services – from having an online store and collecting money from customers to saving receipts digitally, Holvi manages all the steps in service chain in the product they offer.

Where Holvi concentrates offering their services to entrepreneurs, Finnish company MONI offers real time paying services between MONI accounts free and on global scale outside Finland as well. Where money transfers between accounts from two different banks could take up to few days, MONI claims that they make peer to peer funding as easy and real time as "sending a text message". Monitoring account balance has also been made easier and more interesting compared to checking traditional bank account balance – this point being presented as a strength compared to bank accounts, as it encourages people to smart usage of their money and pay attention their consumption behaviour (Näin MONI toimii N.d).

"*In modern society banks do not dictate conditions of loans, people themselves do*", (Fixura Home N.d). Fixura brings together two groups of people: lenders and borrowers. The core idea is simple: individuals are allowed to create and form personal loan conditions according to the need of both parties. This swift to peer to peer funding and other new financing methods instead of utilizing traditional bank services is

part of global phenomenon called sharing economy – completely new ways to finance grow their role on the side of banks and other financial institutions (ibid.)

New ways of paying offer the possibility to use services similar to online bank services without the actual presence of a bank. Where start-ups can utilize the new opportunities, also banks can maintain their position by developing new digitalized services. Banks have had leading position in long customer relationships and loyalty, and whereas start-ups need to win customers on their side, banks are usually referred as the steadiest and most trustworthy institutions you can put your money in – at least in Finland. Banks have had the hold of customer information for longest, so it might be easier to start developing products and services that are wanted and preferred by the majority. (Malinen 2016, 31).

Confrontation between banks and start-ups isn't the only possible way in the future. Earlier mentioned start-up Holvi and Wirecard bank have collaborated to offer better and centralised services for their customer to upgrade the customer experience. Collaboration can be referred as a key and benefit for both parties. Whereas banks are seen slower and more restricted by regulations compared to start-ups, they can offer entry to global payment system and also to their customer database. On the other hand start-ups can concentrate filling constantly changing customer demands with more agility than traditional banks by themselves (Hatami 2016, 170).

In 2016, Financial Supervisory Authority mapped out with a survey the changes digitalisation results in daily operations and future foresights of supervised facets. The outcome of research points out that primarily the changes caused by digitalisation are braced by making own operations more effective and concentrating on own innovations, rather than seeing collaborating as an asset. As seen in the Figure 7, over one fourth of facets answering to the survey try to prepare themselves for digitalisation and its challenges by increasing development of their own services. Companies also prefer to upgrade their overall business plans to suit better digitalized era and to develop already existing functions. Cooperation with other players offering financial services and fintech start-ups was only on fourth and fifth most common way to prepare oneself in digitalisation. Finding partners to cooperate seems to be secondary as

independent actions towards development of organization is found more reliable and popular option (Toivanen 2016.)

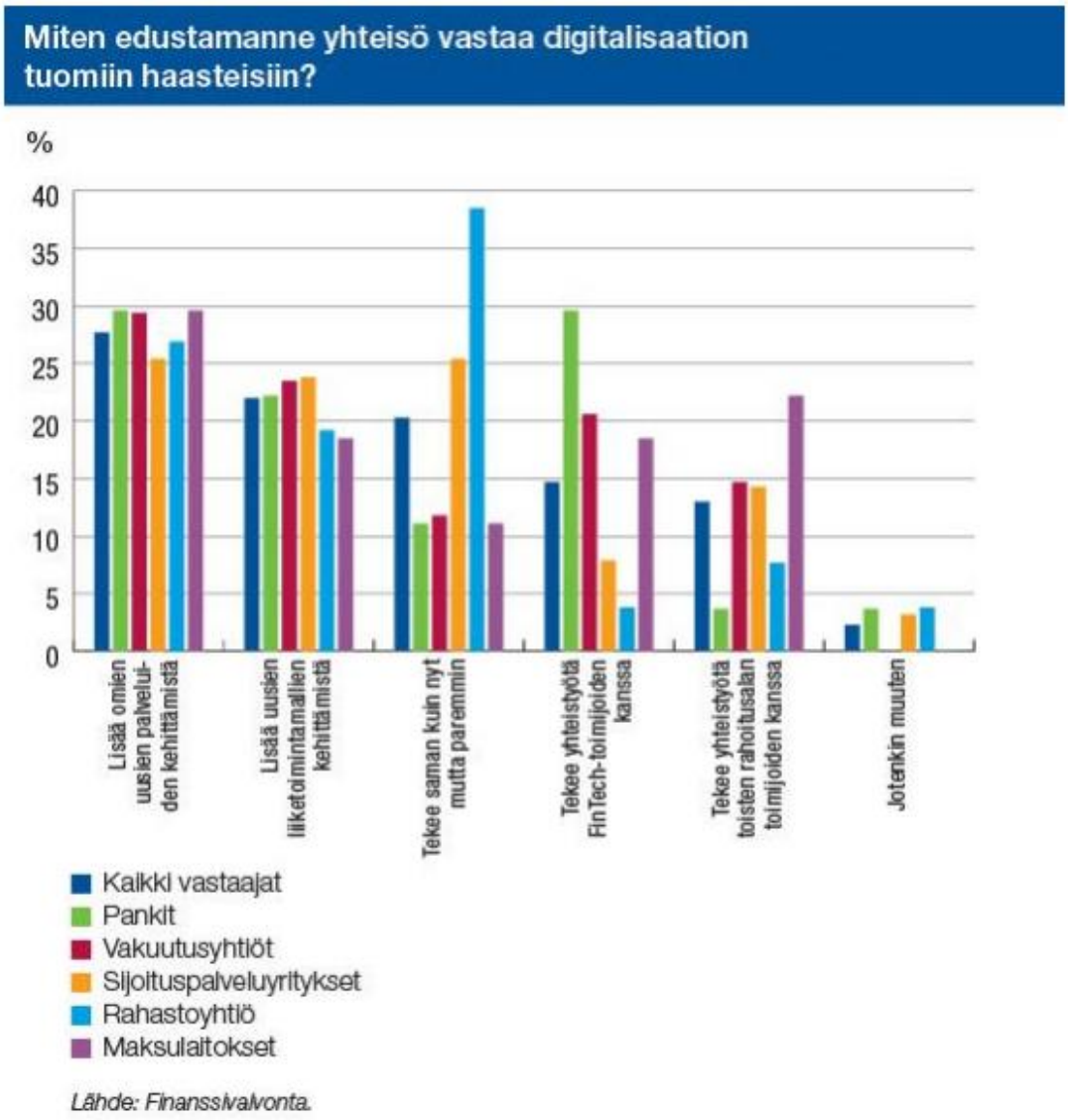

Figure 7. How the represented community answers to the challenges brought by digitalisation (Toivanen 2016).

3 Methodology

This chapter presents the methods used to achieve qualitative results from focus groups and analysing the results in a manner that connects the answers to research questions presented in the chapter 1. The method chosen to support qualitative data

was multiple perspective analysis – the analysis contains multiple and possibly differing viewpoints and opinions from participating parties (Park, Kapoor & Leigh 2000). The objective was to perceive opinions and attitudes concerning digitalisation in the Finnish financial sector and examine the possible differences in the answers depending on the interviewees' field of work.

3.1 Methodological choices

A specific tool for multiple perspective research is known as the TOP model, which studies the research content based on technological, organisational and personal perspectives (Tongkaw 2013). The TOP model is used for collecting the data, therefore it may be helpful in forming the research questions as well as in the analysis of the data collected. Since the focus in the research was in finding the differences and similarities in between the organisations, especially technological and organisational perspectives were considered in the implementation of the research layers and in formation of the questions presented to the participants. One of the focus points was to examine possible organisational changes in operations in the future. From technological perspective it could be possible to track whether there would be differences in technological development between the participating layers. Personal perspective and changes in personal actions in the future was included throughout the survey questions, but especially when asked about the individual expectations of the changes in the payment services and the financial industry as a whole in the year 2020.

Studying the data from multiple perspectives helps in understanding the entirety of a certain phenomenon. However, reading and analyzing data from multiple perspectives requires reduction of possible visual complexity of results. Multiple perspective analysis was most suitable for the study because of the presumption of gaining heterogeneous attitudes and point of views about the subject under examination (Park & et all. 2000).

Since the phenomenon of the technology turning point in the financial services is rather new, studies on the topic are relatively recent and they concentrate more on the possible future scenarios, predictions and trends rather than absolute facts.

When a current or upcoming event is supported only to a small extent by an already known theory base or studies, qualitative research is considered the most suitable method to examine and explain the phenomenon as a whole (Kananen 2014, 16). As the role of fintech has a differing impact depending on the field of one's organization, it was essential to study and interview individuals working in different institutions in order to gain a realistic and multidimensional entirety of answers. Thus, the method utilized in the thesis to support this type of research was exploratory study – rather than trying to find solutions for existing problem, the purpose is to ask questions to get better understanding of the problem and to offer new insights about the current phenomena (Saunders 2009, 139). Exploratory research examines and explores the research questions, giving space for further future research about the topic. Future research itself explores the possible scenarios and aims to analyse potential sequence of events about certain phenomena – in this case, technology development and digitalisation (Mitä on tulevaisuudentutkimus? N.d.). The goal was to study empirical observations of participants from past and future to create better understanding of already existing studies and new information. The past and future were therefore examined from the perspective of future needs and variable scenarios (ibid.).

3.2 Expert surveys from "three layers"

Until now, the thesis has concentrated on secondary data and examined the subject by explaining the theoretical background to support the primary data gained from the expert surveys. Interviews as a reasearch method were considered reasonable for the topic as they present thorough information about participants' thoughts and experiences related to a certain topic (Turner 2010, 754). In the future research, empirical experiences and opinions are examined in the purpose of analysing prevailing and future scenario from multiple perspectives. The primary data gained from the interviewing process was subjected to theory analysis of the thesis to spot and analyze the similarities as well as divergences between primary and secondary data studied. In order to gain subjective entirety of the effects of digitalisation on financial services on a national scale as well concerning to take into account

globalisation, interviews were directed at players operating in three different layers. The first layer represented fintech start-ups and newcomers in the field of finance in Finland. The second layer contained banking sector while the third layer included the Financial Supervisory Authority in Finland. As the focus was only in Finnish companies, picking the suitable candidates was rather uncomplicated, and it simplified the whole research process as a whole. Based on the research questions, the core idea of the study was to clarify the effects of digitalisation on the financial services among different industries. It was reasonable to concentrate on market penetrators, who were digi-native newcomers with a smaller customer base compared to the traditional banks. As the new payment service directive blurs the exclusivity of banks as the providers of financial services, legislative questions and regulations rose to the fore. Therefore, the Financial Supervisory Authority was the third and final layer of the interview process. How these three layers were affected by the fintech is elaborated in the following chapters.

3.3 Research and implementation

The first aim in the set up of the interviews was to contact and form suitable focus groups for the primary data. The objective was to interview persons who had general knowledge of digitalisation in their every-day operations but no expertise in digitalised operations was specifically required. The participants were given the freedom to forward the invitation to the interview to their colleague who would be more suitable to participate in the process. According to Seale (2004, 16), interview data can be referred to as *interview data-as-a-resource,* where the information collected is considered as impression of interviewees' experience and their vision of the reality of the outside world. In this semi-structured interview, the aim was not to find facts but rather to form understanding of the individuals' perception of the topic as a whole.

The participants were selected randomly based on their current field of business and divided to represent the layer they work in. The aim was to get subjective opinions from business experts, whose answers could give a guidance to understanding of

each of the layers opinions and views also in general without risking the reliability of the study. After choosing the suitable candidates to participate in the interview, the focus groups were contacted by phone, and after their permission and willingness to participate they were re-contacted with an email giving guidelines on how to fill in the answers in the electronical questionnaire. In order to enchance efficiency and time management during the research process, the interviews were executed electonically via the Google Forms platform. The answers were collected during a period extending from November 2017 to January 2018. The data gained from the interviews was analysed by comparing the results inside each layer as well as comparing answers between the layers and collating them with the theory base. All together eleven answers were gained: four from the first layer, four from the second layer and one from the third layer.

As the number of Finnish start-ups functioning in fintech is comparatively small, the formation of the Layer 1 participants was rather simple. The participant organizations included in the Layer 2 varied geographically as well as by their size, and this made it possible to gain objective insight of the position of banking sector compared to smaller players in the field. The Layer 2 participants were partly chosen by utilizing the already existing networks of the author of the thesis and partly by random sample. Monitoring and legal issues on the national scale were comprehensively related to the Finnish Supervisory Authority, and thus, the third layer included only one respondent.

The interview questions were formed based on the research questions and the core problem the thesis which was examining the current and upcoming role of fintech in the financial services. Forming the suitable questions for the three layers interviewed was the second aim in the interview process. The questions varied depending on the interviewees, but the main object and set-up remained the same for all the three layers. The questions mainly focused on the possible upcoming effects of digitalisation on interviewees' working environment. As the thesis examined digitalisation in financial services as a future pheneomenon, SWOT analysis was a reasonable tool to use while creating survey questions. The analysis is often used to classify internal and external factors influencing an organization. Its simplicity and functionality for presenting organization's strenghts, weaknesses, opportunities and

threats has made it an extremely suitable tool for analysing development processes (Pickton & Wright 1998). Additionally, it helps both the interviewee and interviewer to understand the results more comprehensively. A complete form of the survey for each layer can be found in the Appendices.

3.4 Plan for research quality and ethics

When conducting the interview process, the ethics of a research were considered carefully. Saunders (2009, 180) bundles confidentiality, anonymity and use of suitable language as ethical principles that were also acknowledged when preparing and executing the interview process in the thesis. The study was conducted open-minded and with fair actions, making sure the participants understood the process as a whole and how they are referred in the analysis of the study. The author interpreted the primary data in neutral manner and with fair procedures, so study remained supportful to ethical principles the whole time.

Apart from ethical issues, the research quality was also measured through its reliability and validity. According to Saunders (2009, 156), Easterby-Smith et. al (2008) refer reliability as the coherence and concistence of the research findings. In other words, the results should remain the same in all the other occasions, this implying that if research would be re-conducted the outcome would remain similar compared the former findings. Observations should prevail in cohesion despite the observer – if the research was done by multiple participants, the conclusions should remain alike. Ambiguous and indefinite raw data can lead to different interpretations making the reliability of the research hazardious (ibid.). In qualitative research and especially when conducting open-ended interview questions, it is obvious that answers vary each time interview is conducted to different interviewees. To strenghten the reliability, the findings should give a guide to understanding of each groups opinions and views about the specific topic examined. The observation of trustworthiness is essential.

There exists certain threats to reliability, along to Saunders (2009, 156), Robson (2002) specifies precisely four of them. First of all the timing of data collection should be neutral minimazing the *participant error* – the influence of external factors, for

example Monday-blues or enthusiasm about the weekend on Friday. On the thesis' questionnaire this was avoided by letting participants fill-in the survey whenever they had the suitable situation and enough time to concentrate on the process. *Participant bias* can occur when authoritarian management is executed in the organization or the anonymity is threatened in the interviewing process. Participants may answer how they think they should be answering, as a representative of the specific organization or the position they work in (ibid.). The thesis's survey participants were only divided by the three layers – start-up employees, banking experts and authority – so anonymity was secured completely.

Observer error is implicating the possibility of different ways to conduct and present the interview questions and for that reason affecting the results inadvertently. This error may be caused by indefinite verbally formation of questions or, for instance, unnecessary use of jargon. Fourth threat to reliability is seen as *observer bias* – analysis of the results may differ between analysts (ibid.) This could be seen as a problem of face-to-face interviews without audio recording, since researchers might interpret answers attached to non-verbal gestures very differently based on, for instance, what advocates their opinions and expectations.

Validity consists a perception that the findings should always correspond on how they appear to be about. In other words, it determines the truthfulness of the research results. The use of term validity has been argued by researchers whether it is applicable in qualitative research in the first place – the validity is often gained by measures which is more suitable for quantitative data analysis. More suitable words for qualitative research are considered to be for instance *quality, rigour* and *trustworthiness* (Golafshani 2003, 602).

In this thesis, conducting case study including only a few organizations could threat the generalisity or, in other words, external validity of the research. For that reason the purpose was not to offer theory suitable for absolute genaralization but understand and explain the particular research setting (Saunders 2009, 158). The possible generalization can be executed outside the focus group with careful and moderated approach, for example, when thinking about the financial sector regulations which remain the same for organizations operating in certain country. Organizations which operate in the same industry most likely have similar benefits

and burdens of legislation in specific country. Therefore, the possibility to generalize opinions and expectations can be done cautiously.

As the questionnaire was presented to employees working on different positions, the "good news" syndrome – interviewing only employees working in top level - was succesfully avoided (Saunders 2009, 158). The research met its targets to comprehensively understand and explain the phenomenom of digitalisation in Finnish financial services. In consideration that the topic has not been studied for long as the digitalisation as its form is rather new and constantly developing - the theory base of the subject is rather young - the aim to detect information for further studies was achieved.

4 Research results

In this chapter the research findings are presented separately by each layer. Starting from the small-sized start-ups and new players in financial service producers, the author's presumption was that these stakeholders are the ones benefiting from the fintech the most – they are considered to obtain the agility and flexibility in the decision making compared to large corporations and, in the thesis, the Layer 2. Digitalisation in banking level could vary the most, as bigger banks assumably have prepared themselves for accelerated competition. Authority level consisting the third layer presumably has to conform new threats of digitalisation and emancipated payment transactions. The thesis' interviews were purposely created so that the participants did not necessarily have to acquire expertise in financial technology – it was enough they felt like they had enough knowledge to comprehensively understand the questions and awareness of the global phenomena of digitalisation in financial services. The aim was to discuss subjective outlooks from each layer participants so that framework for objective observations could be made.

4.1 Results from the Layer 1 – Start-up employees

The focus group Layer 1 consisted all together four representatives from Finnish small to medium-sized enterprises who operated in the field of finance. All together 10 contact requests were made via phone, which made the participation percentage

40%. The interviewees were selected to represent all ages and genders while the geographic location of attendants was incoherent but mainly based in Helsinki metropolitan area, Tampere and Turku. The questionnaire for the Layer 1 consisted nine open-ended questions in total. The participants were referred as "SE1", "SE2" and so on for abbreviation of "Start-up employee". The questionnaire can be found in its entirety in the Appendices.

It can be interpreted from the answers of four participants that the experiences and visions about the theme questionnaire contained stayed rather coherent. When asked about the opportunities of digitalized era in financial services, all four participants saw digitalisation itself as a possibility to develop their business as the way it is currently. According to SE2, breaking point of digitalisation is seen as possibility to "*answer the demand of quick and easy financial services*", while SE4 considered development of fintech has been the first shove to develop business model to its currently form. When asked about the preparations about the possible upcoming changes digitalisation might bring along, the overtone among the answers was confident and changes were seen more in a positive than in negative light. *"We have developed our digitalized financing platform and our company's biggest technology project is ready in spring 2018. New technology suits better constantly changing opportunities in the world of financing" (SE1).*

Investments in fintech have raised dramatically among the past years. Development in digitalisation has offered start-ups the opportunity to challenge traditional players in their leading positions in the field of financing (Tuominen 2016). This argument can be supported by construeing the answers to question two – small enterprises invest in new innovations, which suit better the current and upcoming demand of these services. Start-ups have had the advantage to build their whole business model according to the needs of digi-generation - players who have existed longer need to adapt their already existing strategy to suit better the changes in the field. This can be extremely expensive and time-consuming, but also vitally important if the aim is to keep up with the global trends.

When asked about the strenghts SEs have compared to traditional banks, the describing adjectives which popped up among the participants were for instance the following: *"Faster, more agile, less bureaucratic executor, modern and original."* SE1,

SE2 and SE4 also mentioned they have customer-orientated and personalized approach in their services, which may also give cutting edge compared to traditional challengers.

Threats of digitalisation consisted several different themes in answers. SE1 and SE4 brought up the role of financial authority, as strict regulations might slow down the business development and make it harder for small enterprises to operate profitably or even continue their business. On the other hand, SE2 and SE3 mentioned the role of competition and uncertainty of industry – global swifts in trends can be unpredictable and hard to forecast, therefore preparation in advance is challenging or almost even impossible. This might create tensions from the side of start-ups towards financial authority. When start-ups wish looser regulations, the same time financial authorities globally have troubles monitoring for instance the crowdgunding across the country borders and constant formation of new providers of finance (Nisén & Koponen 2016, 55).

Biggest impacts to financial service providers brought up in the survey were the necessity of digital comprehence, outsourcing and also automation of certain work tasks. Even though customer-orientated approach to services was highlighted in the answers to question three, SE2 and SE3 thought face-to-face customer service is decreasing because of the digitalisation. This argument can be supported by multinational financing corporation *Citigroup*, whose advisory board member Ronit Ghose stated that by the year 2025, 50% of bank offices is Finland, Sweden, Norway and Denmark will close their door permanently (Herrala 2017). Ghose continues that banks, as we currently are familiar with them, are soon history as for intance mobile phones alone can offer the same services and keeping bank offices open is non-profitable use of resources (ibid.). SE3 stated that big part of work tasks are being automated already, and the direction maintains the same.The key is to offer services independent of time and place – "*Customers require real-time payment systems that are available twenty four hours per day" (*SE2).

Only SE1 mentioned the importance of co-operation among the businesses to accomplish and strenghten the competitiveness of Finland's finance services in global scale. As pointed out in the Figure 7, co-operation among the fintech players as well as other financial service providers is not seen as appealing opinion compared to

developing oneselves own business models more suitable to current needs (Toivanen 2016). The actual percentage of those concidering cooperation with other financial service providers was between 13,5% - 20%. For the reason that the Layer 1 interview consisted four participants in total, it is inadequate to point out that 25% of this questionnaire participants would consider cooperation as the key to gain competitiveness. According to the Figure 7 results, cooperation interests more banks than small enterprises possibly because of the different form of competition in the field. Cooperation with other players interests minority of fintech start-ups. Other way to strenghten the competitiveness is linked to authority level. Finnish Financial Authority should support and possbily re-form regulations so that potential innovations would not be slowed down for regulative reasons (SE2).

When asked about the future forecasts and expectations where paying and lending are heading to, all participants highlighted the alternative options for financing apart from traditional banks – small financial institutions, crowd funding and paying via mobile phone are gaining foothold. The overall opinion was in cohesion: banks will not sovereignly rule the financial industry in the future.

4.2 Results from the Layer 2 – Banking sector actors

The second focus group consisted four participants in total from banking sector, which were chosen randomly to answer the survey. Representatives were geographically located across the Southern Finland as well as Central Finland. This focus group's participation percentage was 30%, making it slightly lower than the Layer 1's. This could be due many reasons, for instance time management problems or that the survey did not reach suitable person to answer survey about digitalisation. Low participant percentage might also be due to low knowledge about the theme itself. The survey included seven open-ended questions in total. In comparision to the Layer 1, participants in the Layer 2 were referred as "BE1", "BE2" and so on for abbreviation of "Banking Expert". The questionnaire can be found in Appendices.

When asked about the possibilities of digitalisation, all participants agreed that time management has gotten more efficient and benefitical for customers. Digitalised services were seen as *"flexible, easy, fast* and *easily accessible*". BE2 mentioned also benefits of automatisation and robotics, formerly mentioned becoming more common among the financial service producers in general while some work tasks disappear completely (Kauppi 2017, 34). BE4 mentioned that due digitalisation, it is possible to allocate resources more profitably, when time-consuming and stiff tasks are done by digitalized party. With practical example BE4 explained digitalisation can provide extra information about the customer, which would not have been possible in the early stage of customer engagement without digitalized services – both parties benfit, as customer can get more personalized service according to his or her needs.

Preparations for upcoming digital changes have been started among the represented banks – BE1 stated how service producement is being spread to different fields of business, so that its possible to *"be more than a bank to our customers".* This spallation of services is already happening in Finland - banks spreading their operations on different fields of business than financing was focused on chapter 2.3. When certain prodecures are under fundamental digital change, employees need to adapt to them as well – BE3 underlined the importance of educational aspect to make digitalisation familiar with the workers. Where start-ups might have been founded due digitalisation and their business models are modern, banks might have bigger gap to fill with not only digitalising the already existing processes but also engaging the workers to them effectively.

Strong brand and trust were pointed out when asked about the advatages of banks compared to new players in the field. BE3 mentioned the unbalanced age distribution particularly in Finland – older generation is not necessarily as excited or trustful about the new technology and smaller, more uncommon alternative for banks. Banks enjoy the trust and experience, as well as long customer relationships, which are seen as the biggest strenghts. BE1 mentioned centralized benefits – banks can provide more and more services apart from traditional financing.

All participants mentioned that one of the treats coming along the digitalisation is the accelerating competition and loss of customers to new challengers. BE2 commented on also unfair regulations from the authority level – regulations are seen

as more favourable to smaller, new players, while regulations in traditional banks are instructed so that they wear out more resources and require heavier processes to run. Demand for agility in changes is seen as urgent. New players are not only seen as threat in terms of losing customers, but also as following: *"--possibility of gaining bad reputation for the whole field – if companies with poor procedures are rushing to industry and are the reason for market disturbance or other unpleasent outcomes", (*BE4).

Sixth question was formed similarly with the Layer 1 survey – all four participants agreed that anticipation and regeneration are current and new norm in the field. BE2 and BE4 both brought up the investments and engagement of own workforce to upcoming changes. *"The courage to be a striker, there's no need to be just modest underdog in the field", (BE2).* BE3 indicated how *"--from our country's business economic history we can see that the potential we have hasn't always been engaged and utilized as profitable as possible, and to prove we have learned from that we need to understand and react to changing global procedures with effective operations."*

Future forecasts brought up the emphasis to fully digitalised banking services and decrease of physical banks. All participants agreed that technology development increases customer service in electronical formation – face-to-face sercives shrink down which leads to decrease of workforce by even a third from its current amount (BE2). Both BE2 and BE4 pointed out that consultants are required for more detailed and analytical expertise in financial management and also visionary touch to deal and construe data gained from customers. BE4 commented about the growing popularity of paying via mobile phone instead of regular credit card – alternative payment option suggestions had similarities among the both the Layer 1 and the Layer 2.

4.3 Results from the Layer 3 – Supervisory authority

The third layer consisted participant from the authority level. The responbility of supervision of financial sector and setting regulations is on Finnish Financial Authority's shoulders – that is why the final layer consisted only one participant. The questionnaire consisted six questions in total, and they were re-formed from two

first layers suitable for authority level. To maintain full anonymity, the participant was referred as SA1 for abbreviation of “Supervisory authority employee”. Full questionnaire can be found in Appendices.

Finnish Financial Authority’s responsibility is to create preconditions to digital service- and product development – at the same time it is crucial to maintain the protective of customer and proper running of finance markets. SA1 highlighted that one role of Finnish Financial Authority is to *“remind, that digital solutions are maintaining tools - the substance itself has to be kept in order constantly”.* This can be interpreted that digitalisation should be seen as as supporting aspect, while the core product or service has to be maintained in order like it has been before the digital revolution – digitalisation should not offer any pitholes to circle regulations.

Monitoring development of operational environment and collecting information while analysing risks were procedures SA1 brought up when asked about the possible preparations financial authority has executed as a response to digitalisation. Authority level is required to manage risks, mirror, and be up-to-date about unpleasant development directions. Similar as in the Layer 2, investments in workforce in terms of education and familiarization to topic were considered as important procedures.

SA1 expressed concern to both the Layer 1 and the Layer 2 industries – as breaking point of digitalisation can be hard to perceive comprehensively, the turnside can be extremely harmful. “*Traditional players do not necessarily see ongoing change or do react to that fast enough. New players might have too high expectations about the operability of their own business.”* Both arguments could be somewhat supported by the previous survey results of the Layer 1 and the Layer 2: Two out of four BE’s (50%) admitted that one of the threats of digitalisation concerning banking industry is related to slow and stiff adaptation to change. Three out of four SE’s (75%) concidered their business model and core services more efficient and agile compared to traditional banks. SA1 continued that both traditional and new players will most likely face discontinuities in their business, which lead to problematic situations also on bigger scale in finance markets.

The emphasize of SA1's expectations was also on the speed of changing process – geographical borders as well as borders in business industries are blending which leads to increased competition. On the other hand, these aspects create possibilities for companies' to develop their own business models (SA1). To adapt oneself into global changes, SA1 underlined the importance of staying up-to-date about business environment and making sure own business model is both clear but also cabable of changing when needed. This creates essential agility in financial markets, where every business is part of bigger business environment and where negative market changes affect to players even though their personal operations are performing well.

When asked about the upcoming changes in digitalisation in three year future forecast, SA1 advocated similar future foresights as both the Layer 1 and the Layer 2. New players will seek their position in the financial industry and cooperations between newcomers and traditional operatives are getting more common. Automatisation and robotics were both seen as future norms and they will spread to even wider in the industry than it is now – *"for large extent it is still balancing in between 'old' and 'new' world."*

5 Conclusions

The objective of the study was to dig into the digital technology development financial industry currently faces and gain subjective views and attitudes towards digitalisation from three different stakeholder groups. The purpose of the study was also to form possible future foresights created by professionals working in the industry. The chapter five consists conclusion and answers to the three research questions presented in the chapter one. Ideas for future research of the topic are presented in chapter 5.2.

The future of fintech development is considered to be more uncertain than it ever has before. New innovations are formed up with fast pace and the reactions of financial institutions might not always be profitable (Nicoletti 2017, 16.). The direction of digialisation is hard to predict even by experts of the field, which makes it difficult to create clear scenarios about what will most likely to happen – experts agree that acceleration of technology development will continue to grow in the future. New funding instruments are most likely published and already existing funding services are getting more common, when financial product innovation is changing the tradition how financial services work. Analyzing the customer behavior is getting faster and more detailed, and financial service providers can use this data to create more customer orientated approach and make customer experience more outstanding (ibid.).

As mentioned in chapter 2.1, the Millenials are a generation that are key users during digital development. They are used to 24/7 digital age and are considered to be more encouraged to compare service providers – younger generation is considered to be more trusful towards new players. Banks need to somewhat reform their digital services so they will not be losing their digital era customers to more digitalized challengers. On the other hand, the existence of a start-up is riskier than traditional bank, so players of all sizes need to concentrate on their risk management and be up to date about the global changes in financial markets as well (SA1, Layer 3).

5.1 Answering the research questions

The first research question was what are the major effects of digitalisation to Finnish financial services. Results achieved in the study offer views that support previous theories but also new ideas and thoughts about the current and upcoming form of digitalisation in financial services. However, it is reasonabe to point out the focus groups consisted only four participants per layer, exluding the Layer 3. This makes it adequate to reflect the findings on a complete objective scale, thus they aim to give directional opinions and future forecats.

All participants were familiar with the topic without further explanation of the term "financial technology" or "digitalisation in financial services". The primary effects that were brought up by participants were linked to changes in payment transactions and the fragmentation in service providers as well as blurred lines in traditional business fields. All four participants in the Layer 1 pointed out the that financial authority has a key role when it comes to effects to financial services – regulation setting and monitoring can either support small businesses or slow down the development in the field. One participant in the Layer 2 commented that regulations are not always fair for banks, as start-ups are seen as getting more benefits and overlooks in regulationing system – opinions like these put even more responsibility to financial authority, as it should be impartial supervisor. Automatisation and decrese in physical customer service are seen as the current trends, both of which are only strenghtening their relevance in the future. Even though customer service does not principally happen in face-to-face situations, the objective is to provide even more customer orientated services through digital channels. In addition, services will get even more realtime and easily attainable than before.

Second research question was about indentifying the challengers of traditional banks and how new players will compete alongside them in financial markets. The Layer 1 was formed to consist these challengers, and criteria for suitable participant was any kind of selection of financial services, either to individual consumers or to companies, independently or with co-operation among banks. Focus group in the Layer 1 consisted four representatives of four different small enterprises, who are able to offer similar services to their customers as banks are. Due to digitalisation

itself, these kind of players are able to exist and be profitable as well as be an alternative option for banking industry. Due to new Payment Service Directive PSD2, access to banks' customer information is available for third party as well, which supports competitors similar to interview participants. The findings from the Layer 1 support the statement by Malinen (2016): start-ups will more comprehensively take role in consumers' daily money transactions. The participants agreed about the direction the technology development is heading to – alternative options for traditional banks, where consumers use more frequently small financial institutions and different forms of crowd funding instead of banks' services.

Third research question concerned global digitalisation and how Finnish players operating in field of finance are prepared to changes it may bring along. The Layer 1 would add more co-operation as well as form regulations that support domestic innovations and national technology development. The Layer 2 suggested more proactive behavior and making sure to link the whole organization to the change and what needs to be done in order to be profitable. What was also brought up was the possibilty of cooperation across the industry borders – as mentioned before, this is already happening. In addition, The Layer 3 underlined the importance of risk management and monitoring own processes constantly. The Layer 2 and The Layer 3 had similar opinions about the essentialness of being aware of own know-how and to be able to change it even with fast pace in order to adapt oneself to global digital changes.

The aim to execute the study with valid and reliable outcome was done successfully. Due the reason that participants were working in different levels, it was possible to gain opinions from bottom to top level workers. This gave the study more trustworthiness and quality, as opinions and future forecasts were done by people working in different positions. Interviewing only certain level workers could have had negative infleunce on the validity of the research as a whole, as validity measures the truthfulness of the findings. The reliability of the research was fulfilled as the coherence of the findings was rather positive. As the study was qualitative including open-ended questions, re-conducting the study would provide different answers compared to former findings, this being the nature of qualitative research and should not affect to reliability of the study. The findings of the study gave guide to

understand expectations of each group about the theme examined, which supports Easterby-Smith et. all (2008) study about reliability of a research.

As a conclusion, it can be interpreted from all the answers that financial technology is currently changing the industry and will continue forming the field of business in the future. All the participants were seeing the phenomena as an advantageous for their own business, that is, if the preparations and commitment inside the organization is on the right track and business operations are not being slowed down because of unfavourable restrictions or regulations coming from authority levels. On the other hand, authority level has its own challenges to minimize the possibility of misuse of open financial markets.

5.2 Ideas for future research

As pointed out earlier, the fintech has gained foothold as a theme of examination for the past few years along financial experts and researchers. During the thesis was written, new articles and papers were published about the fintech as a topic. The references used in the thesis are mainly gathered from past few years as older secondary data does not exist or is very limited. Thus, it is safe to save the phenomena is rather young. As the digitalisation is reforming constantly and new players are penetrating the markets – while some of them stop existing – the theme could be endlessly studied from different perspectives. The thesis concentrated on small amount of Finnish financial industry operators, but the theme is widely studied abroad as well. Keeping up to date with digital development needs constant future research and monitoring trends in digitalisation.

The research of this thesis could be re-done from multiple different perspectives – concentrating on only the Layer 1 or the Layer 2 participants and instead of having four participants from each layer, it could be executed with a wider amount of participants from only one layer. The more participants included in the research, the more objective could one interpret the answers concerning certain industry. Future research could also apply to case study of certain start-up or a bank and their

attitudes and expectations about fintech. Similar study could be executed from the point of Finnish Financial Authority as well.

Another theme for study could be more customer-orientated consumer survey, where instead of examining an organization-level, the main focus would be in financial service users. This kind of research could map out the interests and opinions about participants grouped by demographic variables. Study like this could offer companies' valuable information about the needs and expectations from consumers about what they look in good financial services.

The thesis covered digitalisation in global scale briefly – for future research idea, the global changes in fintech could be elaborated. For instance, concentrating on financial markets and their structure as well as effects of market disturbance could be interest topics for further research on more global level.

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Appendices

Kysymykset	SE1	SE2	SE3	SE4
1. Elämme finanssipalveluiden digitalisaation murrosta. Mitä mahdollisuuksia finanssipalveluiden digitalisoituminen on antanut teidän yritystoiminnallenne?	Olemme perustaneet liiketoimintamallin finanssipalveluiden digitaalisaatioon, joten murros on antanut meille mahdollisuuden toteuttaa suunniteltu liiketoimintamalli.	Digitalisaation murros on tarjonnut meille markkinaraon, jossa voimme vastata nopeiden ja helppojen palveluiden kysyntään.	Olemme digitaalinen palvelu itse.	Olemme pystyneet perustamaan yrityksemme ja kehittämään toimintaamme oikeaan suuntaan. Ilman digitalisaation tuomia mahdollisuuksia k toimintamalli tulisi suunnitella uudestaan eritavalla.
2. Millä tavalla olette valmistautuneet tuleviin muutoksiin, mitä finanssiteknologia ja palveluiden digitalisaatio mahdollisesti tuovat tullessaan?	Olemme kehittäneet digitaalista rahoitusalustaamme ja yrityksemme historian suurin teknologiaprojekti on valmis keväällä 2018. Uusi teknologia vastaa paremmin alati muuttuviin mahdollisuuksiin finanssimaailmassa.	Liiketoimintamallimme on muokattu siten, että se vastaa paremmin asiakkaiden muuttuneisiin tarpeisiin esimerkiksi helpommasta saavutettavuudesta.	Olemme uusi yritys ja nimenomaan lähteneet digitaalisesta.	Pidämme itseämme ensimmäisen erän voittajina. Ala on jatkuvan muutoksen kohteena, joten meidän tulee ylläpitää reaktionopeutta ja kehittää palveluitamme trendien mukaan.
3. Mitkä koette olevan vahvuuksianne digitalisaation muutoksessa verrattuna esimerkiksi perinteisiin isompiin toimijoihin, kuten pankkeihin?	Olemme ketterämpi toimija, joka pystyy tekemään tarvittavia muutoksia huomattavasti lyhyemmässä ajassa ja tarjoamaan yritysasiakkaille nopeampaa ja tehokkaampaa palvelua kuin pankissa.	Olemme nopeampi ja byrokratia on meillä hyvin vähäistä. Esimerkkinä nämä kaksi antavat meille mahdollisuuden toimia paremmin asiakkaan vinkkelistä.	Olemme lähtökohtaisesti digitaalinen.	Imagomme on moderni ja uniikki ja pystymme tarjoamaan personalisoituja palveluita asiakkaillemme. Olemme myös nopeita reagoimaan kansainvälisellä tasolla tapahtuviin muutoksiin.
4. Mitä uhkakuvia tai ongelmia digitalisaation murroksesta voi koitua teidän yritystoiminnalle/alalla operoiville start-up-yrityksille?	Finanssivalvonnan regulaatiot voivat hidastaa toimialan kehitystä.	Ala kiinnostaa monia toimijoita niin Suomessa kuin muuallakin maailmassa. Kilpailu tulee kiristymään lähivuosina entisestään.	Isot globaalit alustat voivat saavuttaa niin ison markkinaosuuden ettei muiden ole kannattavaa toimia.	Kansainvälinen valvontavoi hankaloittaa piwnten yritysten toimintaa kiristämällä säädöksiä.
5. Mitkä ovat mielestänne suurimmat finanssipalveluiden digitalisaatiosta koituvat vaikutukset Suomessa finanssialalla toimiville organisaatioille, niin pienemmille yrityksille kuin esimerkiksi pankeillekin?	Pankit tulevat digitalisoimaan suurelta osin koko prosessinsa ja ulkoistamaan osan toiminnoistaan pienemmille toimijoille, jolloin nykyisten työtehtävien määrä laskee ja uusia työtehtäviä syntyy. Tämä muutos tulee olemaan merkittävä jo lähitulevaisuudessa. Tämän lisäksi uusia liiketoimintamalleja syntyy.	Kasvokkain tapahtuva asiakaspalvelu tulee vähenemään digitalisaation myötä. Kysyntää on realiaikaisille palveluille, jotka on käytättävissä 24/7.	Palvelut digitalisoituvat niin että asiakaspalvelun määrä vähenee, maksujärjestelmiltä vaaditaan nopeutta ja helppoutta, globaalit alustat tulevat isosti	Palveluiden digitalisoiminen on must, mikäli tässä kyydissä haluaa pysyä mukana. Työnkuvia automatisoidaan parhaillaan kovaa vauhtia. Pankkien tulee kehittää toimintamallejaan sopimaan paremmin tähän päivään.
6. Säilyttääkseen/saavuttaakseen kilpailukykynsä, kuinka näiden suomalaisten finanssialalla operoivien organisaatioiden tulisi adaptoitua muutoksiin, joita digitalisaatio globaalilla tasolla tuo tullessaan?	Yhteistyötä tulisi lisätä, jotta tuleviin muutoksiin olisi helpompi vastata.	Säädöksiä jotka tukisivat kansaivälistä yhteistyötä maiden välillä.	Ei ainakaan vastustaa muutosta; toisaalta esim. EU-lainsäädäntö torppaa joitain potentiaalisesti EU:n ulkopuolelta tulevia innovaatioita pois markkinoilta, mikä voi olla esim. yksityisyyden suojan, verotulojen yms kannalta hyväkin asia	Yhteistyötä EU-maiden välillä tulee lisätä.
7. Kuvitellaan, että on vuosi 2020. Millä tasolla uskotte finanssialan digitalisaation tuolloin olevan ja mitkä ovat suurimmat muutokset (verrattuna nykyiseen), joita muutaman vuoden aikana on tapahtunut?	Pankkeja, kuten ne nyt ymmärretään, ei enää ole (ainakaan määrällisesti) niin paljoa. Kontoreita suljetaan ja prosessit digitalisoidaan. Alusta-ajattelu on vallalla, jolloin myös pankit käyttävät erilaisia "platformeja" tehostaakseen toimintoja. Yrityspuolen pankkirahoitus kulkee pienlainapuolella (x < 500teur) platformien kautta. Pankkien jättämään "tyhjiöön" on syntynyt pienempiä finanssialan yhtiöitä, jotka pystyvät palvelemaan asiakkaita kustannustehokkaalla tavalla.	Kuva pankkien valta-asemasta ainoana rahoituspalveluiden tarjoajana musertuu, kun pienet yritykset pystyvät tarjoamaan täsmälleen samoja palveluita asiakasystävällisemmin. Palvelut ovat siirtyneet internettiin ja puhelimiin.	Puhelimella maksaminen lisääntyy, joukkorahoitus lisääntyy, osakesijoittaminen lisääntyy, vertaislainamarkkinat kasvavat, lainsäädäntö voi joko lisätä tai vähentää uudistumista	Ihmiset eivät enää käänny suvereenisti pankkien puoleen kun ovat rahoituksen tarpeessa. Erilaiset joukkorahoituksen muodot yleistyvät ja maksaminen siirtyy puhelimeen.

Appendix 1. Survey and answers from the Layer 1.

Kysymykset	BE1	BE2	BE3	BE4
1. Elämme finanssipalveluiden digitalisaation murrosta. Mitä mahdollisuuksia finanssipalveluiden digitalisoituminen on antanut teidän pankkitoiminnallenne?	Asiakkaat saavat paljon joustavampaa, sujuvampaa, nopeampaa palvelua kuin ennen. Asiakkaat säästävät digitalisoitumisen kautta myös aikaa.	- asiakaskokemuksen nousua: nopeutta, helppoutta, hyvää saatavuutta - kustannustehokkuutta: automatisoituja prosessin osia ja robotisaation hyötyjä - uusia työkaluja analytiikan tason nousua - palvelukanavien kehittyminen - viestinnän monipuolistuminen, nopeutuminen ja oikea-aikaisuus - uusien palvelujen ja toimintamallien mahdollistuminen - liiketoimintamallien uudistaminen"	Asiakaspalvelua on pystytty kehittämään tehokkaammaksi ja sen saatavuus on entistä reaaliaikaisempaa. Automatisaatio on mahdollistanut turhien välivaiheiden eliminoimisen, mikä lisää tehokkuutta sekä asiakkaalle että meille.	Ajankäytön tehostamisen ja resurssien suuntaamisen asiakaskokemuksen kannalta merkityksellisiin asioihin ja asiakkaan sitouttamisen. Käytännön esimerkki. Minulla on tiedossa asiakkaan nimi, puhelinnumero ja villi arvio mahdollisesta varallisuudesta. Soitan potentiaaliselle tulevalle asiakkaalle ja keskustelu johtaa kasvokkain tapahtuvaan ensimmäiseen tapaamiseen. Lähetän asiakkaalle sähköpostilla tai tekstiviestillä vahvistuksen tapaamisen sijainnista, ajasta ja muista sovituista asioista, mutta lisäksi tiiviin yhteenvedon puhelun sisällöstä ja ohjeet kuinka valmistautua tapaamiseen. Samassa ja yhdessä viestissä on myös linkki lyhyeen profilointikyselyyn, johon vastaamalla asiakas valmistautuu tulevaan tapaamiseen ja minä saan arvokasta tietoa, jonka perusteella voin valmistella jo ensimmäiseen tapaamiseen näkemyksellisen yhteistyöehdotuksen. Profilointikysely (jota nimeä en asiakkaan kanssa käytä) lisää asiakkaan sitoutuneisuutta tapaamiseen ja minuun. Samalla asiakkaalle piirtyy tarkempi kuva tulevista käsiteltävistä asioista. Kokemus on osoittanut, että profilointikyselyyn vastanneet ovat huomattavasti suuremmalla osuudella aloittaneet yhteistyön verrattuna heihin, jotka eivät reagoi kyselyyn. Parhaassa tapauksessa asiakas on profilointikyselyn lisäksi tehnyt liudan muita lakisääteisiä asioita (sijoittajakuvakartoitus, luottohakemus, asiakkaan tuntemistietolomake sijoitusneuvottelua), jolloin tapaamisessa päästään suoraan asiakkaan kuumaan asiaan.
2. Millä tavalla olette valmistautuneet tuleviin muutoksiin, mitä finanssiteknologia ja palveluiden digitalisaatio mahdollisesti tuovat tullessaan?	Sovelluksia, toimitatapoja on digitalisoitu. Palveluntuotantoa laajennetaan eri toimialalle. Olemme asiakkaille enemmän kuin pankki.	- uudet tehtävänkuvat ja roolit teemaan liittyen, vastuunjaot uudistumiselle ja muutosten läpiviennille päivitetty - osaamisen päivittämisen tarpeet todettu ja uudet oppimispolut rakenteilla - muutosjohtamisen osaamista on vahvistettu - uusien liiketoimintojen kautta on alettu varmistaa tulevaa ansaintaa - tehokkuudesta huolehtimalla tasapainotetaan disruption vaikutuksia - tehokkuus on jatkuvana näkökulmana tekemisen johtamisessa"	Toimintamalleja viety eteenpäin niin, että digitalisaatiota voidaan hyödyntää ja jalkauttaa entistä kokonaisvaltaisemmin työnkuviimme. Henkilöstö on pidetty ajan tasalla muutosten vaikutuksista toimintatapoihimme.	Pääasiassa koulutuksin. Esimiehen rooli ottaa asiat valmennuskeskusteluissa esille suuri, mutta vielä vähintään yhtä suuri itsellä. Toimintatapojen muuttaminen digitaalisempaan suuntaan tulee tehdä. Sitä voi kuitenkin vauhdittaa muuttamalla palkan lisäksi maksettavien kannusteiden perusteita siten, että yksi mittareista olisi esimerkiksi sähköisesti allekirjoitettujen varainhoitosopimuksien määrä suhteessa kaikkiin tehtyihin varainhoitosopimuksiin. Näin osaksi on, mutta sitä voisi tehdä vielä enemmän. MifiD2 on asettanut tiettyjä vaateita, joihin on etupainotteisesti jo vastattukin. Tietyn sijoitusvarallisuuskokoluokan varainhoitotarpeet automatisoidaan ja siten aikaa jää enemmän näkemykselliselle ratkaisumyynnille sekä monialaisesti asiakkaan kokonaisuuden hoitamiseen.
3. Mitkä koette olevan vahvuuksianne digitalisaation muutoksessa verrattuna esimerkiksi pankkeja haastaviin ja markkinoille pyrkiviin uusiin tulokkaisiin? (Esimerkiksi pienemmät rahoituspalveluita tarjoavat start-upit.)	Keskittämisedut.	- mahdollisuus tarjota kokonaisvaltaisia laajoja ratkaisuja - paikallistuntemus ja paikalliskokemus - vahva brändi, joka on tutkitusti luotettava	Asiantuntijuus ja luotettavuus ehdottomasti.	Hirmuinen määrä dataa ja luottamuksen päälle rakennetut pitkät asiakassuhteet. Maine painaa myös vaakakupissa. Meiltä löytyy myös hartiavoimia vastata yhä paisuviin sääntelyvaateisiin, jotka kuormittavat compliance-osastoa.

4. Mitä uhkakuvia tai ongelmia digitalisaation murroksesta voi koitua teidän pankkitoiminnallenne?	Osa asiakkaista jää junasta.	- hintakilpailu romahduttaa ansaintalogiikkaa - organisaation ketteryys ei riitä uusien toimijoiden vauhdissa mukana pysymiseen: nopeuden vaade - epäreilut regulaation määräykset: uusille toimijoille ei samoja vaatimuksia kuin nykyisille -> meillä kustannuksia, joita ei kaikilla ja viranomaismääräykset edellyttävät esim. raskaampaa prosessia	Osa asiakkaistamme voi siirtyä pienten toimijoiden asiakkaiksi, sillä yhä enemmän palveluilta vaaditaan nimenomaan nopeutta ja meillä on kiinni kurottavaa siltä osin.	Henkilökohtaisella tasolla. Jos jämähtäisi paikalleen oman osaamisen kehittämisessä, eli homma ei itseä kiinnostaisi enää sen vertaa että viitsisi uudistua oma-aloitteisesti, tiedossa olisi varma uraitsemurha. Jotta varainhoidossa riittää työtä jatkossakin, tulee olla valmis ja etunenässä erikoistumassa muuttuviin tarpeisiin vastaten. Uhkana on kilpailijakentän laajeneminen perinteisistä alan toimijoista uusiin kuten Google, Apple ja muut vesselit. Uhkakuvana näen myös alan maineen rapautumisen siinä mielessä, että jos alalle ryntää kehnoin toimintatavoin varustettuja yrityksiä ja sitä kautta tulee markkinahäiriöitä tai muuta epämukavaa. Koen että uhkakuvat pistävät nykyiset isot toimijat kuitenkin ajattelemaan toimintaansa aikaisempaa pidemmälle entistä nopeammin. Kilpailu on hyvästä silloin, kun sitä johtaa itse.
5. Mitkä ovat mielestänne suurimmat finanssipalveluiden digitalisaatiosta koituvat vaikutukset Suomessa finanssialalla toimiville organisaatioille, niin pankeille kuin esimerkiksi pienille rahoitusalan yrityksillekin?	Kustannussäästöt.	- rajat ja reviirit häviävät kansainvälisesti - ansaintalogiikat muuttuvat - asiakkaiden nopealiikkeisyys entistä merkityksellisempää: asiakkaiden vallan kasvu, kyettävä ennakoimaan trendejä - jakamistalouden nousu muuttaa omistamisen arvostusta ja vaikuttaa moneen liiketoiminta-alueeseen	Toimialakohtaiset rajat sekoittuvat ja muuttavat muotoaan. Asiakkailla on enemmän vaihtoehtoja ja siten valtaa vertailla ja tehdä päätöksiä.	Läpinäkyvyys kasvaa ja aikaresurssia saadaan jaettua yhä tehokkaammin useamman asiakkaan kesken. Prosessien läpivientiajat nopeutuvat ja toiminta sitä kautta tehostuu. Riippuvuus teknologiasta ja etenkin sen toimivuudesta kasvaa, joten varasuunnitelmat häiriötilanteisiin ja heti saatavana olevat resurssit niiden selvittämiseen tulee olla. Uskon myös että kyberuhkiin satsataan yhä enemmän ja se aiheuttaa myös kustannuksia. Digitalisaatio ei ole missään nimessä halpa harjoitus ja uskonkin että pienet toimijat tulevat häviämään kartalta mikäli ne eivät investoi reilusti järjestelmäkehitykseen.
6. Säilyttääkseen/saavuttaakseen kilpailukykynsä, kuinka näiden suomalaisten finanssialalla operoivien organisaatioiden tulisi adaptoitua muutoksiin, joita digitalisaatio globaalilla tasolla tuo tullessaan?	Pitää olla koko ajan hermolla, etunojassa. Tekemiset, palvelut, kanavat uudistettava etunojassa	- ottaa asia päivittäisen johtamisen asialistoille, nyt ei ole vielä riittävän painokkaasti mukana. Osallistaa koko oma organisaatio ymmärtämään muutoksen suuntaa ja välttämättömyyttä: joustava asenne ja ketteryys lopputuloksena - pitää oivaltaa asiakkaan valta ja valinnanvapauden merkitys. Uskaltaa olla myös hyökkääjänä, ei ole tarvetta olla vain nöyrä altavastaaja: kehittämispanokset ja kehittämiseen tarvittava osaaminen saatava organisaatioon	On ensisijaisen tärkeää, että koko henkilöstö saadaan ymmärtämään muutoksen merkitys ja sitoutumaan yhteen hiileen puhaltamiseen. Sanalla "muutos" tuppaa usein olemaan negatiivinen kaiku, mistä pitäisi päästä eroon.	Investoimalla järjestelmiin ja asiantuntijoiden, henkilöstön, osaamiseen. Lisäksi yhteistyötä tulee tehdä yli toimialarajojen. Myös konsolidaatiota ja pankkiryhmien sisäisiä fuusioita tullaan näkemään. Paikallisuuteen perustuvilla erikoispalveluilla voisi tuoda asiakkaille lisäarvoa.
7. Kuvitellaan, että on vuosi 2020. Millä tasolla uskotte finanssialan digitalisaation tuolloin olevan ja mitkä ovat suurimmat muutokset (verrattuna nykyiseen), joita muutaman vuoden aikana on tapahtunut?	Asiakas voi hoitaa esim. asuntolainansa täysin sähköisesti, vakuudet mukaanlukien. Asuntolainan hoitaminen sähköisesti on tuolloin jo ihan nykypäivää.	- sähköinen asiointi on pääkanava vaativissakin neuvotteluissa ja asiakkuuden aloittamisessa - fyysisiä toimipisteitä on vain isoimmilla paikkakunnilla - työssä olevan henkilökunnan tehtävänkuvat ovat vaativaa talousasioiden konsultointia - henkilökunnan määrä on kolmannes nykyisestä: automaatio ja robotisaatio tuottavat asiakkaille helppoja asiointi- ja ostopolkuja	Fyysisen läsnäolon tarve vähenee tai jopa katoaa kokonaan. Tässä myös korostaisin maksupalveluiden nopeutta ja reaaliaikaisuutta, mikä tulee olemaan kehityssuuntana.	Yhä useampi tapaaminen hoidetaan kasvokkain käytävän keskustelu sijaan etänä videoyhteyden välityksellä. Puhelimen sormenjälki-/kasvontunnistuksen myötä avainlukuja ei tarvita siihen että asioita allekirjoitetaan sähköisesti reaaliajassa videotapaamisen aikana. Asiantuntijoilta vaaditaan yhä syvemmälle luotaavia ratkaisuehdotuksia ja näkemyksellistä otetta, koska asiakkaista saadaan dataa aiempaa enemmän ja asiakkaat odottavat että sitä hyödynnetään. Puhelimella tai älykellolla maksaminen on suositumpaa kuin korttimaksaminen. Käyttäytymistieteen ilmiöitä ja teknologisia ratkaisuja hyödynnetään jotta voidaan luoda uusia ennustemalleja asiakkaan todennäköisistä seuraavista liikkeistä ja voidaan siten mahdollisesti estää farssien syntyminen sijoitusmarkkinoiden kuohuissa.

Appendix 2. Survey and answers from the Layer 2.

Kysymykset	SA1
1. Elämme finanssipalveluiden digitalisaation murrosta. Mikä on finanssivalvonnan rooli tässä digitalisaation kehityksessä?	Luoda edellytyksiä digitaalisten toimintojen/palvelujen kehitykselle ja varmistaa, etteivät ne vaarana finanssiasiakkaan tai sijoittajan suojaa eivätkä finanssimarkkinoiden asianmukaista toimintaa. Muistuttaa, että teknologiset ratkaisut ovat välineitä ja itse substanssi on pidettävä kunnossa koko ajan.
2. Millä tavalla olette valmistautuneet tuleviin muutoksiin, mitä finanssiteknologia ja palveluiden digitalisaatio mahdollisesti tuovat tullessaan?	Ei ole yhtä vakiokeinoa, vaan on seurattava toimintaympäristön kehitystä, kerättävä informaatiota, analysoitava sitä sekä arvioitava riskejä. Epätoivottaviin kehityssuuntiin on puututtava nopeasti. Tätä varten on kehitetty erilaisia tiedonkeruu ja -jakokanavia. Myös omaan osaamiseen panostetaan koulutuksen ja rekrytointien kautta.
3. Mitä uhkakuvia tai ongelmia digitalisaation murroksesta voi koitua niin perinteisille toimijoille, niin pankeille kuin myös markkinoille pyrkiville start-up-yrityksille?	Murroskohta on aina vaikeasti hahmotettava tilanne. Perinteiset toimijat eivät välttämättä näe tapahtuvaa muutosta tai reagoi siihen tarpeeksi nopeasti. Uusilla toimijoilla saattaa olla liian suuret odotukset oman liiketoimintamallinsa toimivuudesta. Liiketoimintoihin tulee sekä vanhoilla että uusilla toimijoilla epäjatkuvuuskohtia, jotka aiheuttava erilaisia ongelmatilanteita myös markkinoilla.
4. Mitkä ovat mielestänne suurimmat finanssipalveluiden digitalisaatiosta koituvat vaikutukset Suomessa finanssialalla toimiville organisaatioille, niin pienemmille yrityksille kuin esimerkiksi pankeillekin?	Maantieteellisten ja toimialakohtaisten rajojen yli tuleva kilpailu kasvaa ja kovenee. Muutosvauhti kasvaa. Toisaalta nämä luo myös mahdollisuuksia kehittää omaa liiketoimintaa.
5. Säilyttääkseen/saavuttaakseen kilpailukykynsä, kuinka näiden suomalaisten finanssialalla operoivien organisaatioiden tulisi adaptoitua muutoksiin, joita digitalisaatio globaalilla tasolla tuo tullessaan?	Toimintaympäristön seuranta pitää olla päällä koko ajan. Oma osaaminen oltava kunnossa. Liiketoimintakonseptin pitää olla itselle selkeä ja sitä on tarpeen vaatiessa oltava valmis muokkaamaan merkittävästikin. Samalla pidettävä oma riskienhallinta ja riskien kantokyky kunnossa.
6. Kuvitellaan, että on vuosi 2020. Millä tasolla uskotte finanssialan digitalisaation tuolloin olevan ja mitkä ovat suurimmat muutokset (verrattuna nykyiseen), joita muutaman vuoden aikana on tapahtunut?	Alalle on tullut uusia toimijoita ja perinteiset toimijat hakeneet erilaisia yhteistyökuvioita. Keinoälyn ja ohjelmistorobotiikan käyttö on laajentunut. Pitkälti vielä kuitenkin tasapainoillaan "vanhan" ja "uuden" maailman välissä.

Appendix 3. Survey and answers from the Layer 3.