

Disruption of the Financial Services Industry: A Case Study of British Fintech Startup Revolut

Copenhagen Business School

MSc Economics and Business Administration

Applied Economics and Finance

Master Thesis

Authors: Tadas Vilkinis – 31634
Tomas Vasciula – 91323
Supervisor: Jens Marcus-Møller

Date of Submission: 17th of September 2018
Number of Characters: 270.250
Number of Pages: 119

Abstract

This thesis investigates the dynamics of financial services industry in the 21st century to answer the research question of why and how the industry disruption began and to suggest a response to disruption for incumbent financial institutions. To achieve this, the thesis takes a case-based approach, applying a combined theoretical framework to the case of British fintech startup company Revolut. The thesis challenges conventional strategy theories, such as Michael Porter's Five Forces and SWOT, for being unable to explain emerging business phenomena, such as industry disruption, in the light of product and service digitalization. Instead, it utilizes more recent theories such as Clayton Christensen's Theory of Disruptive Innovation, Lean Startup Method, and Rita McGrath's Theory of Transient Advantage.

The thesis finds that incumbent financial institutions historically focused on sustaining type of innovations that target the most profitable customers, overlooking the less demanding customer segments. By engaging in disruptive innovation, Revolut among other fintech startups targeted those overlooked segments, offering a more convenient service at no charge, eventually causing the industry disruption. The thesis finds that Revolut achieved this by advocating ideas associated to the lean startup method and engaging in continuous innovation.

Given the findings, the thesis suggests a response to disruption for incumbent financial institutions. The key recommendation is to create a corporate culture where innovation is encouraged. The thesis argues that with the right corporate culture and values in place, incumbents will have three different options to successfully engage in disruptive innovation – via (i) a partnership with fintechs or large techs, (ii) an acquisition of fintech startups, or (iii) in-house innovation. The thesis also finds that large tech companies, such as Facebook and Google, may re-disrupt the financial services industry going forward due to general market shift towards “open-banking” caused by initiatives such as the European Union's Second Payment Service Directive (PSD2).

Table of Contents

1. Introduction.....	6
1.1. Motivation	6
1.2. Research Question	7
1.3. Key Concepts	7
1.4. Structure.....	8
1.5. Delimitations	10
2. Methodology and Research Design.....	12
2.1. Thesis Method	12
2.2. Research Design	13
3. Literature Review	14
3.1. Porter’s Five Forces	14
3.2. SWOT and PESTLE.....	16
3.3. Critique of Conventional Theoretical Approaches	18
4. Theoretical Framework	20
4.1. Clayton Christensen’s Theory of Disruptive Innovation.....	20
4.2. The Lean Startup Method	25
4.3. Rita McGrath’s Theory of Transient Advantage	29
4.4. Pricing and Concept of Free	34
4.5. Network Effects	38
4.6. Switching Costs.....	42
4.7. Combined Theoretical Framework.....	45
5. Overview of Types of Financial Services.....	46
5.1. Payments	46
5.2. Deposits and Lending	49
5.3. Investment Management.....	52
5.4. Insurance	54
5.5. Capital Raising	57
6. Past to Present.....	60
6.1. Investments in Fintech	60
6.2. Overview of Main Digital Challenger Banks	63
6.3. Finance 2.0 – the Case of British Fintech Startup Revolut	70
6.3.1. Revolut and Disruption: Why and How?	74
6.3.1.1. The Theory of Disruptive Innovation	74

6.3.1.2.	The Lean Startup Method.....	79
6.3.1.3.	The Theory of Transient Advantage	82
6.3.1.4.	Pricing and Concept of Free.....	84
6.3.1.5.	Network Effects and Switching Costs	88
6.4.	Incumbent Financial Institutions' Response to Disruption	90
6.5.	Second Payment Service Directive (PSD2)	93
6.6.	Sub-Conclusion of Past to Present Section	94
7.	Near future	96
7.1.	Revolut	96
7.1.1.	European Banking License	96
7.1.1.1.	Benefits.....	96
7.1.1.2.	Drawbacks	97
7.1.2.	Features in the Pipeline.....	97
7.1.2.1.	Cryptocurrencies and Rationale for not Focusing on their Future Effect.....	97
7.1.3.	PSD2.....	98
7.1.3.1.	Opportunities.....	98
7.1.3.2.	Challenges.....	98
7.1.4.	Markets, Customers, and Staff	99
7.2.	Large Tech Companies.....	99
7.2.1.	Scenario 1 – Focus on the Distribution Side of Banking Activities	100
7.2.2.	Scenario 2 – Partnership with Incumbent Financial Institutions.....	101
7.2.3.	Scenario 3 – Provision of Complete Banking Services	101
7.3.	Sub-Conclusion of Near Future Section.....	102
8.	Suggested Response to Disruption for Incumbent Financial Institutions	103
8.1.	Key Recommendation: Creating a Corporate Culture where Innovation is Encouraged.....	103
8.2.	Available Options	105
8.2.1.	Option 1 – Partnerships.....	105
8.2.1.1.	Partnership with Fintech Startups – Benefits.....	105
8.2.1.2.	Partnership with Large Tech Companies – Benefits	106
8.2.1.3.	Partnership with Fintechs and Large Techs – Drawback	107
8.2.2.	Option 2 – Acquisition of Fintech Startups.....	107
8.2.2.1.	Acquisition of Fintech Startups – Benefits.....	108
8.2.2.2.	Acquisition of Fintech Startups – Considerations and Limitation	108
8.2.3.	Option 3 – In-house Innovation.....	108

8.2.3.1. In-house Innovation – Benefits and Considerations.....	109
8.3. Sub-Conclusion of Suggested Response to Disruption for Incumbent Financial Institutions Section	109
9. Conclusion	111
10. Reflections	114
10.1. Academic and Business Implications.....	114
10.2. Methodology – the Method Not Used	114
10.3. Suggestions for Future Research.....	115
11. Bibliography.....	116
12. Appendices	129
12.1. Appendix 1. Customer Rating of Starling Bank in App Store.....	129
12.2. Appendix 2. Customer Rating of Starling Bank in Google Play.....	129
12.3. Appendix 3. Customer Rating of Monzo Bank in App Store.....	130
12.4. Appendix 4. Customer Rating of Monzo Bank in Google Play.....	130
12.5. Appendix 5. Customer Rating of Atom Bank in App Store	131
12.6. Appendix 6. Customer Rating of Atom Bank in Google Play	131
12.7. Appendix 7. Customer Rating of N26 in App Store	132
12.8. Appendix 8. Customer Rating of N26 in Google Play	132
12.9. Appendix 9. Customer Rating of Revolut in App Store	133
12.10. Appendix 10. Customer Rating of Revolut in Google Play	133
12.11. Appendix 11. Spot Rate of DKKUSD Offered by Nordea as at 30 April 2018 (Nordea, 2018)	134
12.12. Appendix 12. Interbank Spot Rate of DKKUSD as at 30 April 2018 (Bloomberg, 2018).....	134
12.13. Appendix 13. Timeline of Revolut Related Events	134

Table of Figures

Figure 1 – Thesis Structure	8
Figure 2 - Porter's Five Forces	14
Figure 3 - Attributes of Attractive and Unattractive Industry	15
Figure 4 - SWOT Matrix	17
Figure 5 - The Disruptive Innovation Model	21
Figure 6 - Build-Learn-Measure Loop of the Lean Startup Method	26
Figure 7 - Business Model Canvas	27
Figure 8 - The Wave of Transient Advantage	30
Figure 9 - The Shark Fin	32
Figure 10 - Direct Cross Subsidies	35
Figure 11 - Three-Party Market	35
Figure 12 – Freemium	36
Figure 13 - Nonmonetary Markets	36
Figure 14 - Law of Price and Demand	37
Figure 15 - Vicious Cycle vs. Virtuous Cycle	39
Figure 16 - Performance vs. Compatibility	40
Figure 17 - Combined Theoretical Framework.....	45
Figure 18 - Insurance Value Chain	54
Figure 19 - Global Fintech Financing Activity	60

Table of Graphs

Graph 1 - Change in Number of Mass Affluent Households in the US over time	52
Graph 2 - Conversion of DKK to USD using Revolut vs. Nordea	71
Graph 3 - Growth in Revolut Users	78

Table of Tables

Table 1 - Traditional Innovation Method compared to Lean Startup Method	28
Table 2 - Overview of Cross Subsidy Types	37
Table 3 - Traditional Payment Institutions compared to Alternative Payments Institutions.....	48
Table 4 - Traditional Lending Institutions compared to Alternative Lending Institutions	51
Table 5 - Overview of Key Benefits of Innovations within Investment Management.....	53
Table 6 - Overview of Innovations within Insurance Value Chain.....	56
Table 7 - Traditional Financial Intermediaries compared to Alternative Funding Platforms	59
Table 8 - Overview of Digital Challenger Banks	68
Table 9 - Shortened Timeline of Key Revolut Related Events	77
Table 10 - Overview of Accounts offered by Revolut.....	87

1. Introduction

1.1. Motivation

Starting with the role of deposit holder, trade facilitator and lender, the roots of financial institutions can be traced back to as far as ancient times of Mesopotamia and Persia (Davies & Davies, 1996). Naturally, financial institutions have gone a long way to become the strong entities as we know them today. As a matter of fact, major financial sector improvements in the last 7 decades were mainly related to the rise of technology. These include the first credit card issued at 1950, introduction of automated teller machine (ATM) in 1967, online banking in mid 1990s, and foundation of PayPal solution in 1998 (Judd, 2017) (Cronin, 1997). Currently, the financial services are being widely used among individuals and enterprises across the world and were estimated to make up around 17% of worldwide GDP already back in 2014 (Ross, 2014). As a result, stable and thriving financial service sector is essential to modern day economy (Witko, 2016).

A recent wave of digitalization has taken place in many industries and financial sector was not an exception. It has been estimated that by the end of 2017 a total of USD 100bn were invested in financial technology (fintech) startups worldwide and in 2017 alone, the amount peaked at USD 27.4 billion (Accenture (B), 2018). Financial technologies developed by startups have brought major changes to the banking industry challenging the incumbent financial institutions (Marr, 2017). Fueled by innovative technology and completely different business models, new entrants quickly gained momentum and are now estimated to put around 24% of industry incumbents' revenues at risk. 88% of surveyed executives of financial institutions expressed their fear to lose part of their business to standalone fintech companies (PwC, 2017), as most of the incumbent financial institutions are struggling to innovate themselves and find an answer on how respond to disruption in the era of digitalization (Deroose & Li, 2017) (Kocianski, 2017).

Due to significant impact it has had on the incumbents, disruption of the financial services industry cause by startup companies is interesting and relevant topic to investigate. Moreover, as we are the users of financial services ourselves, we are naturally curious to understand why the changes in the industry have been taking place and how the near future may look like. Finally, we consider this topic to be of high academic importance, since research on disruption of financial services industry is quite limited and our analysis could therefore contribute to improved understanding of this still-evolving phenomenon.

We therefore recognize that it is crucial to understand the reasons for disruption and success factors of startup companies achieving it. Furthermore, since most of the incumbent financial institutions have managed to adapt to the changes in the past, our motivation in this paper is therefore to also provide

recommendations on how the industry incumbents should respond to disruption of the financial sector in the era of digitalization.

1.2. Research Question

Given our motivation and the relevance of the topic presented above, our research question is formulated as follows:

- Using the case of British startup company “Revolut”, why and how did disruption of financial services industry begin in the 21st century? Given the findings, how should incumbent financial institutions respond?

In the first part of the research question we will determine the reasons for disruption of financial services industry and identify success factors of startup companies in achieving it. This will be realized by analyzing Revolut as a case company and applying our theoretical framework. The choice of company and thesis method will be justified in the “Methodology and Research Design” section.

Based on the findings obtained by answering the first part of the research question, we will then provide a recommendation to and suggest possible plans of action for incumbent financial institutions.

1.3. Key Concepts

The following are the main concepts of this thesis:

- Fintech startups – companies emerging in financial services sector that explicitly employ digital technologies to provide their services. These fintech startups often use internet and mobile application platforms
- Disruption – major shift from the usual way that business is conducted. It can take a form of new products (or services), or be a new business model, typically targeting underserved customer segments of an existing market
- Unicorn – a privately held startup company valued at over USD 1bn (Rodriguez, 2015)
- Incumbent financial institutions – we define incumbent financial institutions as traditional banks that have operated in the financial services industry for a minimum of seven years and generated profits. The term incumbent financial institutions is therefore treated as the equivalent of traditional banks and will be used interchangeably throughout the thesis

1.4. Structure

Figure 1 below illustrates the flow and structure of our thesis.



Figure 1 – Thesis Structure

(figure is a production of thesis authors)

As illustrated above, we started our thesis with an introduction part, where we presented our motivation, research question and key concepts which will be used throughout the thesis. Subsequently, a section on delimitations that define our thesis focus areas will follow.

Later on, we will present our choice of thesis method as well as research design, and provide justification for such choice.

After the section on methodology and research design, we will provide a literature review. To be specific, we will give an overview of what we argue to be a good representative of traditional strategy theories – Michael Porter’s Five Forces, SWOT, and PESTLE models. Following that, we will provide a founded critique of these theories for being unable to keep up with the current business trends and failing to explain emerging business phenomena such as industry disruption.

Following the literature review and critique of conventional theories, we will present our theoretical framework, consisting of (i) Clayton Christensen’s Theory of Disruptive Innovation, (ii) Eric Ries’ Lean Startup Method, (iii) Rita McGrath’s Theory of Transient Advantage, (iv) Approach of Pricing and Free, as well as concepts of (v) Network Effects and (vi) Switching Costs. This combined framework will be applied to the case of British fintech startup company Revolut to answer our research question.

Before performing the actual case-study analysis, we will give a short overview of all types of financial services and briefly explain how they have changed in the light of digitalization.

Subsequently, we will present recent trends in fintech investment and determine the impact of fintech startups on the financial services industry. We will then provide a thorough analysis of digital challenger banks, and provide justification for selecting Revolut as our case company.

Afterwards, we will apply our theoretical framework to the case company to answer our research on how the disruption of financial services industry began and what the success factors of fintech startups were in achieving it. We will finish the section with an investigation of how incumbent financial institutions have responded to disruption until now.

Later on, we will give an overview of how the near future may look like for Revolut in particular and players of the financial services industry in general.

Following the outlook of the financial services industry, we will provide a key recommendation to industry incumbents and suggest available options for them.

After that, we will make a concluding section to summarize our findings, and provide reflections on our thesis.

1.5. Delimitations

In this section of the thesis, we will outline our decisions with respect to thesis focus areas, choice of case company as well as type of methodology, and explain the reasoning behind these choices. In other words, we will describe the boundaries that we have set for our study.

Guided by our research question, one of our thesis goals is to explain why and how disruption of the financial services industry began in the 21st century. As the banking sector was started being shaken up by fintech startups, we have selected to use case-based approach, which focuses more on qualitative factors than on quantitative aspects. We argue that such approach is optimal in our case, as we want to determine the reasons for disruption and identify success factors of startup companies in achieving it, rather than quantify the overall disruption impact on the banking industry.

We have selected British fintech startup company “Revolut” as our case company for two reasons. First, it has by far been the most successful digital challenger bank, which is well reflected in:

- Exceptionally fast growth in terms of number of markets served and customers acquired
- Very high customer satisfaction
- High trust of investor community, reflected in the startup’s current market valuation of USD 1,7bn, making it a fintech unicorn
- Short time to break even which is uncommon for companies of such nature
- Distinctive features, such as interbank rates and cryptocurrency trading platform

Second, Revolut has set the most ambitious goals for the future among its competitors, planning to enter markets in North America, Singapore, Hong Kong, Australia, and New Zealand already in 2018, and acquire 100m customers during the next five years. In the later sections we will give a thorough overview of Revolut and other digital challenger banks.

Based on the findings from answering the first part of the research question, our other goal is to suggest possible plans of action to incumbent banks in the light of disruption. It is important to note that we will not provide recommendations for Revolut, as we believe that the startup is currently on the right track and that traditional banks should learn a great deal from it.

As our analysis later reveals, large tech firms, such as Amazon, Google and Facebook, can potentially become disruptors of financial services industry going forward. Despite being aware of this possibility, we have chosen not to provide recommendations for large tech firms either, as this is out of scope of our thesis. We argue

that extensive research and analysis of such firms' business models and services is required, or else we would risk providing flawed and wrong recommendations.

As for the various types of financial services, we have decided to not explicitly focus on any of them. We argue that focusing on any specific area of financial services would make our analysis of disruption in the financial services' industry incomplete, and we would potentially misguide incumbent banks in our recommendations' part.

Lastly, despite the hype and publicity surrounding cryptocurrencies, we have only analyzed the effect digital currencies have had on Revolut until now. Due to volatile nature and high uncertainty of cryptocurrencies, we have decided not to speculate in predicting what the future for them may look like, and what impact they may have on Revolut and other fintech startup going forward.

2. Methodology and Research Design

In this section, we will specify our approach in answering the research question, reasons for using such method, as well as its strengths and weaknesses. Afterwards, we will discuss research design of the thesis.

2.1. Thesis Method

One goal of our thesis is to explain why and how disruption of the financial services industry began in the 21st century. To achieve this, we have chosen to use case-based approach, focusing more on qualitative factors than on quantitative aspects, and selected British startup company “Revolut” as our case company. We argue that such approach is suitable to our case, as we want to determine the reasons for disruption and identify success factors of startup companies in achieving it, rather than quantify the overall disruption impact on the banking industry. It is important to note that despite being heavily qualitative, our thesis does employ some numbers to prove the statement that disruption of the financial services industry is happening and that fintech startups are starting to cause a great deal of concern to incumbent banks.

Case-based method has several advantages. First, it allows to investigate and explore an event or a phenomenon deeply and thoroughly. Second, case study is one of the best ways to stimulate new research. In our case, as the subsequent analysis shows, it has led to new research areas, such as the potential future rise of large tech companies, such as Facebook and Google, in the financial services industry. Third, case-based approach allows to challenge established ideas or theories, as in our case happened with traditional strategy theories and their questionable validity in the light of product and service digitalization. Fourth, it gives new insights, as it did in our thesis, making us to understand about the necessity of having corporate culture and values which promote failure as means of learning in order to come up with innovative solutions and be successful.

Case-based approach also has several drawbacks, such as researcher bias and difficulty to replicate. We, however, argue that we have managed to deal with these drawbacks appropriately. First, we have coped with the issue of subjectivity by using various sources to support our statements and verify facts, as will be explained in more depth in the following subsection about research design. Second, the key take-aways from our analysis are relevant and applicable to other companies, such as traditional banks. We argue that we overcome the issue of difficulty to replicate associated with case studies, providing substantiated recommendations to incumbent financial institutions.

As for the choice of company, we have decided to use the British fintech startup Revolut due to several reasons. First, the company has by far been the most successful digital challenger bank. We assessed the success of such companies based on a number of factors, such as pace of growth in terms of number of

markets served and customer acquired, level of customer satisfaction, trust of investors, profitability, and distinctive product features. Second, Revolut has set the most ambitious goals for the future among its competitors. In evaluating future goals, we looked at elements such as expected number and type of markets as well as customers served.

To help us answer our research question, we have utilized our theoretical framework, consisting of Clayton Christensen's Theory of Disruptive Innovation, The Lean Startup Method, Rita McGrath's Theory of Transient Advantage, Approach of Pricing and Free, as well as Network Effects and Switching Costs. Theory of disruptive innovation assisted us in explaining how the disruption began in the financial services industry, while the rest of the theoretical framework facilitated our analysis of Revolut's success factors in achieving this. By obtaining these findings, we pave way for our recommendations part, where we further utilized insights from theory of disruptive innovation, lean startup method, and theory of transient advantage to provide recommendations to traditional banks and suggest possible plans of action for them.

2.2. Research Design

There are two types of research data – primary data and secondary data. Primary data is a new information collected directly through interviews, surveys, focus groups or social media monitoring. Secondary data, by contrast, is publicly-available information that has been collected by others (Wolf, 2016). Several examples of secondary data sources are government publications, websites, books, journal articles and reports.

In our thesis, we have focused on secondary data rather than primary data due to several reasons. First, young companies such as Revolut are usually reluctant to share information with third parties, as this may significantly affect the success of their business, given the highly competitive nature of such companies. Second, the information obtained directly from the company may carry bias in this case, as Revolut would arguably be incentivized to share information that can benefit it and avoid disclosing facts that may harm it.

To deal with the issue of subjectivity and bias, as briefly discussed in the thesis method part above, we have used secondary data. We have compared and cross-checked information from various sources, such as journal articles, reports and studies of professional consultancies and academics, as well as information available on widely recognized and credible websites, to ensure the reliability and validity of both qualitative and quantitative data. In this way, we have supported our statements and verified facts, ensuring the trustworthiness and soundness of our findings and conclusions.

3. Literature Review

In this section, we will review three conventional theories – Porter’s Five Forces, SWOT, and PESTLE – and criticize them for not being able to keep up with the current business trends. There are several reasons for selecting these specific models. First, they are prominent within academia, being widely taught in universities around the globe. Second, they are a popular tool among external management advisors and in-house consultants when formulating a corporate strategy. Third, these three strategic management approaches are interlinked and complement each other – SWOT model is used for the analysis of a company (micro level), Porter’s Five Forces help identify industry factors (industry level), while PESTLE is a tool used to determine external factors (macro level). Due to these reasons, we argue that Porter’s Five Forces, SWOT, and PESTLE are a good representative of conventional theories.

3.1. Porter’s Five Forces

First described by Michael Porter in his classic 1979 Harvard Business Review article, Porter’s Five Forces model has been developed to help companies evaluate the nature and degree of industry’s competitiveness, how trends will affect industry competition, and which industries are attractive (Porter, 2008). The model was also intended to facilitate the development of corporate strategies. As the model’s name suggests, five industry forces make up the model and are key for analysis. As Figure 2 indicates, these are (i) threat of substitute products or services, (ii) threat of entry, (iii) intra-industry competition, (iv) bargaining power of suppliers, and (v) bargaining power of buyers.

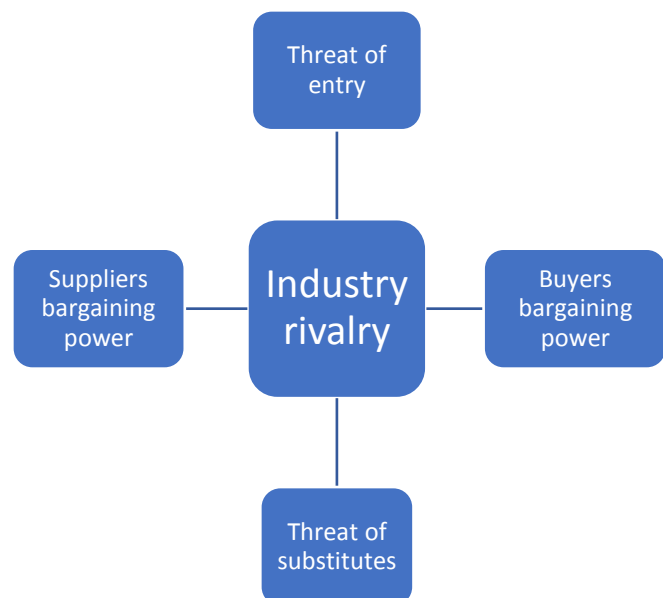
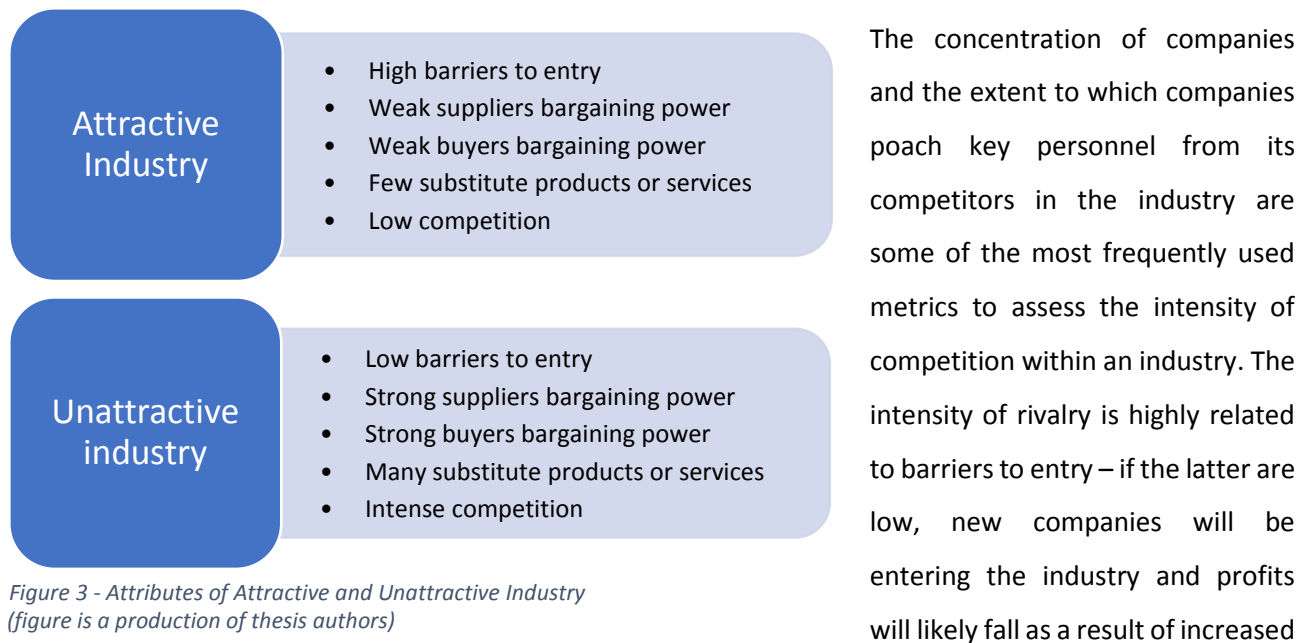


Figure 2 - Porter’s Five Forces
(figure is a production of thesis authors)

An attractive industry that is highly profitable is characterized by high barriers to entry, limited bargaining power of both suppliers and buyers, low number of competitors, and few or no substitute products or services (Harvard Business School, 2018). By contrast, easy access to market, strong suppliers and buyers’ negotiating power, high number of competing firms and substitutes define an unattractive industry. It is, however, noteworthy that in Porter’s view, unattractive industry does not imply loss, and it is possible for a firm to earn higher than average returns in this kind of industry (Porter, 2008). Figure 3 summarizes key

characteristics of attractive industry and unattractive industry. As stated above, the model serves as a tool for formulating firm's strategy, revealing how powerful each force is in a given industry.



competition. Therefore, according to the Porter's Five Forces model, it is essential for existing industry players to create high barriers to entry to deter new entrants. The following are some of the attributes of high threat of entrants:

- Relatively low amount of capital needed to access a market
- Incumbent firms do not hold trademarks or patents
- Customer switching costs are low
- Low customer loyalty
- Nearly identical products
- Economies of scale are easy to achieve

A strong bargaining power of suppliers allows them to sell highly priced input, such as raw materials, to the firms operating in an industry (Jurevicius, 2013). A higher manufacturer price obviously translates into lower profits for the retailers, unless the consumers' price elasticity is very low. A strong bargaining power of suppliers is achieved when there are few suppliers and many buyers, when suppliers hold scarce resources, and the cost of switching for alternative raw material is high.

A strong bargaining power of buyers allows consumers to demand lower price and higher quality of products, which is obviously the opposite of what the producers desire, resulting in lower industry profits. Buyers gain a lot of bargaining power when there are few buyers and many substitutes.

The last force of Porter's Five Forces model, threat of substitutes, is high when buyers can easily find alternative goods at reasonable prices (Jurevicius, 2013). An example could be margarine and butter – they both are cheap and easy to substitute one for another.

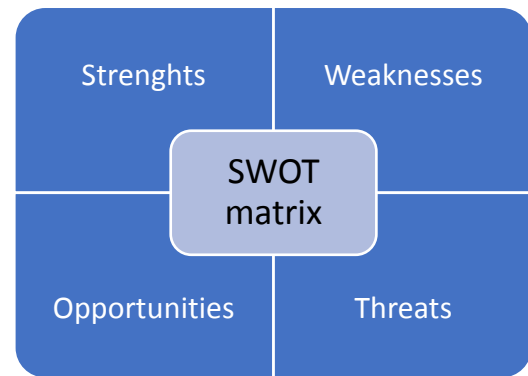
It is important to emphasize that a company can affect these forces to a certain extent. For example, by heavily investing capital into equipment, it can increase its production capacity and benefit from economies of scale, which increases barriers to entry for new entrants. Another example relates to bargaining power of buyers in the market of coffee. The manufacturer of Nespresso coffee making machines locks in its users by selling the coffee machine at a relatively low price, but charging high price for coffee capsules. Having acquired a coffee machine, the switching cost to another product increases and consumers are more likely to stick to the already purchased product despite having to pay high price for the coffee capsules. This happens because most of consumers are irrational and are unlikely to consider the purchase of Nespresso machine, an initial investment, as a sunk cost when evaluating substitutes to Nespresso machine. Third example also relates to bargaining power of buyers. Ryanair, Irish low-cost airline, has offers to increase customer loyalty. For instance, it recently started offering its customers option to book and stay with Ryanair Rooms at a discount of 10%. This discount is, however, not directly refunded to customer's bank account. Instead, the customers can use this "travel credit" on Ryanair flights. This shows how company can indirectly lower its customers' bargaining power, and at the same time incentivize its clients to stay with the same service provider by offering travel credits and convenience to book all trip elements in one place at once (Plush, 2016) (Goodman, 2018).

3.2. SWOT and PESTLE

SWOT analysis is an analytical technique with a focus on assessment of internal and external factors affecting the performance of a company or organization (Management Mania, 2018). In contrast to Porter's Five Forces model that solely focuses on outside factors, SWOT has a lot of emphasis on inside factors that can shape company's success. Naturally, SWOT analysis is used in strategic management of a company. While the analysis by itself does not provide any strategic suggestion, insights gained from it help to formulate a firm's strategy.

Designed by Albert Humphrey in the 1960s, SWOT is an acronym for strengths, weaknesses, threats, and opportunities (Professional Academy (A), 2018). As Figure 4 shows, analysis of strengths and weaknesses focuses on the internal factors, whereas analysis of threats and opportunities gives an understanding of external factors.

Breaking further down, internal factors help find out what company is good at, what advantages it has in terms of the competitors. Some of the strength examples are high quality products, exclusive access to resources, patents. Internal factors also shed light on what areas company is weak at, such as low efficiency, poor planning. Weaknesses and strengths can be analyzed using financial analysis, resource analysis, product portfolio analysis and analytical tools.



*Figure 4 - SWOT Matrix
(figure is a production of thesis authors)*

External factors, on the other hand, help identify opportunities and threats outside of the company that can facilitate or impede the achievement of firm's strategic objectives. General examples of these are shifting consumer trends, changing price of raw materials, growing or decreasing overall market size, legal environment. For the assessment of external environment, multiple tools are available (Management Mania, 2018). However, the most prominent one is PESTLE analysis, which complements the above described models by focusing on macroeconomic factors shaping the overall business environment.

PESTLE is made of six factors:

- **P**olitical
- **E**conomic
- **S**ocial
- **T**echnological
- **L**egal
- **E**nvironmental

Political factor analysis looks at type of governance in the country – democracy, authoritarian regime, etc. – and how the ruling bodies intervene in the economy. Important determinants of the political environment are political stability or instability and government policies concerning various spheres of the economy, such as trade, tax and labor (Professional Academy (B), 2018). The most common economic factors are economic growth, interest rates, exchanges rates, level of inflation, and consumers' purchasing power. Social factors, also known as socio-cultural factors, are population growth, age distribution, male-female ratio. Social factors also encompass areas that involve the shared belief and attitudes of the population, such as career attitudes, cultural taboos (Professional Academy (B), 2018). Technological factors, the fourth component of PESTLE analysis, relate to research and innovation, emerging technologies, technology legislation, intellectual

property rights and issues (ProcessPolicy, 2018). Legal factors relate to existing laws, regulation and legislation. Last but not least, environmental factors include those that influence or are determined by the surrounding environment, such as environmental regulations and sustainability (PESTLE Analysis, 2018).

It is important to stress that nature of business and industry should decide the focus factor(s) of PESTLE analysis. For instance, fossil fuel power station is more affected by environmental regulation, such as reduction of carbon footprint, than a company operating in tobacco industry, which is more constrained by legal regulation, such as banning of tobacco product advertisement.

SWOT matrix and PESTLE model together provide a full overview of inside and outside risks and opportunities which businesses find useful when formulating their strategy. However, as discussed in the next section, we argue that these conventional analysis models are less valid and valuable for many businesses due to quick technological advancement that has led to disruptive innovation in certain industries such as banking.

3.3. Critique of Conventional Theoretical Approaches

One of the common features that all three traditional strategy approaches possess is their assumption of relatively stable business environment. While models allow for the change in certain variables of the environment, such as industry competition, economic factors and political climate, they assume that the industry itself is fixed. The latter is especially evident in Porter's Five Forces model. However, we argue that these days' business environment is less stable and defining an industry is extremely complicated, as traditional product boundaries have expanded, especially in the light of service and product digitalization. To put this into perspective, think of a smartphone. The smartphone today is far more than a gadget to make or receive calls and messages; hence its name. The smartphone is an alarm, a map, a computer, a calculator, a flashlight, a video camera, a calendar, and a dictionary. And this list could be considerably prolonged. Hence, industries are no longer fixed and business environment is less stable than assumed.

Another assumption, overlapping with the one above, that the theoretical models make is that competition only takes place within a given industry. Traditional theories assume that companies operating in an industry should only be concerned with what is happening in their industry. However, due to increasing customers' needs and expanding product boundaries, industry borders are melting, and the rules of the game are changing. The cross-industry competition is becoming the norm, which, as will be discussed later, Rita McGrath describes as competitive arenas. Thus, companies need to rethink their business strategies and redefine their competitive environment. WeChat, a Chinese messaging and social media app with over 1 billion monthly active users (Hollander, 2018), perfectly exemplifies cross-industry competition. The app not only acts as a communication platform, but also offers payment services for its users, called WeChat Pay

(WeChat, 2018). The WeChat Pay has become so popular that it is even beginning to change an old Chinese tradition, whereby people send and receive red envelopes as a way to show fondness and good wish (Zhang, 2018). A large fraction of the Chinese population is now using or planning to soon opt for digital envelopes offered by WeChat Pay that are to replace traditional physical envelopes. Another relevant example is Ryanair, an Irish low-cost airline, which not only provides air transportation services, but also offers various complementary services, such as car rental and accommodation booking. Lastly, think of Uber; in addition to ride services, Uber provides complementary services, such as food delivery (Aouad, 2018). Thus, the traditional models fail to account for inter-industry competition.

Conventional approaches also assume a high level of certainty, making it much easier to formulate a corporate strategy. Sound market research, proper planning and timely-execution are possible to realize under conditions of low uncertainty, as market size and growth rates can be fairly accurately estimated and the needs of main customers are well known. However, as will be explained by Clayton Christensen's theory of disruptive innovation, the reality is opposite when the uncertainty is high, as is the case with disruptive technological innovation. Lack of data about emerging market and its potential in terms of number of customers and profitability makes it extremely hard to make any projections. It is difficult to estimate what budget should be allocated, what resources will be needed, when breakeven can be expected, and what ROI will be achieved. Hence, management nowadays needs a different approach for formulating and implementing corporate strategy; something that the Lean Startup Method offers, as will be shown later.

Another area of criticism is firm's source of revenues. Traditional theories assume that customers are sole means for companies to make money; therefore, companies should strive to set profit maximizing prices to consumers. However, as the section about free pricing method will show, companies can earn a revenue even when they provide a free service (with no strings attached) to its customers, especially when we think about digital services.

Furthermore, traditional theories, especially Porter's Five Forces, devote a lot of focus on (supply side) scales of economies, failing to account for demand side economies of scale. As will be discussed in theory of network effects, exploiting supply side scales of economies is no longer enough, and companies need to extract the benefits of large networks, especially in the light of service digitalization.

Lastly, the traditional theories emphasize the importance of competitive advantage, such as high barriers to entry. However, as Rita McGrath argues, the advantages nowadays are rather transient and companies have little time to exploit them. As industries are disrupted and have to be rearranged constantly, these old competitive advantages are becoming less relevant and other qualities, such as capability to generate ideas and innovate, are proving essential.

4. Theoretical Framework

4.1. Clayton Christensen's Theory of Disruptive Innovation

Clayton M. Christensen is American scholar, educator and author of *The Innovator's Dilemma*, his first book, where he shows that even big, successfully operating firms can do everything right and yet start losing their market ownership, or even fail. In his book, Christensen shows how companies miss out on new innovation which he coins as disruptive. Ironically, the author argues that this paradox is caused by the same reason that has led the currently successful companies to where they are now (Christensen, 1997).

In his first book, Clayton Christensen presents a theory of disruptive innovation which has received a lot of attention both in business world and academia. The central idea of disruptive innovation theory is that large, incumbent companies face many dilemmas when being exposed to technological and market changes. These dilemmas in fact help explain why these leading, resource-rich companies can lose the battle against its emerging, smaller competitors. Nevertheless, as the argument goes, mature companies are able to make a necessary change, although a difficult one, in order to survive in industries that are being shaken by disruption. Insights from this theory will help us explain how disruptive innovation came about to the financial services industry, and provide recommendations to the incumbent financial institutions.

When analyzing the effect of innovation on incumbent companies, Clayton Christensen distinguishes between two types of innovation – “sustaining” innovation and “disruptive” innovation (Christensen, 1997). Sustaining innovation targets high-end customers that have great demands with a product or service that is better than was previously. Usually, these sorts of innovations are incremental improvements upon existing products or services, such as higher definition TV or wireless headphones. In contrast to widespread thinking, sustaining innovations can also be “breakthrough, leapfrog-beyond-the-competition products” or services (Raynor, 2003, p. 31). It is interesting to note that sustaining innovation is not limited to product or service, but can also happen within an organization, in the form of process innovation. Such process innovations are usually associated to improved and less costly service. Relating to our topic, a type of process innovation within banking could be closing bank branches and replacing them with online-based solution that is providing the same yet more convenient (e.g. no need to queue in a bank; a-few-clicks-away access to app) service at a lower cost.

Clayton Christensen argues that, regardless of the technological difficulty of innovation, mature companies win the battles of sustaining innovation in most of the cases (Raynor, 2003). This happens because sustaining innovation strategy implies an improvement of a product or service that can be sold for higher profit margins, and this is where incumbent companies have the necessary incentives and enough of resources to take on

the sustaining innovation battles. Clear and easily identifiable profit opportunities play an important role in the theory of disruptive innovation, as we will explain in the following part. Apart from being resource-richer than smaller and younger companies, mature firms possess more experience than their emerging competitors. Lastly, sustaining innovation does not have a prerequisite of shaking up organizational culture, and is therefore relatively easily achieved by established companies as sustaining technological innovation can be said to be similar to expansion of “business as usual”.

Disruptive innovation, on the other hand, is new concept or ways of delivering value to consumers. This, however, does not necessarily mean that a better product or service is brought to existing customers in existing markets (Raynor, 2003). In fact, products and services that are not as good as existing ones are introduced, subsequently disrupting and redefining the trajectory of existing markets. While possibly less sophisticated, disruptive technologies have their own advantages, such as convenience and low price. These benefits find their appeal in other consumer segments, for instance among new or less-demanding consumers. And when the latter happens, the improvement cycle of disruptive product or service starts. As illustrated in the Disruptive Innovation Model in Figure 5, the technological progress is happening at a pace that exceeds customers’ abilities to use it, and the previously-not-good-enough technology advances to the level where it intersects with requirements of more demanding customers. And when that level of the new disruptive product is reached, the disruptors are taking a path that will eventually crush the established companies (Raynor, 2003).

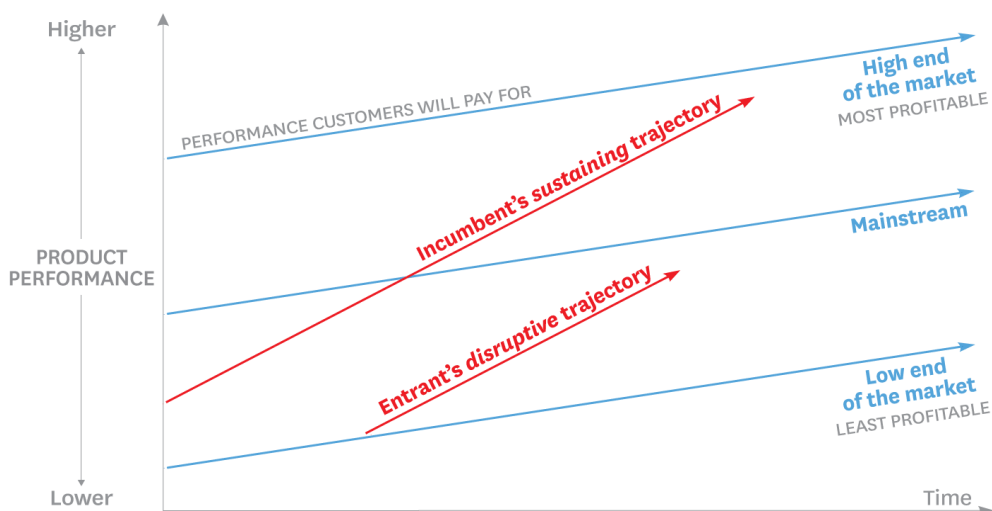


Figure 5 - The Disruptive Innovation Model (Christensen, Raynor, & McDonald, 2015)

To describe it in different words, mature, established companies focus on improving their offered products or services for the most demanding customers which are commonly also the most profitable, therefore overshooting the needs of other segments or simply ignoring the less-demanding customers. Entrants that

eventually become disruptors enter market by targeting those overlooked customer segments, introducing more convenient functionalities, usually at a cheaper price. Established companies, focused on extraction of higher profits from more-demanding customers, tend to take little action in response. As a result, entrants start targeting upper segments, delivering the performance that mature companies' mainstream customers want, while at the same time preserving the initial benefits of their products or services that drove entrants' early success. These entrants become industry disruptors the moment when mainstream customers begin to adopt entrants' products or services in higher volumes, and when incumbents' dominance is being challenged (Christensen, Raynor, & McDonald, 2015). This is a kind of disruption that is now happening in payments and other areas of financial services industry.

Unlike sustaining innovations which are usually successfully implemented by incumbent firms, disruptive innovations in most cases are caused by smaller and younger firms, such as startups. Disruptive innovation has a crippling effect on incumbent firms. With resource allocation processes designed to support sustaining innovations, established companies are unable to appropriately respond to actions of disruptive innovators (Raynor, 2003). Incumbent companies have all the incentives to go upmarket, but few or no to defend low-end or new markets that startups are targeting. The authors of book *The Innovator's Solution* call this phenomenon "asymmetric motivation" (Raynor, 2003, p. 43). The latter motivation closely relates to resource allocation decisions made within established companies, which, as Christensen and Overdorf point out in their book, are highly political processes where the negotiation power of participants (read various departments or business units) influences the outcome of decision (Overdorf, 2000). As the business units are generating most of cash, they are more likely to get attention of top management, which is responsible for making budget and drawing company's future strategy, and win the battle of resource allocation. Obviously, managers of such business units are less likely to focus on innovations that can be potentially disruptive, and more likely to invest in sustaining innovations. As explained above, disruptive technologies often enter a market via a lower segment first which is less profitable. Low-margin segments help explain managers' lack of interest in disruptive innovations, as managers' performance rewards are often tied to yearly profits and has too little focus on longer term achievements. Another reason is that high-demanding customers initially don't want to use products or services based on disruptive technologies (Christensen, 1997). Lastly, managers may be lacking technical knowledge to be convinced to take up a risky investment or having too little faith in the potential of disruptive innovations. In any case, resource-allocation processes in well-established companies are becoming flawed in the light of innovations that are disrupting virtually every industry, and should be updated to account for challenges arising from startups and less-mature firms' actions. Speaking of solutions to resource allocation problems, one way would be to use alternative metrics where revenue streams are not the most important performance indicator (Kristian J. Sund, 2016). An

example of such metric is estimated market potential. We will discuss solutions to such problems to a greater extent in the recommendations section of the paper.

Based on the aforementioned effects, several important principles of disruptive technology can be proposed. Understanding these principles, rather than ignoring or fighting them, can help managers succeed when confronted with disruptive innovation (Christensen, 1997). Principles are also of high value for companies, be it major or small, mature or young ones, when they are considering engaging in innovation themselves. These principles are presented below:

- 1) Decision-making within firms is influenced by customers due to resource dependence of firms
- 2) Large, established companies cannot have their growth needs solved by small, emerging markets
- 3) Small, emerging markets are hard or even impossible to analyze, measure and plan for
- 4) A firm's capabilities in the form of values and processes determine that company's disabilities

The first principle relates to resource-allocation process within established firm, as discussed above. At a surface level, it may seem that managers are the ones who control the resource-allocation; however, it is customers who highly impact the money and resource allocation decisions in the end, as this is the way for companies to ensure that the needs of current customers are met and most-profitable customer segments served. In fact, it is the mature and successfully performing companies that are best at "killing" ideas that their current customers don't want. And while many successful innovations are customer-driven, listening only to customers might lead to a situation where an opportunity of adoption of disruptive innovation turns into a threat for the very existence of a company.

The second principle dictates that mature companies focus on large, established markets to meet growth targets, which are set forth by investors. Small, emerging markets are not big enough in terms of customers and revenues to make a significant positive impact on a company's market value, and therefore rarely catch the attention of the bigger companies. And even when mature companies notice these markets, their strategy is to wait until these markets become sizeable enough before taking actions (Christensen, 1997). More often than not such strategy is flawed, as significant first-mover advantages with respect to entering emerging market are not utilized, and mature firms risk to be shaken or even overtaken by smaller competitors engaging in disruptive innovation, as is currently evident in the financial services industry.

The third principle relates to analysis of a market. Sound market research, proper planning and timely-execution are key traits of good management. While these are possible to achieve in relation to sustaining innovation, as market size and growth rates can be fairly accurately estimated and the needs of main customers are well known (which explains why mature companies are successful at this type of innovation),

it is more complicated to realize in the case of disruptive technological innovation. The lack of any data about emerging market and its potential in terms of number of customers and profitability makes it extremely hard to make any projections. It is difficult to estimate what budget should be allocated, what resources will be needed, when breakeven can be expected, and what ROI will be achieved. The risk of errors is harder to accept for larger firms, as they have more at stake in case of failure. It is important to stress that it is the lack of data about such emerging markets that puts first-movers at an advantageous position. If everyone had complete information, the first-mover advantages would be very difficult or impossible to exploit.

The fourth and last principle relates to the most valuable resource of any company – its employees. When managers want to tackle a problem or come up with innovative solution, they first need to set up a team to which a task can be assigned. Without a question, the most capable and talented people should be performing a job. However, many managers assume that finding and recruiting the right people is enough – this sort of thinking is flawed. Having the right team on its own does not ensure successful execution of the task at hand, because companies have capabilities that exist independently of the people who work within them. These capabilities take two forms. First, it is internal company processes, according to which employees are taught to turn input into output (in the form of a product or service). The second form that capabilities take are organizational values. These values affect how managers and employees make organizational decisions. While people can be assumed to be flexible, in the sense that they can be trained and learn how to perform certain things, internal methods and values are less flexible and harder to change, especially within large corporations. As Clayton Christensen points out in his book “The Innovator’s Dilemma”, people working for a global company can quickly learn the necessary skills to work in a small startup. By contrast, a company’s process that is effectively managing the design of a minicomputer would be unsuitable in design of a desktop personal computer (Christensen, 1997). In similar fashion, values that lead and incentivize employees to prioritize high margin, profitable products or services cannot at the same time make them focus on low-margin offerings that may have more potential in the future. Therefore, organization’s capabilities in the form of values and processes determine that company’s disabilities.

As mentioned above, managers need to understand these four principles relating to disruptive technological innovation and what message each is conveying, to be capable of facing disruptive innovation or engaging in it themselves. The idea behind these principles will be utilized when providing recommendations to incumbent financial institutions.

The key take-away from Clayton Christensen’s model is that companies should interpret risks in a completely different way than previously. Instead of being deterred from engaging in new disruptive innovations by high failure risk and associated costs, companies should deploy a strategy where such failure bears little cost and

happens at an early stage of the innovation process. In addition, the initial failure should not prevent companies from further attempts to innovate; instead, it should be viewed as lesson that can be incorporated into future iterations of the product or service. This sort of thinking is advocated by Lean Startup Method, which we will unbox in the following section.

Another important takeaway is that, although incumbent companies need to respond to disruption if it is occurring, they should not overreact by turning away from a still-profitable business. Instead, they should continue enhancing relationships with their main customers by spending money on sustaining innovations. In addition, they could create a new business division or a subsidiary focusing solely on the potential opportunities arising from disruptive innovation. According to research, success of such new unit is to a large extent affected by its separation and independence from the core business (McDonald, 2015).

4.2. The Lean Startup Method

The lean startup approach was first proposed by an American entrepreneur Eric Ries. In his bestseller “The Lean Startup: How Constant Innovation Creates Radically Successful Businesses”, Ries is arguing against the then common notion that hard work, perfect idea, and perseverance are a prescription to success (Ries, 2011). According to the author, it is a myth that good timing, determination, and most importantly, good product or service alone ensure the fortune. The author supports his doubts by examples from experiences of his own and others, where promising startups eventually failed.

Before digging into the Lean Startup Method, it is important to unearth issues which, according to Ries, are to blame for failure of many startups. The following are the problems associated with old way of starting a business:

- Long lead times in the development process
- High initial costs
- Excessively high confidentiality with respect to product or service features

As previously common, companies would spend a lot of time developing a product with little or no customer insight. In certain cases, it would take years until an idea was converted into a product. The traditional innovation process where a single launch of a product or service was mainstream meant that product’s features had to match customers’ needs, while the product launch had to be perfectly executed. All of this required high initial investments from companies, in terms of money, resources and time. Obviously, such investments were carrying high risks, as there was little or no space for errors due to lengthy and expensive development process and virtually a single chance to win customers’ trust, also known as “hit-or-miss” opportunity. Another common feature in the traditional innovation process was very high confidentiality

with regard to product and its features. This Stealth Mode's strategy was meant to safeguard the company's secrets and avoid alerting potential rivals about a market opportunity, which was very important given the nature of traditional innovation process, i.e. high initial costs and long lead time in development (Maurya, 2012). It also implied that products prototypes were exposed to customers rarely and only during "beta" tests (Blank, 2013).

In response to traditional innovation process, Eric Ries proposed a research backed-up method for creating and managing startups, coined the "The Lean Startup method" (Ries, 2011). This approach is an application of lean thinking to innovation process. The method advocates the principles of failing fast and continuously learning, with focus on speed and customer feedback. The Lean Startup Methodology favors "experimentation over elaborate planning, customer feedback over intuition, and iterative design over traditional big design up front" development (Blank, 2013, p. 3).

The Lean Startup Method's idea is well represented by "build-measure-learn" loop, visualized in Figure 6, which guides the key activity of a startup – converting ideas into a product, measuring what customers think about the product, and learning whether to pivot or persevere (Ries, The Lean Startup Methodology, 2018).

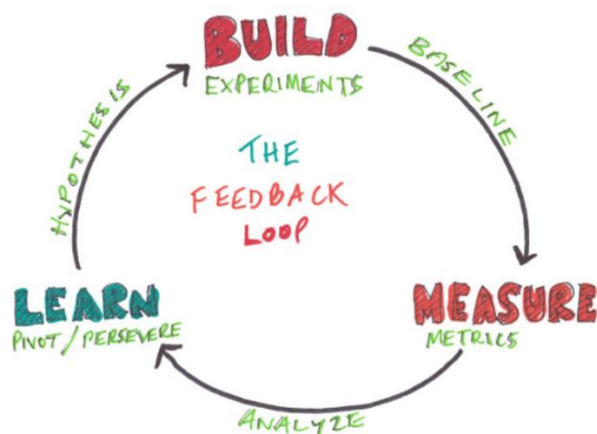


Figure 6 - Build-Learn-Measure Loop of the Lean Startup Method (Onextrapixel, 2018)

To fully utilize the idea conveyed in the aforementioned loop, companies should follow two fundamental principles of the lean method. First, instead of engaging in months of planning and research, and writing a complex business plan, entrepreneurs should begin with mapping out untested hypothesis relating to their business idea or model in the framework called Business Model Canvas (Blank, 2013). As depicted in Figure 7, Business Model Canvas is a lean startup template for developing new or documenting existing business models. By describing a firm, product, or service's value proposition, infrastructure, customer segments, and finances, the Business Model Canvas essentially shows how a company creates value for itself and for its customers.

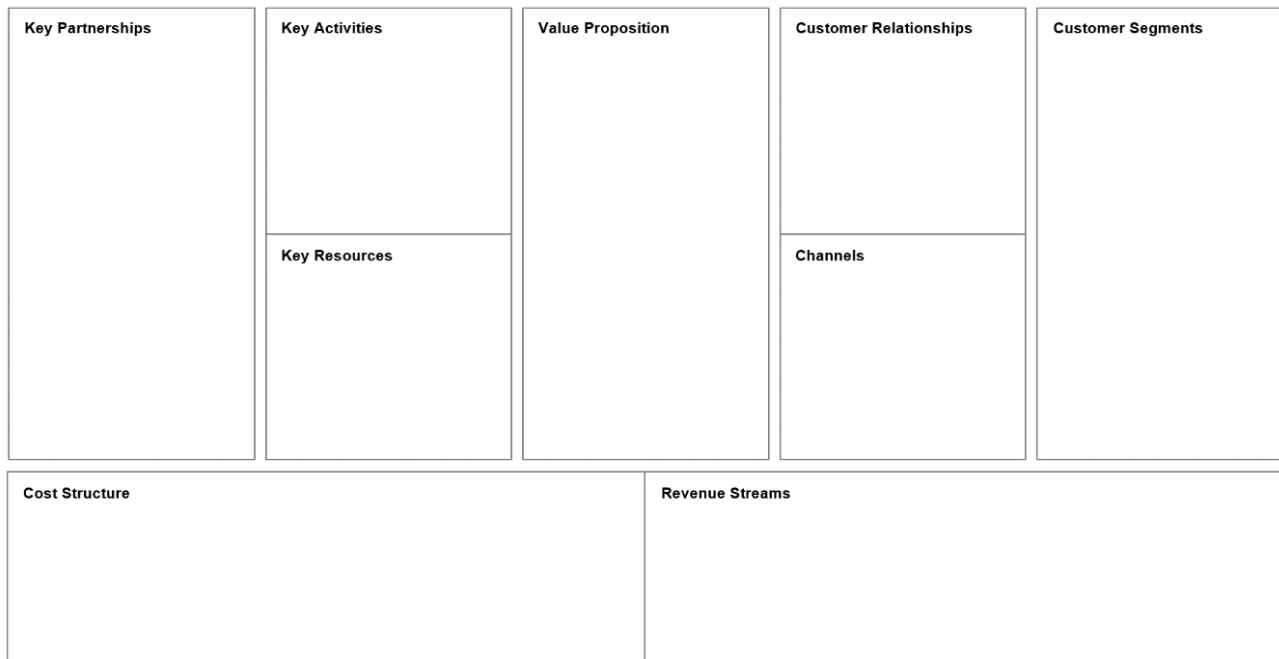


Figure 7 - Business Model Canvas (figure is a production of thesis authors)

Second, companies should employ a “get out of the building” approach to test their hypotheses (Blank, 2013). They can use various methods, such as surveys, questionnaires or direct interaction approach, to get feedback from potential customers, buyers, and partners on all elements of the business model, such as pricing, distribution channels, product or service features, distribution infrastructure, customer acquisition strategies. A few examples of hypotheses could be about consumers’ willingness to pay a certain monthly subscription fee for a service, such as online banking account, or their satisfaction with the new design of wireless earphones. By following such principle and focusing on agility and speed, companies would construct minimum viable products, defined as a product or service with simple features enough to catch the attention of early adopters and make your solution unique (Forbes, 2018), and straightaway obtain customer feedback (Maurya, 2012). Subsequently, using input from customers, companies could revise their assumptions and start the build, measure, learn cycle over again, testing hypotheses about the adjusted offering. It is noteworthy that adjustments to non-working ideas can be of two kinds: small adjustments (iterations) or major adjustments (pivots) (Blank, 2013). It is also important to stress that hypotheses about a product or service must be testable; otherwise the company will not know what kind of adjustment, if any, should be made.

As pointed out above, the main idea behind the loop is that a product or service is developed iteratively and incrementally. Such process has a major benefit compared to the traditional innovation process discussed above – it decreases the risk. Due to faster product or service delivery to consumers, less up-front capital is needed. Besides, the company more quickly finds out if its idea has potential, and can react accordingly by

iterating or pivoting the initial offering. Thus, the lean approach helps launch products or services that customers actually want, at a far lower cost and shorter time than the traditional method. Similar to Rita McGrath's notion of Discovery Driven Planning, the Lean Startup method adjusts the frequency of innovation from occasional to continuous. The following table highlights differences between the traditional innovation model and lean startup method:

Traditional innovation method	Lean Startup Approach
The cost of a mistake can be catastrophic	Mistakes are a means of learning
Long lead times in relation to development process	Quick launch followed by continuous validated learning and product / service development (iteration or pivoting)
Large initial and overall costs	Low upfront investment and reduced implementation costs / Scientific hypothesis testing
Stealth mode associated to high secrecy	Multiple small launches
High overall risk / Hit-or-miss opportunity	Low overall risk / Multiple opportunities due to early launch and product iteration or pivoting

Table 1 - Traditional Innovation Method compared to Lean Startup Method

Execution of continuous innovation according to the lean method as opposed to implementation of occasional innovation according to traditional methods, has certain preconditions. To effectively implement the lean method, company must meet certain requirements relating to use and allocation of resources, organizational values, culture, as well as leadership.

First, the company must ensure that some resources are available in the early stage of a project, due to early launch of product or service. It is equally important that a quick resource allocation process is in place, to be able to react accordingly after the initial launch. If the offering or business model is promising, additional resources will have to be deployed for the project. By contrast, if the customer feedback is negative and hypotheses are rejected, the company may need to redirect these resources. Thus flexibility, availability, and speed are key here. In similar fashion, the company's leadership has to create and advocate an organizational culture and values where failure is not viewed as tragedy, but rather a means of learning, allowing to iterate and pivot the initial product or business model for it to become a success story. It is interesting to note that these factors have some similarities to the principles of the disruptive innovation theory outlined in the previous section.

While the word startup in the Lean Startup Method suggests that such approach is tailored for startups, our argument is against that. Our belief that mature companies can apply such methods to foster innovation processes is in fact supported by empirical evidence. One company to exemplify this is General Electric, an American multinational conglomerate. In 2010 Prescott Logan, the general manager of Energy Storage division in GE, had a feeling that a new battery could be developed to disrupt the whole industry. Instead of following steps associated to traditional innovation process, and building a factory (high up-front costs) to scale up production and launching the new offering (without knowing if the customers really needed and wanted it), the general manager put lean ideas into use. He started looking for a business model and interacting with customers. The feedback he has received allowed him to better understand customers' needs and what issues they were facing, and take that into account with respect to product development. Furthermore, it helped to identify target segments, leading to a major shift in customer focus. Data centers, one of the initial target segment, were removed from the equation and replaced by utilities, a user segment discovered as result of communication with potential customers. After eventual decision to invest USD 100m, a world class battery manufacturing facility was opened in 2012. According to the press, demand has exceeded all expectations, and the company was running a backlog of orders (Blank, 2013).

Another example of a large company successfully implementing the ideas of lean method is DBS, a multinational banking and financial services corporation headquartered in Singapore. The bank made huge investments in technology and initiated radical changes to transform itself for digital innovation (Sia Siew Kien, 2015). For example, in 2016 DBS launched innovation lab that was given a high degree of freedom and necessary resources to experiment (Lee, 2016). Internal incubation and external partnering in seeking new digital innovation were key in the bank's digital transformation strategy, the strategy that led DBS to become the "World's Best Digital Bank" (South China Morning Post, 2017).

With the help of aforementioned examples, it can be argued that, despite the methodology's name, in the long term some of the biggest payoffs of lean method may be gained by the large companies that embrace it. We will use key notions of the lean method in the recommendations section.

In the next subsection, theory of Transient Advantage, which challenges the traditional view of sustainable competitive advantage and advocates the need for continuous innovation, will be introduced.

4.3. Rita McGrath's Theory of Transient Advantage

A well-known academic and an author Rita Gunther McGrath (2013) in her work "The end of competitive advantage" argues against the traditional strategic theories and proposes a theory of transient advantage (McGrath (B), 2013). She argues that in often cases the traditional strategic theories based on sustainable

competitive advantage are no longer suitable to be used due to increased uncertainty and volatility in the environment of the businesses. Traditional strategic theories based on stable environment assumption suggest that once the company finds a competitive advantage, it should focus on making this advantage sustainable and build barriers to entry against the competition. Nevertheless, it has been observed, that in most cases the environment is not stable. Acknowledging that the environment is changing rather than being steady raises a big challenge for the traditional theories to cope with. In the meantime, McGrath explains competitive advantages as waves that come and go and are split into 5 stages (Figure 8) (McGrath (B), 2013).

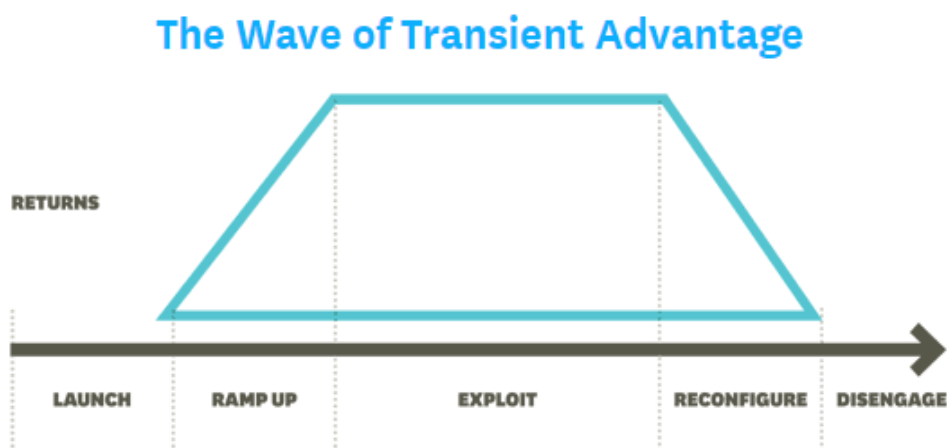


Figure 8 - The Wave of Transient Advantage (McGrath (B), 2013)

According to traditional theories, the focus would be on the middle “exploit” section of the wave, where the company tries to sustain and extract as much returns as possible. This is also the area, where business directs most of its attention, hires employees and fortifies assets. As a consequence, organization can soon become rigid and focus on sustaining the strategy rather than innovating it. This is very natural in a setup with stable environment, but since Rita Gunther McGrath argues that most industries are now exposed to uncertainties and volatility, that causes these waves of transient advantage to fall into much more rapid cycles. The theory of transient advantage therefore suggests that the only way to keep a competitive advantage is to always be ready and capable to innovate the strategy and reconfigure the business set-up onto a new competitive advantage (McGrath (A), 2013).

A good example of completely different strategies could be illustrated by Kodak and Fuji stories. Kodak has followed a logic of long term sustainable advantage and therefore in 1980 and 1990 kept on investing and focusing in what has made the company successful in the first place – film-based technologies. In the meantime, their competitor Fuji has consistently been moving its investments and human resources towards exploring a new digital technology. The outcome was fascinating - by taking an approach of transient

advantage and investing into new technologies instead of only focusing on exploiting the current advantage, Fuji has prevailed, while Kodak struggled for years after (McGrath (A), 2013) (Millar, 2014).

To be successful in riding the waves of transient advantages, the business should be highly focusing on the processes and people skills required for each of the stages in the wave of transient advantage (McGrath (A), 2013):

- **“Launch”** process is essential in being able to find new opportunities and innovate the business. At this stage the company generates ideas, allocates resources and people who are capable of experimenting while searching for a new path forward. Systematic innovation process should ensure continuous innovations in the company, so that a company always has options and other opportunities in case current ones do not work. It is important that the firm has people who are coping well with uncertainty and are good at testing and evaluating the opportunities
- The next stage of **“ramp-up”** happens when the launch succeeds, the idea progresses and demonstrates prosperous future. In this phase the company moves from testing ideas into implementing the successful one at the full scale. In order to beat the competition, the time can be extremely important, as the longer it takes, the faster competition can catch up. The people’s skills that are very valuable at this period include the ability to identify the potential of ideas at their early stage and translate the tests into a full-scale process. Change management is crucial at this stage, since the business might have been focused on a completely different strategy before and needs to transition to a change
- If the “ramp-up” process is passed successfully, business moves to a stage of **“exploitation”**, which may have different time horizons depending on the industry and the advantage itself. In this case the company delivers a clear benefit to customers and in return gets to enjoy a competitive advantage. This advantage allows the business to increase market share and exploit the profits, but it also makes it a target for competition. The organization should aim at prolonging this period of exploitation and defend its core competences that create a competitive advantage. To succeed in this stage managers should possess good skills in creating effective and systematic processes, identifying threats and reacting to competition. Additionally, having in mind that this phase will not last forever, managers should pay particular attention to continuously generating new ideas and competencies that would be used in creating new transient advantages later. In contrast to traditional strategic theories, a company should avoid allocating disproportionate resources to this stage, as excessive assets would build barriers and make it difficult for the organization to phase-out from the current advantage and shift into a new transient advantage

- As the competition catches up and the company starts losing its competitive advantage, the theory suggests that **“reconfiguration”** and building up on a new transient advantage should take place. Essentially, it is time to ride a new wave of transient advantage. During the reconfiguration stage, the company not only transfers its resources and capabilities from already exhausted to a new transient advantage, but also has to successfully reposition their people and assets. People may be assigned with new tasks, while assets may be utilized differently. Capability to effectively reconfigure is crucial in order to successfully catch the next wave of transient advantage. People’s skills required at this phase include the ability to recognize and acknowledge decline at an early stage. These people should therefore be the first initiators of a change
- The last step of the wave is **“disengage”**. During this stage the company keeps only the resources and capabilities that are needed for the next wave and disposes those that will not be needed for moving forward. Some people might be let go, while assets may be sold. Therefore, managers should not hang on the sentiments and be ready to abandon some processes as well as to divest parts of the businesses

To be successful in riding the waves of transient advantage, timing is important in each of the phases. Larry Downes and Paul Nunes in their book “Big Bang Disruption: Strategy in the Age of Devastating Innovation” challenges the traditional Everett Rogers’s bell curve market segmentation in adoption of new products or services (Downes & Nunes, 2013). They suggest that markets with disruptions will have a shark fin

Big Bang Market Adoption

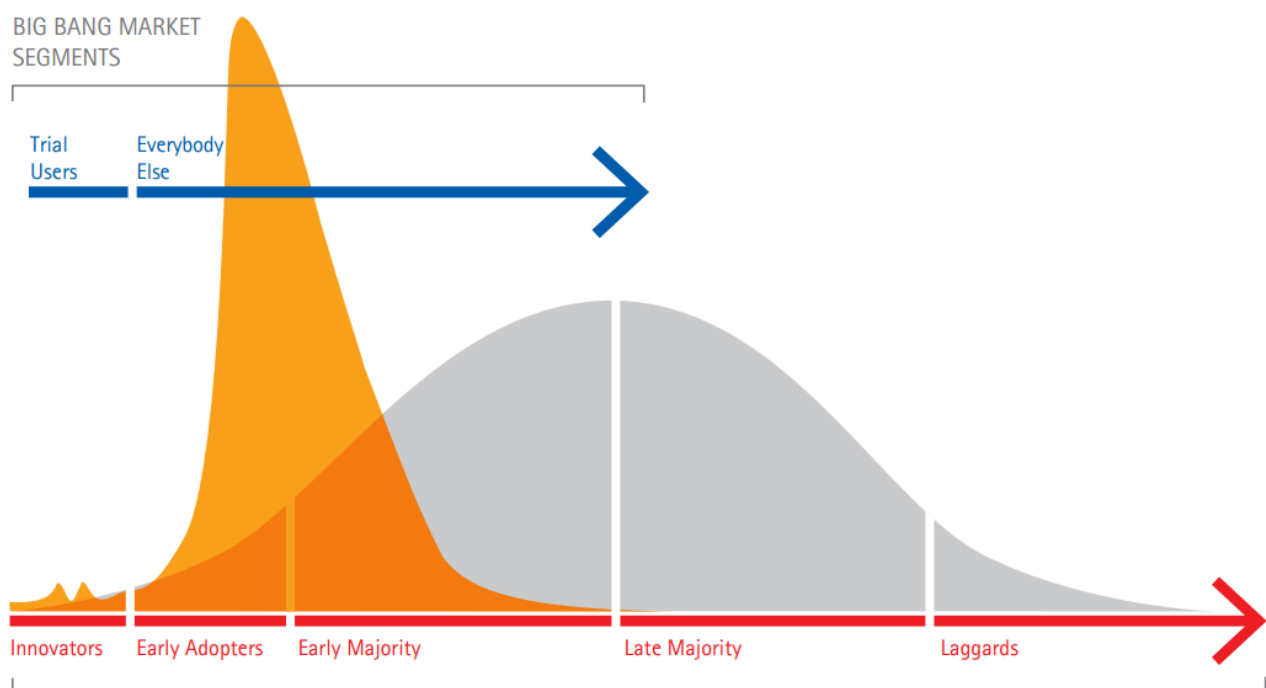


Figure 9 - The Shark Fin (Downes & Nunes, 2013)

distribution of market segments in the adoption process. As presented in the Figure 9 below, there are only 2 segments: trial users; and everybody else. At the same time the adoption process is extremely fast. That rapid adoption rate followed by almost as quick drop in it requires companies to be capable to quickly build up on new trend, extract all the benefits and turn around the business plan to reconfigure on the next opportunity. This complements Rita McGrath's theory of transient advantage and her emphasis on the need to have required capabilities and execute them quickly at each stage of the wave (Downes & Nunes, 2013) (McGrath (A), 2013) (Oertel, 2015).

Another very important assumption that McGrath questions is related to the industry competition. According to the traditional strategy theories, the competition happens across companies in the same industry, as they have close substitutes to suggest. Nevertheless, recently more and more competition could have been seen across the industries. Therefore, Rita McGrath argues that industry level analysis might not capture the right level of competition and proposes a new concept of arenas. When evaluating the competition, the company should no longer look at only close substitutes within the industry, managers should also be aware of other offers in each arena that fulfills the same customer needs. Arenas are three-dimensional playing fields that consider the interaction between market segment, product or service offered and geographical location. Having said that, the business might have more than one strategy to compete in different arenas promoting unique offer at each (McGrath (A), 2013).

To summarize, in the book "The New Playbook" Rita Gunther McGrath proposes a number of shifts in company's operations that would bring it closer to enjoying transient advantages. The key topics are the following (McGrath (A), 2013):

- Acknowledging that current advantage is temporary. Therefore, leadership is expected to challenge the status quo with the learning taken into business decisions. Additionally, the business should be ready to disengage from the advantage in a structured way
- Company should ensure a systematic innovation on an ongoing basis, with separate resources assigned to this process
- Entrepreneurial growth should be supported, while experimenting and creation of "real options", rather than selection of projects based on net present value, should be advocated
- If failures bring learning, they should be encouraged
- Resource allocation should be based on the opportunity present
- Focus should be on delivering customer experience and solutions to their problems. As argued by the transient advantage theory, the competition quickly catches up and the offerings become

commoditized. Therefore, it is key of importance to ensure full coverage of customer problems / needs and high standards of customer experience

- Emphasis should be on rapid execution. At the same time, leaders are expected to make decisions fast
- Prioritize smooth change during the reconfiguration phase and avoid sharp downsizings

The transient advantage theory is extremely relevant when considering the challenges that incumbent financial institutions are facing nowadays. In line with Rita McGrath's ideas, competitors from other industries have come to the financial sector and started disrupting it. Startups with their lean strategies and willingness to experiment have been moving into the industry and gaining market share at the expense of rigid financial institutions that are too heavy on assets to react.

In the next subsection, we will introduce concepts of Pricing and Free, explaining how companies can be profitable despite offering free services, and why this can be the right pricing strategy.

4.4. Pricing and Concept of Free

In his book "Free: The Future of a Radical Price", Chris Anderson presents an idea of free price, which is truly free and has no strings attached (Anderson, 2009). Opposite to common thinking, this free can be and is profitable, especially when we talk about digital services. But how can this be possible that we charge nothing, and yet earn money?

To explain this, it is important to distinguish between old "free" and the new free. The old "free" in quotation marks creates an illusion that something is free, although the reality is quite the opposite. Companies employ powerful marketing tools to exploit "free", such as giving away one to create demand for another. Several examples of such are giving away a cell phone but selling a monthly plan, or installing coffeemakers in office at no charge but selling expensive coffee packets (Anderson, 2009). "Free" pricing empowers companies to change consumer psychology, break old and create new markets, and make any product more appealing than it would be otherwise. Thus, "free" does not imply profitless, it just means that revenue route is indirect.

By contrast to "free", Free has no such strings attached, and is not something we are used to in traditional retail. It is genuinely free, and not just a trap for a future sale. Think about Google, Facebook or Wikipedia. Many people visit these websites every day, but they are not required to indicate their credit cards details, nor are their bank accounts debited for using either of the websites. The paradox of the price of 0.00 can mainly be explained by the cost base. Digital distribution is virtually gratis. In other words, the marginal costs of selling / distributing more are near-zero in the online industry. The only costs that such companies incur

are the initial investment and overhead, assuming that no further investment is made along the way. But how do such businesses make for a living? To answer this question, we need to look beyond the cost base.

Chris Andersen explains that free can generate money via cross-subsidies, which can be grouped into four main categories (Anderson, 2009):

- Direct cross-subsidies
- Three-party market
- Freemium
- Nonmonetary markets

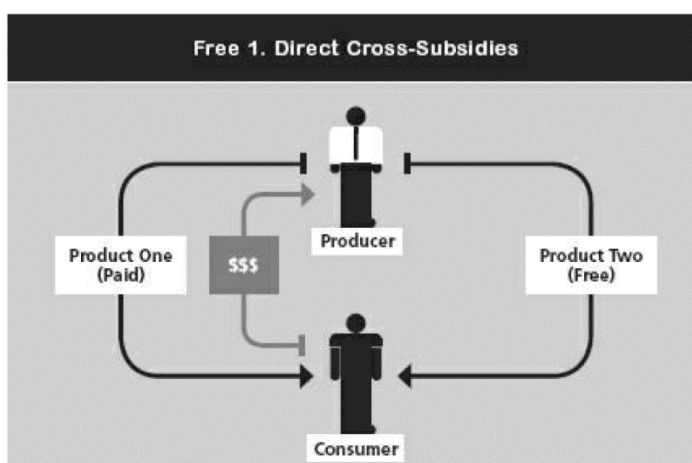


Figure 10 - Direct Cross Subsidies (Anderson, 2009)

Direct cross-subsidy is similar to the old “free”, and is characterized by a situation when a consumer gets something for free but wants to buy something more. Money in this case can be derived from either the consumer itself or someone else. An example when the same consumer eventually spends the money would be when someone is given a free sample, and afterwards wants to buy a product or service (e.g. after eating a piece of cheese in a

supermarket or using a free version of virtual private network (VPN)). Another example shows how a company can earn money from non-customers – a bank gives a free debit card to its customers but imposes a charge on the retailers from whom bank’s customers buy goods using their debit card. Under direct cross subsidy, technology allows companies widen their markets.

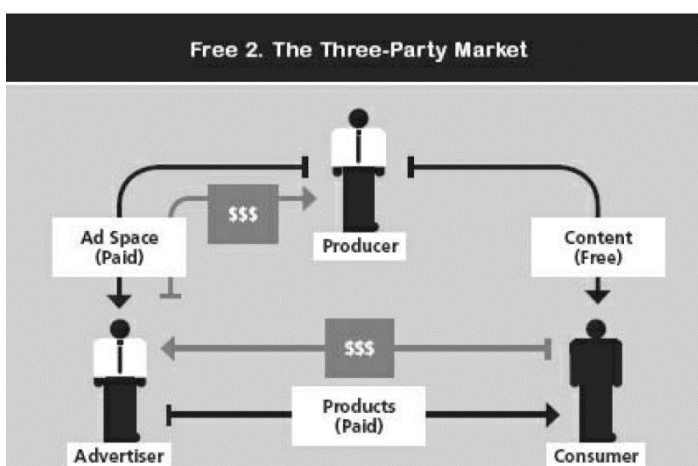


Figure 11 - Three-Party Market (Anderson, 2009)

Three-way market system is most commonly used among the four cross subsidy categories. In three-way market, a third party pays to take part in a market created by free exchange between the first two parties. In other words, a company creates free content or a network of users, and then makes revenue by charging a third party to gain access to that network, either to advertise or extract information

about those users. This sort of cross subsidy is used basically by all media. For instance, we do not pay to listen to the radio or watch TV, because a third party, companies that want to acquire new customers, pays the media provider to advertise their product or service on the TV or radio. Nor do we pay for browsing the Internet, because third parties pay the websites owners money to obtain data about such people. This is called a three-way market. Economists also call such models “two-sided markets”, due to two groups supporting each other. One group is advertisers, who pay for media to convey a message to customers. Customer, the second group, in turn “supports” advertisers by buying their products at a price that includes the advertisers’ marketing costs (Anderson, 2009).

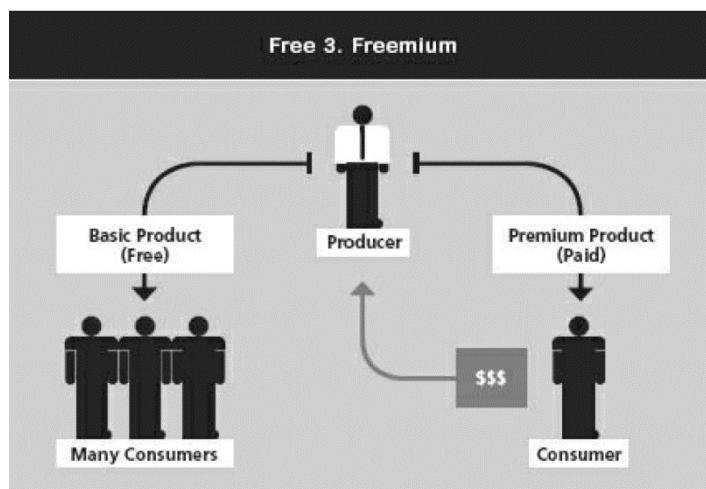


Figure 12 – Freemium (Anderson, 2009)

Freemium is the third type of cross-subsidizing and is one of the most common models for online businesses. Under such model, a company offers a basic version that is free, and one or more paid versions that are better than the basic version.

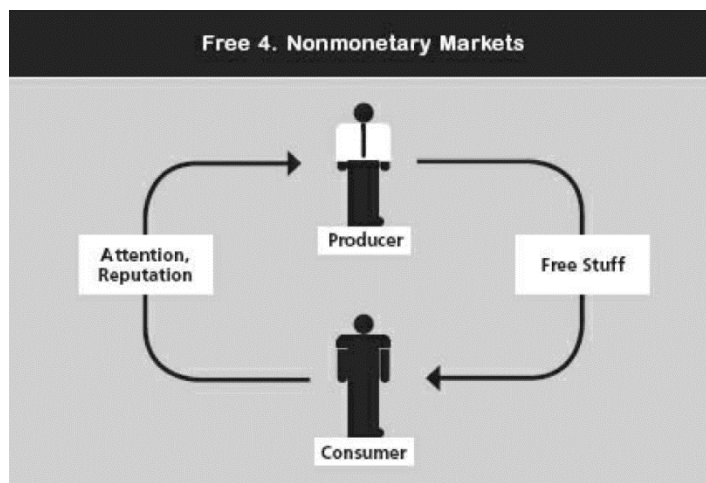


Figure 13 - Nonmonetary Markets (Anderson, 2009)

Nonmonetary markets are markets that are free for everyone to use. These markets exist due to either altruistic intention or by users’ effort. For example, some websites require its users to solve a puzzle or fill out a questionnaire in order to use the website. Such users’ efforts are eventually turned into revenues by the companies.

The following table summarizes the four main categories of cross-subsidies, indicating what is free and to whom.

Type of cross-subsidy	What is free?	Free to whom?
Direct cross-subsidies	Any product that tempts an individual to pay for something else	Hardly anyone, because everyone is willing to pay at some point
Three-party market	Software, content, services	Everyone
Freemium	All that is not a part of a premium account	Users of a basic version
Nonmonetary markets	Anything that is given away without expecting a payment	Everyone

Table 2 - Overview of Cross Subsidy Types

It is important to point out that the new Free would most likely not work in traditional industries, as marginal costs hardly ever drop to zero there, even when economies of scale are fully exploited, and thus the product or service cannot be offered at the price of zero. In online industry, by contrast, marginal costs do fall to virtually zero and Free pricing strategy can be implemented. When discussing rationale behind the free price method, Chris Anderson refers to Google's max strategy, a strategy to make Google free and in that way reach the biggest possible market and achieve mass adoption (Anderson, 2009). As the marginal costs are zero, there is no reason for not making your offering available to as many people as possible. And the higher the audience, the more appealing (read more profitable) your product or service becomes to advertisers or those collecting data about consumer behavior. In fact, according to Anderson, a 5% rule exists in digital information industry, meaning that 5% of the users, be it users using premium account or users paying to advertise, can support the rest.



Figure 14 - Law of Price and Demand (ProfitWell, 2018)

However, the argument goes, max strategy can only be successful only if the offering carries a price of zero; a phenomenon explained by a concept of penny gap. The penny gap is a notion based on consumer psychology, arguing that there is a big difference between a price of zero and a price above that, even if the two are different by a single penny (Anderson, 2009). But how can such low change in price affect consumers' decision? After all, from economic point of view, a single penny does not matter to most people. Answer to this paradox is simple: when something costs something, even as little as penny, people are confronted

with price and are forced to think whether they really want it. By contrast, when something is offered for free, such decision gets much easier. Relation between price and demand is well illustrated in Figure 14.

While free has several advantages, it is also important to look at drawbacks associated with zero pricing. To begin with, a product or service that is offered at the price of zero could be signaling a low quality. In addition, when people are offered something for free, they tend to grab it but not to use or consume it properly. To illustrate this, think about a free buffet during a conference. Since it is served for free, people attending the conference will grab all they can, but most likely leave a lot uneaten in their plates. Such people's behavior is explained by the fact that they do not need to pay a single penny for what they are getting. In other words, no cost implies no commitment for consumers, and this can be detrimental for any company's success, especially at the initial stage when entering a new market.

We have chosen to use Chris Anderson concept of free because it helps us explain how Revolut has managed to acquire so many customers over short time, and gives insights into the startup's revenue model. In other words, it allows to understand how Revolut can eventually become profitable despite being free.

In the following subsection we will analyze a phenomenon called network effect. This concept of networks effect will help us explain the aforementioned commitment issue associated with the new free method, which is one of the reasons why we have chosen to use it in our paper.

4.5. Network Effects

Economies of scale were driving the old industrial economy, while economies of networks are now driving the new information economy. The central concept in the digital information industry is positive feedback, which affects a network's value. If the feedback is positive, users are more likely to connect to a network. In similar fashion, the value of a network depends on the number of other people already connected to the network (Varian, 1999). In this sense, digital networks are no different from physical networks, such as rail networks. The idea behind network effects is simple – all things equal, it is better to be a part of a bigger network than a smaller one.

It is important to know the concept of positive feedback to understand the economics of information technology. According to Varian and Hal, positive feedback makes the strong stronger and the weak weaker (Varian, 1999). To illustrate this, think about a telecommunications industry. If one provider has many users, it can benefit from economies of scale, while its users can more widely exploit the free calls within the same network. Another example can be Facebook. If few of your friends were using Facebook, the value of having a Facebook account (read posting nice pictures from a beach or commenting about particular basketball game) would be lower. Speaking of financial services, when a bank has many users, it can benefit from higher liquidity, which is also beneficial for the bank's customers, as they can more easily obtain necessary funds.

As the name suggests, negative feedback has the opposite effect. It makes the strong get weaker, and weak get stronger. Under such scenario, firms find an equilibrium rather than moving towards the extreme of single winner. Varian and Hal explain this phenomenon by using an example of oligopolistic industry (Varian, 1999). According to the authors, when industry leader tries to grow its market share, smaller competitors take action in response to maintain theirs, usually finding a niche to achieve this. Such smaller competitors' responses prevent the industry leader from achieving a market dominance. In addition, the argument goes, at certain size the companies find it difficult to expand due to natural complexity of managing a large enterprise and costs associated to it (Varian, 1999). While negative feedback may have such effect in traditional industries, it is less the case in online industries. As pointed out in the section about free pricing, the marginal costs in online industry are virtually zero, allowing the companies to distribute its offering to as large a market as possible. Therefore, the negative feedback is of lesser relevance to our case.

According to Varian and Hal, positive feedback can lead to an extreme outcome, where a single player comes to dominate the market (Varian, 1999). This should not come as surprise, especially thinking about information economy, where, as previously discussed, marginal costs can drop to as low as zero, enabling companies to serve as many users as possible. However, for this to happen, the old economies of scale (supply-side economies of scale) are not enough, as companies hit a natural growth limit when the negative feedback kicks in. Instead, the network effects (demand side economies of scale) have to be exploited. As opposed to supply side economies of scale, demand side economies of scale do not scatter when the market becomes large enough.

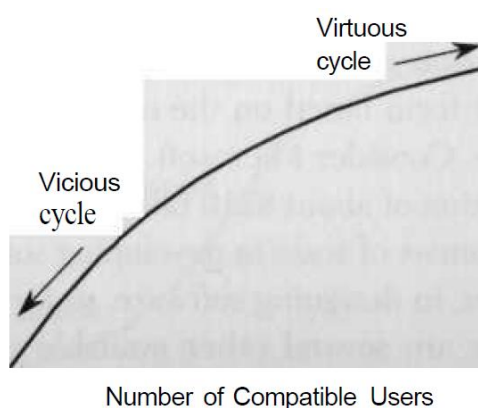


Figure 15 - Vicious Cycle vs. Virtuous Cycle
(Varian, 1999)

Thus, consumer expectations are vital in network effects. Product or service that is expected to become the standard will become the standard. Based on this conclusion, companies should bear in mind that network can be extremely important to a firm's success, and drifting the focus from network and how it could be expanded can alone lead to a decreasing market share. The relationship between popularity and value of an offering is well illustrated in Figure 15. As the curve shows, a product or service with many users becomes more

valuable with each additional user added. An increasingly more valuable offering, in turn, attracts even more users, leading to a virtuous circle. By contrast, the value of an offering starts dropping when users begin abandoning the network, creating a vicious circle. This vicious circle eventually leads to a significantly decreased network, whose remaining users are those with particular preference for the product or those

that face high switching costs. But what happens if a product or service is positioned on the middle of the curve? Which direction will it take? Here, it is the consumers' expectations that will impact the fortune of a product. If the product is expected to become popular, a bandwagon effect will form, and a virtuous circle will form. Thus, the customers' expectations will be proved correct. By contrast, if consumers will expect the product to fail, the product will lack momentum, and the vicious cycle will form. Again, consumers' expectations will be proved correct (Varian, 1999).

It is important to note that positive feedback does not work that quickly, nor is so predictable, that a single company instantly becomes a dominant market player, while other companies do not give up easily and quickly. There is an abundance of examples where two technologies' rivalry has been in balance and lasted for years. In addition, the power of demand side economies of scale is not necessarily high enough to make a losing company depart from the market (Varian, 1999).

All being said, the product or service features should not go to a second plan either. The key take-away from the points made above is that consumers are choosing not only a product, but also a network (think of Apple products and an interface between iPhone and Macbook). The larger the network is, the more attractive it is, phenomenon being coined network externalities.

Network externalities act as barrier to entry for creating new networks, because they make all users of a network face collective switching costs. As every new network starts from scratch, how can it break a spell of collective switching costs? How can a new technology succeed in the market?

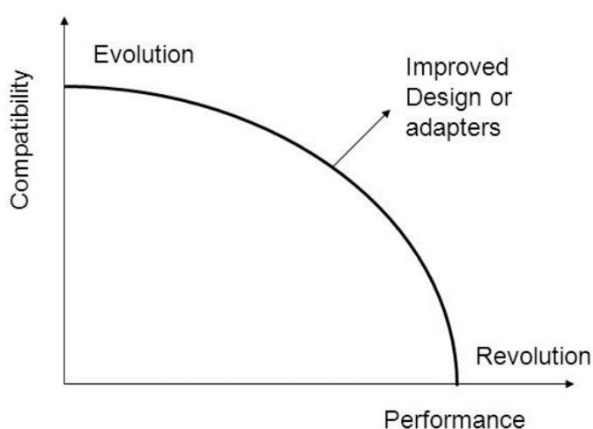


Figure 16 - Performance vs. Compatibility (SlidePlayer, 2018)

Varian and Hal propose two approaches how to deal with such issue (Varian, 1999). As shown in Figure 16, there are two directions which a new technology can take. In the case of revolution strategy of compelling performance (lower-right corner), a new technology that is superior compared to existing ones is made. However, the technological improvement comes at a cost – as a revolutionary product is usually incompatible with existing products, consumers face high switching costs. By contrast, in the case of evolution strategy of compatibility (upper-left corner), the technology is less ground breaking compared to existing ones but more compatible. The higher the compatibility is, the lower the switching costs for consumers are. As will be discussed in the following section, lower switching costs mean that consumers can more easily adopt a new product, while company can more

quickly build a large enough network. However, as the more compatible product offers fewer new benefits, it is less desirable than that with revolutionary features.

Ideally, a new technology should improve the product but leave it compatible with already existing ones. While a mix of the two aforementioned approaches is possible and should be aimed for, a trade-off of certain extent between technology's compatibility and performance is inevitable.

Besides trying to find a good balance between performance and compatibility, companies can and should make little steps to increase product or service adoption ratio and smooth out migration path to build a network of users at an early stage. In real networks, companies should consider using converters or adapters, making the transition between the old and new product easier for consumers. Example of such could be adapter between TVs and HDTVs, allowing consumers to watch high definition TV without actually needing to purchase a new TV (which in this case would be interpreted as switching cost). In virtual networks, consumers should be offered a migration path to achieve compatibility with existing products. Relating to our case, that would be making Revolut card compatible with Google Pay and Apple Pay.

In addition to offering a migration path, companies should strive to create an intuitive design and interface of their product. This would ease the compatibility and performance trade-off. Lastly, companies should look at the big picture, and consider not only what product they can offer, but also what consumers may want from it.

Bearing in mind all these and acting accordingly can make the trade-off between product compatibility and performance less extreme, and contribute to the success of a company.

The theory of network effects can also help explain how companies, like Revolut, can overcome the issue of "no cost, no commitment", and signal a value to their customers despite being free.

The following points summarize the key take-aways about network effects:

- Positive feedback is the dynamic process by which the strong get stronger, and the weak get weaker
- Positive feedback works to the advantage of large networks and against small networks
- Obtaining a critical mass of users is the key challenge – after that, the market will build itself
- Consumer expectations are vital to obtaining a critical mass. Product that is expected to become standard will become standard
- Firms introducing new products and technologies face a fundamental trade-off between performance and compatibility. Thus, having a superior technology is not enough – some tools might have to be employed to ignite positive feedback

In the next subsection, we will give a full presentation of briefly discussed switching costs, and explain how user lock-in can be created and used as an advantage.

4.6. Switching Costs

The internet and digitalization in general have brought changes in how customers seek information and buy products or services. That is particularly evident in the financial sector, where most of the processes can be executed over the internet. And even though the internet has made the economy much more friction-free, Carl Shapiro and Hal Varian (1999) in their book “Information Rules” are still arguing that switching costs are present, leading to imperfect competition. Internet enables people to order items or services and pay for them without stepping out from their homes. Nevertheless, authors are arguing that the switching costs are still present, since your purchase over the internet can still be influenced by the purchases done before. As an example, if a person owning a MacBook computer decides to upgrade to a new computer, regardless of purchasing platform whether it is a brick and mortar or internet website, the choice of computer will be influenced by selection made in the past. This is exactly what companies are trying to do – they attempt to create costs for customers that would be encountered if they decide to switch to competitors. Eventually, it is expected that switching costs will “lock-in” the customers and affect their decision making (Shapiro & Varian, 1999).

Switching costs may take various shapes including monetary, previously invested time, skills acquired or similar. In often cases these costs can be understood as an investment made in the past that is going to be lost if a decision to switch is made. The types of lock-in and the switching costs can be separated as following (Shapiro & Varian, 1999):

- **Contractual commitments.** One of obvious switching costs are associated with breaching the terms of contract. Contracts can often define quantity, price, the length of the contract and / or other specification. Nevertheless, in many cases it also includes the possibility for the business to adjust prices, change the quality of the product or service and other clauses that might benefit it. In case the customer decides to exit still valid contract with a business, it might be obligated to compensate for the breach of the agreement (Shapiro & Varian, 1999)
- **Durable purchases.** Another way to lock-in the customers is through an expensive first-time acquisition of the equipment followed by buying the complementary products that fit with the equipment. An example could be Xerox printing devices who are quite expensive themselves, but they also require specific toner cartridges. This way, customer is locked-in to buy the complementary products from the same manufacturer, as the costs to switch are equivalent to the cost of the initial equipment. It is also important to consider the lifetime of the equipment and the possibility of selling

it. The longer it lasts and the fewer options to sell it exist, the stronger the lock-in effect it has. Nevertheless, the older the initial equipment gets, the smaller the lock-in effect it generates (Shapiro & Varian, 1999)

- **Brand-specific training.** Once customers invest time into learning how to use a specific brand products or services, they invest time in acquiring the knowledge that later turns into a possible switching cost. For the training to lock-in the customers, it must be brand specific, since the general training would be transferable when switching to competition. It is also important to mention that opposed to durable purchases as mentioned above, the lock-in effect with brand-specific training grows stronger over time. A well fit example is a purchase of specific software that requires certain skills to use it. Over time customers become comfortable in using it and try to avoid a switch that would result in a new time-consuming process of learning. Brand-specific training can also promote single supplier concept that benefits from standardization. This is especially present in airlines business, where standardized fleets can reduce costs in training and maintenance (Shapiro & Varian, 1999)
- **Information and databases.** Yet a different type of switching cost can arise between information and the databases where that information is stored. When information is held on one type of system or hardware and the decision to switch to another platform is made, it can raise issues regarding the ability to transfer that information. Careful considerations should be made over what would be the costs to move the information and what information can be lost in transition. In often cases, just like with brand-specific training, the switching costs are growing over time. It is due to the accumulation of historical information on the system or hardware, which could be challenging to move. In such cases one way to avoid lock-in is for the customers to require standardized formats and interfaces to be used by the suppliers (Shapiro & Varian, 1999)
- **Specialized suppliers.** A choice to buy piece of equipment from a single supplier can guide your choices in the future, since equipment from the same supplier is often more compatible and delivers the benefits of a single brand. As a matter of fact, when the time to replace outdated equipment comes, customers might find themselves in a lock-in situation due to the specialized needs, which can be met only by that same supplier. The lock-in becomes even stronger if the equipment is highly specialized and / or after the initial bid granted to one company alternative suppliers fail to stay in the market (Shapiro & Varian, 1999)
- **Search costs.** This type of switching cost represents the time, effort and money spent in order for the buyer and new supplier to find each other. It could be argued that in the information economics age where the internet provides access to much more information, these types of switching costs are

smaller. On the other hand, it still takes time to search and it involves a certain unknown risk, as for example when a bank acquires a new customer and issues a loan, it is automatically exposed to default risk due to uncertain customers credit profile (Shapiro & Varian, 1999)

- **Loyalty programs.** Loyalty program creates artificial lock-in as an outcome of strategy employed by the business. By rewarding the customers for buying repeatedly, companies attempt to establish switching costs. It is a very common practice among airlines. The frequent flier programs, where customers are collecting points for their flights, create switching costs in a couple of ways. First, if a customer has a large amount of points that are about to expire and is missing just a small portion to get a free flight, by switching to other airlines and losing the collected points would create a perceived loss of a free flight. A second way how the frequent flyer programs lock-in are the loyalty levels based on the total or annual amount of points collected that in return rewards with additional services. Switching to another airline would cause losing the benefits such as access to lounge, speedy boarding and similar. As a matter of fact, loyalty programs are now being used by many companies in various industries with a concept of “get one free after a purchase of 10” or similar (Shapiro & Varian, 1999)

The switching costs are effective as long as they are higher than received benefit for changing the supplier. Nevertheless, customer satisfaction can increase or reduce the switching costs. If customer is highly satisfied with the current supplier, it would raise the switching costs due to the unknown satisfaction level with alternative supplier. On the other hand, if customers are dissatisfied with current supplier, the switching costs would be perceived as smaller (Shapiro & Varian, 1999).

When customers are locked-in, the company can also consider cross-selling option as business acquires an inside knowledge of customer needs. As presented before, the cross-selling can also complement their initially offered product or service, thereby creating an additional value for the customer, but at the same time increasing the switching costs. Another way to exploit the lock-in is to use the data collected about customer in making differentiated pricing strategies (Shapiro & Varian, 1999).

In traditional theory switching cost goes hand in hand with the establishment of long term advantage. Nevertheless, in line with Rita Gunther McGrath’s ideas, creating switching costs around the company and its name could also strongly benefit the business riding the wave of transient advantage. During the reconfiguration and ramping-up stages of the transient advantage, the switching costs can help to keep the customers and give a good start for moving into the phase of exploitation.

4.7. Combined Theoretical Framework

Having separately unpacked our selected theories and approaches, we will now explain how they complement each other and help us answer our research question.

One of our thesis' aims is to explain, using the case of British startup company "Revolut", how and why disruption of the financial services industry began in the 21st century. We argue that Clayton Christensen's theory of disruptive innovation is very useful in answering the 'how' part of our research question. The theory analyzes the type of innovation that large firms engage in and reasons for such innovation, allowing to identify available routes for disruption. We argue that the 'why' part of the research question can be effectively tackled by the remainder of our theoretical framework. Approach of Free and network effects allow us to identify what specific reasons made Revolut so successful, whereas the lean startup method explains what approach to

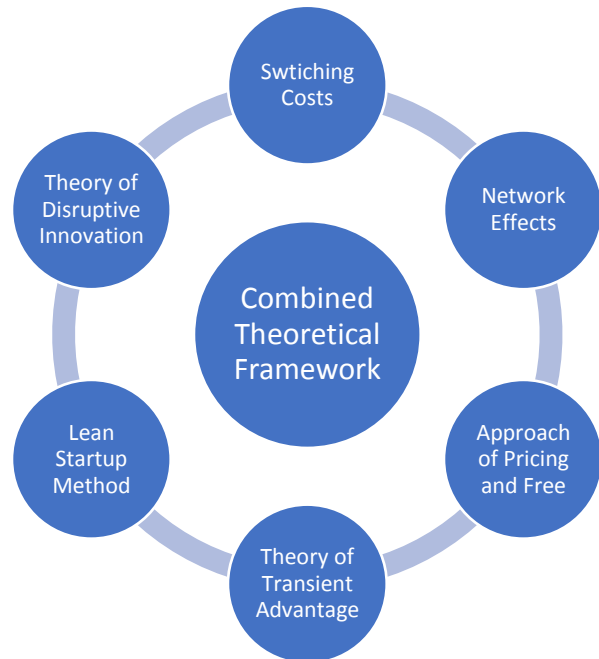


Figure 17 - Combined Theoretical Framework
(figure is a production of thesis authors)

innovation Revolut deployed and why it has proven so successful. Complementing the lean method, Rita McGrath's theory of transient advantage further explains the need for continuous innovation and necessity of focus on transient, rather long-term competitive, advantages. Lastly, the approach of switching costs allows to identify potential obstacles that small firms may be facing and how these can be eventually turned to their benefit (see Figure 17).

Our analysis of the reasons for disruption and success factors of fintech startups in achieving it, which we illustrate using the example of the British digital challenger bank Revolut, paves way for giving recommendations to incumbent financial institutions. In the section, which answers the last part of our research question, we identify what internal changes traditional banks should first make in order to be able to fully exploit our identified alternatives to successfully respond to the challenges and opportunities arising as a result of disruption. In providing recommendations, we use the key ideas of the lean startup method and theory of transient advantage to argue that, once those ideas are accounted for, incumbent financial institutions will be more likely to fully benefit from our identified possible plans of action, and turn disruption to their favor.

5. Overview of Types of Financial Services

In this section, we will give a brief overview of different types of financial services, and discuss how fintech innovations have changed the provision of them.

5.1. Payments

“Since the introduction of credit cards in the 1950s, debit cards in the 1980s and the rise of e-commerce through the 1990s, electronic payments have grown in popularity, displacing cash and cheques. In 2012 they accounted for 68 percent of U.S. transactions in value” (World Economic Forum, 2015, p. 29). Cashless payments have greatly improved payments sector making it more convenient to pay / transfer money without carrying cash, reducing cash management costs for individual and business clients, increasing the traceability and protection. Electronic payments have also made it easier to transfer money globally. Nevertheless, the weaknesses associated with the traditional payment models have been the following:

- **Poor customer experience**
 - Traditional payments require the customers / sender to manually input a large amount of information that in turn takes more time and creates room for error
- **Slow speed**
 - Depending on the route, traditional payments have been time consuming. Global transfers / payments have been particularly lengthy due to complex multistep procedures and many stakeholders included
- **Safety concerns**
 - KYC (Know Your Customer) identifications used to be performed manually, creating room for error
- **Expensive**
 - The costs of traditional transfers / payments have been high. As an example, the average costs of global payments have been estimated to be around 7.68% (World Economic Forum, 2016, p. 47)

Following the markets trends such as dominance of online sales, increased mobile connectedness and growing role of online platforms has further reduced the need for cash and promoted electronic payments. Additionally, the advancements in technology over past years have greatly contributed to the area of payments. Increased mobility has influenced people’s preferences and set new limits. Fintech has brought fresh solutions that have employed the latest technologies and suggested new ways to pay. Some of those solutions like Apple Pay are still drawing heavily on the incumbent financial institutions to make the

transaction, but offers enhanced customer experience interface. On the other hand, digital challenger banks, such as Revolut, offer their own global bank platform with easy payments and transfers.

The innovations in payment sector can be grouped into four areas: (i) mobile payments, (ii) streamlined payments, (iii) integrated billing, and (iv) next generation security (World Economic Forum, 2015).

- (i) **Mobile payments** include a variety of platforms allowing their customers to use a mobile phone as a primary interface for payments. Innovations range from mobile wallets to mobile-based merchant payment solutions. Using smartphone applications like Apple Pay, customers can enhance their payment experience by making it contactless and some would argue safer. On the other hand, applications like a Danish MobilePay also enables users to transfer money to other users by using only their phone number as an information input
- (ii) **Streamlined payments** are location-based or machine-to-machine payments. Location-based payments are based on the geotagging technology, which allows to identify the location of the user and make payment based on such information. Machine-to-machine payments are systems allowing to automate payments. If device is authorized to execute payments under certain conditions, once those conditions are met, it makes automated purchase / payment.
- (iii) **Integrated billing** is an area which includes large number of mobile applications that have been built in a way that integrates the process of ordering and payment. Widely known example of such application is Uber, which enables customers to use single mobile interface to order a car and pay for it with a simple swipe on the phone screen.
- (iv) **Next generation security** has greatly increased the safety of payments by introducing tokenization standards and applying location-based identification / biometrics.

Main differences between traditional payments and new payment solutions lay in the customer experience. Firstly, new mobile based payment solutions offer more convenient way to pay, since there is no need to carry credit cards and / or be in front of a computer to make an online payment / transfer – instead, all payments can be made with very little information and a few swipes on the smart phone. Secondly, the cost of transfer is substantially reduced. Thirdly, the payments are much faster and, in some cases, even instant. Lastly, the safety features employed in the new technologies make payments easier to track and more secure.

	Traditional payment/transfer institutions	Alternative payment/transfer platforms
Description	- Traditionally, individuals could execute physical payments by using cash or credit card - Paying online would require using credit card details or connecting to an online banking platform - Money transfers can also be done by connecting to an online banking interface	Alternative payment platforms enhance customer experience by employing new digital solutions, such as using mobile phones or other smart devices, for payments and money transfers
Advantages	It has historically been more secure facilitator of money transfer	- Fast or instant - Lower costs or free - Easy and convenient to use - Extremely cheap or free
Disadvantages	- Poor customer experience - Slow speed - Safety concerns relating to manual information entries, such as filling KYC forms - Expensive	Safety concerns since personal information needs to be shared with third party

Table 3 - Traditional Payment Institutions compared to Alternative Payments Institutions

5.2. Deposits and Lending

The underlying model under which financial institutions are currently operating has not significantly changed since the financial crisis and is relatively simple. Retail banks still hold its customers' savings and pay interest on their savings in return. Using the saved funds, financial institutions issue loans to borrowers and require borrowers to pay interest on the loan. Availability of loan and size of interest rate are determined by a borrower's risk profile, usually using credit scores. Typically, banks receive higher interest on issued loans than pay on savings to depositors in order to account for default risks and make profit.

Nevertheless, the 2008-2009 global financial crisis has brought a challenge for traditional lending models. Regulators have imposed higher capital requirements on banks, which translated into many banks tightening loan agreements (McWaters, 2015). As a result, a lending gap has emerged, leaving the borrowing market and its participants' needs underserved. In addition to increased pressure from regulators, traditional models and adjudication processes have the following weaknesses:

- **Margin for error**
 - Traditional credit scores leave space for missing suitable lending opportunities
- **Slow speed**
 - Multiple layers of approval limits banks' ability for processing a loan in due time
- **Poor customer experience**
 - Highly manual adjudication processes and high requirements fall short of increasing customers' expectations
- **Low return**
 - Operational inefficiency and reduced risk appetite due to events relating to the global financial crisis has led to low returns on savings

To fill gaps in the traditional model, new lending platforms have arisen, transforming credit evaluation and loan origination. One of the alternative platforms leveraging peer to peer (P2P) model has experienced a rapid growth. These type of platforms use alternative adjudication methods and lean, automated processes to offer loans to a broader base of customers and a new class of investment opportunities to savers. This kind of solution provides customers with low-cost, fast, flexible alternatives to retail banking. While business models of these alternative lenders might be different in certain aspects, most providers directly link borrowers and lenders.

The key characteristics of alternative lending platforms can be clustered into three groups: (i) peer-to-peer (P2P), (ii) alternative adjudication and (iii) lean, automated processes.

- (i) Under the **peer-to-peer (P2P)** concept, legal contracts and online platforms match funds between borrowers and lenders
- (ii) **Alternative adjudication** enables for an assessment of creditworthiness of borrowers based on untraditional metrics, such as social data, rent payments, mobile phone payments, online payments (e.g. credit scoring platform for Chinese borrowers based on search data from Baidu website) etc. (Brian Kreiswirth, 2017). This has proven to be especially valuable for “thin-file” borrowers with insufficient credit bureau history, and small businesses (McWaters R. G., 2017)
- (iii) **Lean, automated processes** – as a result of not having to deal with legacy systems, alternative lending platforms assess and onboard new borrowers and new lenders in a more efficient manner. Thanks to more automated processes, screening and processing is faster and transparent

When comparing traditional and alternative lending models, the biggest differences lie with respect to flexibility and risk allocation. Traditional lending intermediaries or incumbent financial institutions take risks themselves. However, in order to limit risk, these institutions focus mainly on low risk borrowers and even in that case charges hefty fees in the form of interest spread. As a result of such strategy, the needs of risk-prone lenders and high-risk borrowers are underserved by incumbent financial institutions.

Alternative lending platforms, on the other hand, normally provide an online marketplace where money lenders have the possibility to choose a desired risk portfolio. Under such setup, savers can lend capital to high-risk borrowers, while the latter members of the market have access to capital even when their risk profile is relatively bad. In other words, a lending-borrowing equilibrium is reached. Therefore, traditional lending platforms are able to mitigate risks and generate money by taking a cut of loan originations (principal) and ongoing loan revenues (interest).

The following table gives an overview of traditional lending intermediaries and alternative lending platforms, their advantages and limitations.

	Traditional lending institutions	Alternative lending platforms
Description	- Traditional financial institutions hold savings of their clients and provide interest in return - These funds are used to issue loans to borrowers based on their credit score, and earn interest from the borrowers (these	- Alternative lending platforms directly match borrowers with lenders - Contracts exist directly between lenders and borrowers

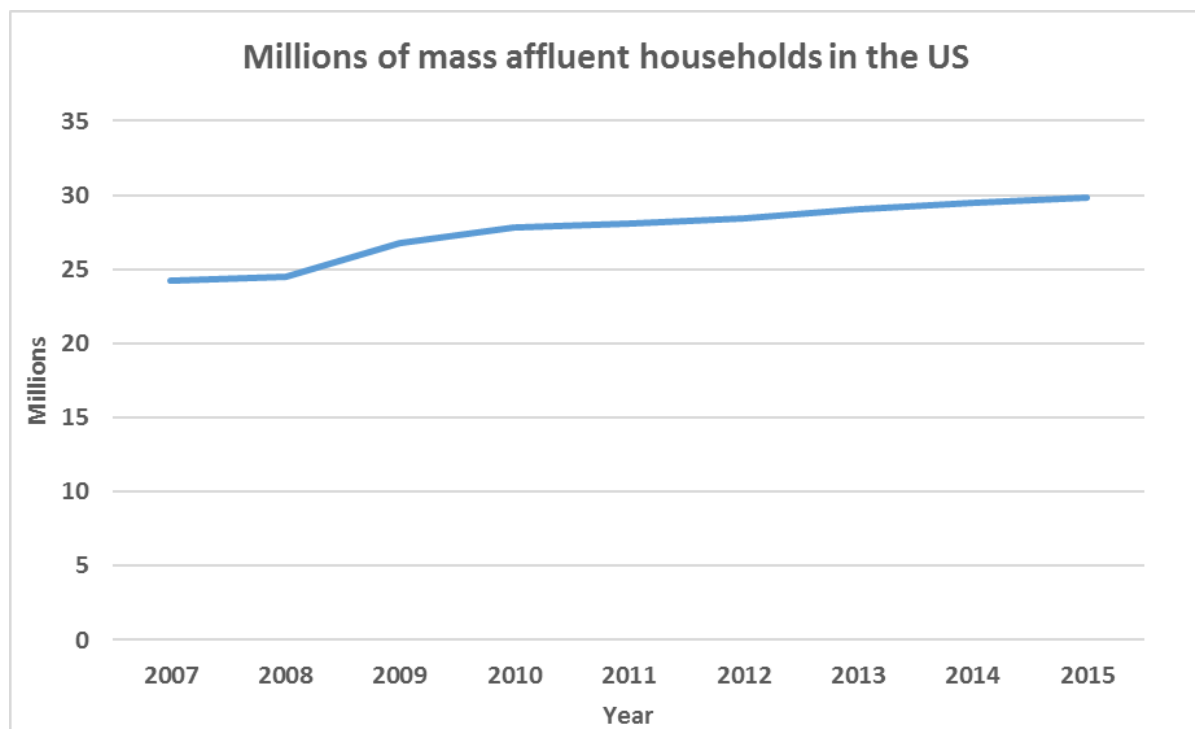
	Traditional lending institutions	Alternative lending platforms
	institutions' return is the difference between interest, also known as the spread)	Revenues are made through origination fees and a fraction of interest payments
Advantages	- Deposit guarantee schemes ensure that all deposits up to EUR 100k are protected all over the EU (European Commission, 2015) - Law of large numbers allows to mitigate individual default risks	- Transparency of risk profiles and lending process ensured for both parties of transaction - Lower transaction costs - Issue of underserved market mitigated
Limitations	- High-risk borrowers excluded from the market - Lender can affect the level of risk and return	- Limited protection of the funds - Higher individual default risk

Table 4 - Traditional Lending Institutions compared to Alternative Lending Institutions

5.3. Investment Management

Investment management is defined as “professional management of different securities and assets, such as bonds, shares, real estate, and other securities” (Investopedia (B), 2018). The aim of investment management is to meet a specific investment objective. To be more specific, investment managers invest money on behalf of their clients with the goal of achieving the highest possible return on investment.

Wealth management industry is made of variety of players, such as private banks, registered investment advisors, bank brokers etc. Traditionally, wealth managers have targeted high net worth individuals (individuals who have a net worth of at least USD 2m) (Klausner, 2013) and ultra-high net worth individuals (those with USD 30m in assets or more) (Hodgson, 2017). In recent decades, the focus has expanded to include mass affluent customers, defined as households with a net worth between USD 100.000 to USD 1m and annual income of at least USD 75.000 (Spectrem Group, 2018). According to Spectrem Group data, the number of mass affluent households in the US has been steadily rising since the beginning of financial crisis, as illustrated in the graph below.



Graph 1 - Change in Number of Mass Affluent Households in the US over time (figure is a production of thesis authors)

The key offerings of wealth managers can be clustered into 3 main groups:

- 1) Advisory – investment allocation, securities analysis, and active money management
- 2) Brokerage – access to rare assets and products, brokerage account management, as well as distribution of wealth products (annuities, insurance products, mutual funds)

3) Value-add services (pension and wealth transfer planning, estate tax and other tax strategies)

As other financial services areas, wealth management industry has been affected by financial innovations. It all began with the loss of customer trust following the events of financial crisis. This, coupled with (i) increasing customer expectations of efficiency, lower costs and personalization, (ii) limited access to services for mass and mass affluent market, and (iii) legacy structures, have created opportunity for new market players. In the sight of this opportunity, a number of innovators, ranging from social trading platforms to automated wealth management, have taken action, providing less costly and more sophisticated alternatives to traditional wealth managers (McWaters R. J., 2015). These innovative solutions for investment management can serve a broader customer base and allow customers to have higher level of control over where their funds are invested and provide better information of investment performance.

The following table summarizes the main innovations within wealth management:

Type of innovation	Key benefits
Automated management and advice	• High-value consulting services on money management and portfolio allocation at low cost based on automated analysis • Automated management of tailored investment portfolio according to personal needs • User-friendly overview and analysis of multiple accounts
Social trading	• Ability to create strategies and portfolios, and share them with other investors • Ability to contribute to and gain from market insights from others
Algorithmic trading	• Ability to build, test and implement trading algorithms with little technical knowledge and limited infrastructure • Access to platform for sophisticated investors to share or exchange their own algorithms with other investors

Table 5 - Overview of Key Benefits of Innovations within Investment Management

As a result of aforementioned innovations within investment management industry, customers can now enjoy several benefits. Firstly, automatization has lowered entry barriers for clients by decreasing minimum investment threshold and management fees, thereby permitting clients with lower net worth to receive financial advice (accessibility and lower cost). Secondly, customers have been empowered as they now have instant access to analysis of their financial position and tools which enable them to easily create and execute new strategies (convenience, transparency and control). Lastly, customers can enjoy a higher degree of customization of services delivered to them.

5.4. Insurance

Investopedia defines insurance as "a contract, represented by a policy, in which an individual or entity receives financial protection or reimbursement against losses from an insurance company" (Investopedia (A), 2018). A term of law of large numbers is particularly relevant in the insurance industry, as companies pool their clients' risks to make payments more affordable for the insured. By employing this strategy, insurance companies also minimize the risk for themselves, as the probability of having many clients (as a percentage of total client number) that need to be reimbursed is lower the higher the client base is.

Insurance is by many considered as a financial services area that has been affected by fintech the least. Nevertheless, over the past decade, insurers have adopted a great number of innovative solutions to better serve their clients' needs. In fact, the insurance industry has been affected by financial technologies virtually across its whole value chain.

Figure 18 below visualizes insurance value chain, while table below it gives an overview of how each of the value chain parts has been affected by innovations.



Figure 18 - Insurance Value Chain (figure is a production of thesis authors)

Insurance Value Chain	Innovative Solutions	Example
R&D / Product Manufacturing	Insurance firms are launching innovation labs to combine technological resources with brand / product managers (McWaters R. J., 2015)	Cooperation between insurance labs and product managers
Distribution	Digital channels, especially in personal lines, are employed, putting significant pressure on traditional brokers / in-person agents White labelling solutions used for distribution partnerships with banks and retailers	Customers can now compare prices and purchase insurance products online by using online aggregators, which may displace traditional distribution channels. The latter event's likelihood is increasing with consumers' shifting preferences

Insurance Value Chain	Innovative Solutions	Example
Underwriting	Advanced statistical models used to understand correlation between risk and measurable factors Pricing risks with collected data (underwriting) have been minimized by employing automatization which contributed to improving speed and accuracy (McWaters R. J., 2015)	Emergence of sharing economy is changing the rules of the game. Pay-as-you-go rentals, shared vehicles and houses are challenging traditional insurance models developed based on one-to-one ownership structure Self-driving cars are emerging which may considerably reduce the risks associated with driving and shift the insurance principal from people driving cars to companies manufacturing cars (McWaters R. J., 2015). However, recent events leading to fatal accidents caused by self-driving cars produced by innovative companies such as Tesla (Independent, 2018) and Uber (Kopyoff, 2018) show that certain innovations may take longer to come to reality (if ever) than initially predicted
Claims	Customer-centric high-touch services deployed to provide differentiated claims experience Manually performed, time-consuming processes are being replaced by digital channels to empower both sides – the insurers and the insured (customers)	User friendly mobile-based solutions to make a claim
Risk Capital & Investment Management	The last part of insurance chain value has been affected not by a particular innovation, but more by a particular group of players. Hedge funds and alternative sources of capital are moving	Insurance linked to financial products such as catastrophe bonds are presenting new pools of capital providing fully collateralized coverage for insurance

Insurance Value Chain	Innovative Solutions	Example
	closer by setting up reinsurers and providing additional funding options for insurers	companies, outside of traditional pools (McWaters R. J., 2015)

Table 6 - Overview of Innovations within Insurance Value Chain

Looking at insurance industry as a whole, we can see challenges coming from fintech startups as well as older industry players. Our case company Revolut has recently launched a new offering for its clients – pay-per-day travel insurance. The startup’s clients can enable this service via an app, and pay for travel insurance as little as 1 GBP per day. Based on the geolocation, Revolut charges its clients for days actually spent abroad (Revolut (J), 2018). Therefore, the clients have access to cheap and hassle-free travel insurance that can be obtained within a matter of seconds. It is noteworthy that the British startup also offers different kinds of insurance, such as device insurance. These as well as other offerings of Revolut will be presented and discussed in more depth in the following sections.

A similar offering to that of Revolut pay-per-day travel insurance is offered by the Swedish telecommunications giant Telia. The company is now offering a worldwide travel insurance of up to 30 days for a single trip for its clients and their family members. The numbers of trips per year is not limited. The insurance plan can be enabled via Telia travel app or by sending an SMS (Telia, 2018).

5.5. Capital Raising

Lending that was presented above is just one of the means how businesses can cover their financial needs. When it comes to larger financial needs, businesses are often facing a choice between issuing shares and underwriting a corporate bond. Traditionally, in both cases capital raising is facilitated by financial institutions such as an investment bank. The primary role of intermediary is to connect the funds of investors with businesses needed capital injection, and execute the transaction at a certain fee. Investors benefit from the expertise of financial institutions in identifying profitable opportunities, while businesses get access to capital (World Economic Forum, 2015).

A seemingly perfectly functioning system of capital raising in fact has the following disadvantages (World Economic Forum, 2015):

- Limited access
 - Various limitations on accessing the capital may exist due to size of business or a weak relationship with investment community
- Untimely supply of capital
 - Delays in funding may appear due to time consuming structuring and fulfilment mechanism in matching the funds with investment opportunities
- Standardized measurement
 - Investment decisions based purely on risk and returns ratio may overlook otherwise attractive options. Startups with breakthrough innovations, but lower returns or higher uncertainty may be left behind the high net worth and minimal risk projects
- Loss of control
 - Key decisions may shift from business to investors
- Potential for inadequate funding
 - Inability of a middleman to collect and allocate required funds to a business may result in insufficient capital raised. In such cases, a company in need for capital might receive lower funding than required and therefore struggle to live up to its full potential

In recent years, new trends of internet-based solutions and increased connectivity have materialized. Together with a shift in consumer behavior and new policies promoting entrepreneurship they have sharply grown the number of new startups. Additionally, following new regulations startups can now increase their number of investors without having to do an Initial Public Offering (IPO). As a consequence of such increase in a number of business searching for the investments, it has become more challenging for the traditional financial intermediaries to do a proper evaluation of all the opportunities available.

An alternative fintech solution to the above-mentioned challenges is crowdfunding. The traditional financial intermediary is being replaced by an alternative funding platform, which creates an opportunity for the businesses and individual investors to connect directly. Under such setup, every investment opportunity can be evaluated by each investor individually allowing to base their decision not only on the profitability, but other criteria too. The role of these alternative funding platforms is not to promote or decide on the investments, but rather present them in a unified view and aid the process of legal structuring. The screening process is also facilitated by the crowd, since for the investment to happen a minimum target has to be collected. As every investor has access to see the progress and current state of the funding, they can make conclusion on what other investors preferences are (World Economic Forum, 2015).

Alternative funding platforms provide solutions that overcome problems associated with traditional financial intermediaries. First of all, these platforms address the issue of limited access that businesses have to the funds, and establish a direct connection between the parties as explained above. Secondly, it makes capital raising process faster. Also, as was discussed, in the alternative crowdfunding platforms funding allocation is not based only on standardized profitability measurements – every investor may therefore choose different criteria. Furthermore, by receiving the funds from a large number of investors the business is less threatened to lose a control over the key decisions than it would be in case of traditional funding coming from a large investment fund. The following table compares traditional financial intermediaries with alternative funding platforms.

	Traditional financial intermediaries	Alternative funding platforms
Description	Financial institution collects money form investors and directs it to selected companies that meet certain evaluation criteria	Alternative platforms only provide a marketplace to connect ideas with potential investors. Investment decisions are done individually with no professional investment advice and only based on a crowd's evaluation (hence name crowdfunding)
Advantages	• Financial institutions have accumulated expertise in investing • Financial institutions can effectively bargain their collective interest, due to aggregated investments	• Direct connection between investors and opportunities to invest (direct control) • Higher returns in case of successful investment • More companies get chances to raise capital

	Traditional financial intermediaries	Alternative funding platforms
Limitations	• Limited access for some companies • Untimely supply of capital • Standardized measurement • Loss of control for companies • Potential for inadequate funding	• The mass choice might be misleading for individual investors • Liquidity of investments is lower

Table 7 - Traditional Financial Intermediaries compared to Alternative Funding Platforms

6. Past to Present

6.1. Investments in Fintech

Financial technologies or fintech in short as definition suggests are the technologies used in financial services. Financial institutions have originally been the main users of such technologies, but more recently substantial number of startups powered with financial technologies have come into the industry. Innovative technologies employed by these incomers have created waves of disruptions in the environment of traditional financial institutions. Over the last 10 years fintech startups have greatly impacted all the above-described areas of financial services (Marr, 2017).

Digitalization has provided new opportunities for the financial startups to innovate financial industry through mobile payment applications, equity crowdfunding, alternative lending platforms, etc. In some cases, these fintech entrants have not only improved and complemented the processes of the incumbent financial institutions, but rather fully replaced the service such as payments provided by the regular banks. Additionally, users are keen to try new services and are more willing to fully switch if the new experience is better. However, traditional banks have struggled to exploit these opportunities due to their preference for sustaining innovation (Desai, 2015).

Accenture estimates that from 2010 until the end of 2017 almost USD 100 billion have been invested worldwide in fintech. In 2017 alone, the investment peaked at USD 27.4 billion and was 18% higher than a year before. Additionally, the number of deals jumped from 1.805 in 2016 to 2.694

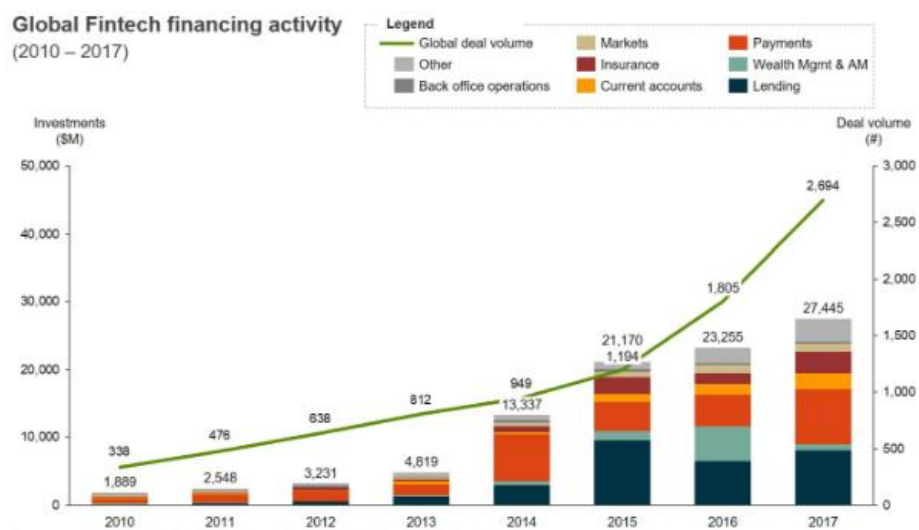


Figure 19 - Global Fintech Financing Activity (Accenture (B), 2018)

in 2017 (Accenture (B), 2018). As illustrated in Figure 19, startups have been present in all of the areas of financial services, but lending and payment type of innovations have received the biggest funding. Out of the two, the highest number of startups emerged within payment sector (despite more or less equal investment in the two sectors in absolute dollar terms), since on average the needed funds for payment startups were lower than those for lending startups (Deloitte, 2017).

According to McKinsey & Company study carried out in 2016, fintech companies were present in every sector of financial services with a clear stand out in payments. More than 60% of the leading fintech companies have targeted retail banking area, while they had less focus on commercial segment and large corporations accounting to 28% and 11% accordingly. Payments sector has attracted the highest number of fintech companies across all customer segments, but retail payments area has been the most popular with 1 out of every 4 fintech disruptors falling into it (Dietz, Khanna, Olanrewaj, & Rajgopal, 2016).

In the meantime, incumbent financial institutions have been under big scrutiny after the financial crisis of 2007-2008. They have been enforced to make major changes in their back offices to comply with new regulations aimed to reduce the likelihood of such crisis repeating itself (Committee on the Global Financial System, 2018). As a matter of fact, incumbent financial institutions have been so concentrated on their structural changes that for far too long they took their customers for granted and did not improve customer experience despite technological advancements within the industry (Webster & Pizzala, 2015). It could be argued that banks have fallen asleep on their assumed sustainable competitive advantage and overlooked the competition coming into play (Dietz, Khanna, Olanrewaj, & Rajgopal, 2016). Additionally, banks have been offering a broad range of services, some of which bring higher profit than others. Payments represent 5-7.5% share of global revenue for the banks and are of relatively low profitability, which helps to explain the lack of incentives to work on customer satisfaction when it comes making payments. On the other hand, payments have always been part of the daily less profitable services that allowed banks to gain access to the customers and potentially benefit from cross-selling other services that have higher profitability, such as lending and financial assets management (Dietz, Khanna, Olanrewaj, & Rajgopal, 2016) (Dietz, Härle, & Khanna, 2016).

The trend has been changing and banks seem to have started realizing the impact that fintech may have on the financial industry (Webster & Pizzala, 2015) (Jones H. , 2017). It has been estimated that in the coming 3 to 5 years incumbent financial institutions might lose around 24% of revenues to fintech startups (Irrera, 2017). In PricewaterhouseCoopers survey of 1308 executives from financial industry, 88% have expressed a fear to lose part of their business to standalone fintech companies, especially in the areas of payments, fund transfers and personal finance (PwC, 2017) (Irrera, 2017). As a matter of fact, the survey identified that fintech startups specializing in payments and money transfer are attracting most of the early adopters. Executives interviewed have also expected 84% of their customers to already be conducting payment activities with fintech companies (PwC, 2017).

The theory of disruptive innovation by Clayton Christensen (1997) explains well why retail sector with particular focus on payment services has been targeted by so many fintech startups. As banks have been

concentrating on higher profitability customers across the financial sectors, most of payments service users that are less demanding have been overlooked. Just like theory suggests, this setup has attracted many new entrants that eventually become disruptors targeting those overlooked customers with more convenient and cheaper solutions (Christensen, 1997) (Christensen, Raynor, & McDonald, 2015) (Dietz, Härle, & Khanna, 2016).

Banking industry has experienced great changes over the years, with the most recent uncertainties presented by digitalization and disruptive startups (Gera, 2015) (Saleh, et al., 2017). Rita Gunther McGrath (2013) suggests that all these changes signal a need for major shift in banks' strategies. Her theory challenges the traditional sustainable competitive advantage and suggests that the industry is moving towards the transient advantage. In addition to the theory, the scholar also suggests a list of key indicators that capture this shift. One of the signs is when the competition comes from unexpected places, which is very true in banking case considering that competition has come from new startups and companies originating in other industries, like Apple Pay (Chowdhry, 2017). 85% of bank executives acknowledge that industry boundaries are not present anymore and that the impact is felt from new paradigms in other industries (Westland, Chakraborty, Viale, & Lillis, 2016). Another signal is that customers are choosing "good enough" solutions that are cheaper and simpler in comparison with the original offer. Fintech companies are suggesting more convenient and cheaper or even free services that lead to quick customer acquisition (Ernst & Young, 2017). Yet the third sign shows that the offers of incumbent companies are no longer exciting for the customers. Already in 2016, 4 out of 10 customers considered themselves to be less dependent on their banks and were excited to see what alternative companies can offer, implying that the relevance and excitement around banks is declining (Ernst & Young, 2016) (McGrath (B), 2013).

All the arguments discussed above are in line with Clayton Christensen (1997) and Rita Gunther McGrath (2013) theories of disruptive innovation and transient advantage, respectively. For our thesis, it is important that empirical evidence supports the arguments of our selected theories, as this justifies the use of proposed theoretical framework. Our theoretical framework will be used extensively in the coming parts of the thesis.

Before moving on to conducting the analysis of Revolut case and answering the first part of the research question, we will first give an overview of digital challenger banks and explain why we have selected the British startup as our case company.

6.2. Overview of Main Digital Challenger Banks

As discussed above, the impact of fintech startups in the financial services industry has witnessed a growing trend. One group of fintech startups whose effect is particularly evident is digital challenger banks. As the name implies, digital challenger bank is an online bank with no physical branches providing certain financial services with the goal of eventually replacing traditional banks. Having performed extensive research, we have identified five most successful digital challenger banks by far:

- Starling Bank
- Monzo
- Atom Bank
- N26
- Revolut

All these digital banks were founded in the EU in the period from 2013 to 2015. Despite their current operations being limited to European countries, several of the banks have global ambitions and plan to expand in the near future. 4 out of 5 challenger banks hold a full banking license, while the 5th bank (Revolut) has applied for it, expecting to obtain the license by the end of 2018. The success of these banks can be explained by several factors. First, their services are free (at least for customers holding a basic account). Second, several of their product features as a minimum are superior or more user-friendly than those of traditional banks. We will discuss the success factors of these digital challenger banks in more depth in the subsequent section.

The following table presents an overview of 5 digital challenger banks, highlighting key differences based on 12 variables / criteria:

Criterion / Bank name (all data collected by 13 May 2018)	Starling Bank¹	Monzo²	Atom Bank³	N26⁴	Revolut⁵
Year founded	2014	2015	2014	2013	2015
Country founded	United Kingdom	United Kingdom	United Kingdom	Germany	United Kingdom
Countries served	England, Wales and Ireland	United Kingdom	United Kingdom	17 European countries ⁶	EU/EEA countries
Countries for expansion	10 European countries by 2020	United States and Ireland	Germany	United States and United Kingdom in 2018	United States, Canada, Singapore, Hong Kong, Australia and New Zealand in 2018
Holds a banking license?	Yes	Yes	Yes	Yes	No

¹ **Sources for Starling Bank:** (Shapland, 2018), (Peyton, 2018), (App Store: Starling Bank, 2018), (Google Play: Starling Bank, 2018), (Connington, 2018), (Rumney (A), 2017), (Carey, 2017), (Proactive Investors, 2018)

² **Sources for Monzo:** (Musaddique, 2018), (Monzo (A), 2018), (Monzo (B), 2018), (Connington, 2018), (Rumney (B), 2017), (Heathman, 2018), (Taylor, 2018), (App Store: Monzo Bank, 2018), (Google Play: Monzo Bank, 2018)

³ **Sources for Atom Bank:** (Atom Bank (A), 2018), (Heathman, 2018), (Atom Bank (B), 2018), (Connington, 2018), (Lunden (A), 2017), (Lunden (B), 2017), (App Store: Atom Bank, 2018), (Google Play: Atom Bank, 2018)

⁴ **Sources for N26:** (N26 (A), 2018), (Buck, 2018), (N26 (B), 2018), (Ohr, 2018), (Sassard, 2017), (App Store: N26 - The Mobile Bank, 2018), (Google Play: N26 - The Mobile Bank, 2018)

⁵ **Sources for Revolut:** (Morgunov, 2017), (Browne, 2018), (Williams-Grut, 2018), (Kennedy (A), 2018), (App Store: Revolut, 2018), (Google Play: Revolut, 2018)

⁶ Belgium, Estonia, Finland, Greece, Ireland, Latvia, Lithuania, Luxembourg, Netherlands, Portugal, Slovakia, Slovenia, Italy, Austria, Germany, France and Spain

Criterion / Bank name (all data collected by 13 May 2018)	Starling Bank ¹	Monzo ²	Atom Bank ³	N26 ⁴	Revolut ⁵
					Application submitted in November 2017, license expected to be obtained by the end of 2018
No. of customers	Over 100k	Around 658k	Around 17k	Over 850k, with the goal of 5m by 2020	Over 1.8m with the goal of 100m in five years
Product features	- Interest on current account - Multiple currency current account - Overdraft - Free transfers to other bank accounts	- GBP current account - Fee-free instant transfers to other bank accounts and between Monzo users - Instant notifications - Spending report	- Fixed rate savings account - Retail mortgages - Business banking secured loans for small and medium-sized businesses	- EUR current account - Interest of up to 1,48% on current account - Free transfers to other bank accounts - Instant fee-free transfers between N26 users	- GBP current account - Euro IBAN account - Multicurrency account - Interbank FX rates - Free bank transfers in 25 currencies - Fee-free instant transfers between Revolut users

Criterion / Bank name (all data collected by 13 May 2018)	Starling Bank ¹	Monzo ²	Atom Bank ³	N26 ⁴	Revolut ⁵
	• Instant fee-free money transfers between Starling Bank users • Bill splitting • Real-time notifications • Spending summary • Free ATM withdrawals • Saving goals • 24/7 customer support	• Free withdrawals of up to GBP 200 a month (3% fee thereafter) • Bill splitting • No bank fees for spending in foreign currency • MasterCard exchange rates offered (slightly worse than the interbank rates) • Overdraft • 24/7 customer support	• No current account available at least until 2019 • No foreign exchange services • 24/7 support	• Free withdrawal in local currency, 1.7% fee on withdrawal in foreign currency (withdrawal for premium account in foreign currency is free) • Overdraft of up to EUR 1.000 with 8,9% interest rate • Personal credit • Insurance • Investment platform • Instant notifications	• £200/€200 free ATM withdrawals per month • Spending analytics • Instant notifications • Bill splitting • Mobile phone and travel insurance • Spare virtual cards • Price alerts • Cryptocurrency trading • Various security features, such as location-based security

Criterion / Bank name (all data collected by 13 May 2018)	Starling Bank ¹	Monzo ²	Atom Bank ³	N26 ⁴	Revolut ⁵
				24/7 customer support	
Pricing	- Free current account for private users - Free current account for businesses	- Free current account for private users - No current account for businesses offered yet	Free savings account	- Free standard current account for private users⁷ - Paid premium current account for private users - Paid current account for businesses	- Free standard current account for private users - Paid premium current account for private users - Paid current account for businesses
Profitable?	- Unprofitable - Expects to break even by the end of 2019	Unprofitable (pre-tax loss of GBP 7,9m in the financial year 2017)	Unprofitable (pre-tax loss of GBP 42m in the financial year 2017)	- Unprofitable - Expects to break even by the end of 2018	- Unprofitable on a yearly basis - Broke even on a monthly basis for the

⁷ In several countries, such as France, customers older than 26 years old need to spend certain minimum amount per month in order to have a free account

Criterion / Bank name (all data collected by 13 May 2018)	Starling Bank ¹	Monzo ²	Atom Bank ³	N26 ⁴	Revolut ⁵
		Every customer brings a loss of GBP 50			first time in December 2017
Market value	- Undisclosed - GBP 70m in funding raised by March 2017	- Market value of GBP 280m (\$336m) as of November 2017 - A total of GBP 106m in funding raised by May 2018	- Market value of GBP 428m (\$593m) as of March 2018 - A total of almost GBP 400m in funding raised by May 2018	- Undisclosed - A total of GBP 258m (\$215m) raised by May 2018	- Market value of GBP 1,42bn (\$1,7bn) as of April 2018 - Fintech unicorn
No. of employees	Around 170	300+	Around 300	380+	Around 350
Rating in App store	4,7/5 (1,8k ratings) (Appendix 1)	4,6/5 (1,3k ratings) (Appendix 3)	2,7/5 (187 ratings) (Appendix 5)	4,8/5 (42 ratings) (Appendix 7)	4,8/5 (1,9k ratings) (Appendix 9)
Rating in Google Play	4,2/5 (986 ratings) (Appendix 2)	4,2/5 (2.642 ratings) (Appendix 4)	2,8/5 (524 ratings) (Appendix 6)	4,4/5 (17.271 ratings) (Appendix 8)	4,8/5 (69.851 ratings) (Appendix 10)

Table 8 - Overview of Digital Challenger Banks

Based on the information indicated in the table above, we argue that Revolut has been the most successful digital challenger bank by far and is well positioned to maintain its position going forward due to several reasons:

- Fastest customer growth
- Most customers acquired
- Highest customer satisfaction (assumption made based on the ratings in App Store and Google Play)
- Most countries served
- Most ambitious, which is well reflected in both the company's actions (expansion into new markets, such as North America and Asia, in 2018) and plans (a target of 100m customers in five years)
- Most trusted by the investing community (investors' faith in Revolut is well reflected in its current valuation of USD 1,7bn, making the startup a fintech unicorn)
- First to break even on a monthly basis
- First and the only one to date to offer several distinctive features, such as interbank rates and cryptocurrency trading, that have had a huge appeal among customers

Therefore, we will use Revolut as a case company in the context of disruptive innovation within financial services industry. We will first explain how Revolut began disrupting the financial services industry. Afterwards, we will identify the key factors that led Revolut to such success. To assist and support our analysis, we will utilize our theoretical framework, consisting of Clayton Christensen's Theory of Disruptive Innovation, The Lean Startup Method, Rita McGrath's Theory of Transient Advantage, Approach of Pricing and Free, as well as Network Effects and Switching Costs.

6.3. Finance 2.0 – the Case of British Fintech Startup Revolut

Revolut, a British fintech startup, was founded in 2015 by two Russians - Nikolay Storonsky, former equity derivatives trader at Credit Suisse and infamous Lehman Brothers, and Vlad Yatsenko, former developer at Credit Suisse and Deutsche Bank. Both founders got to know each other while working for Credit Suisse, eventually deciding to take a different direction in their careers – founding a startup that in April 2018 became the first digital bank unicorn in the UK (Rumney, 2018).

As Nikolay said in his interview to Forbes in the end of 2015, unfair currency exchange rates and high fees charged by traditional banks led him to thinking about offering an alternative to customers (Salter, 2015):

“I thought of the business three years ago. I was travelling a lot and wasting hundreds of pounds on foreign transaction fees and exchange rate commissions which just didn’t feel right. As someone with a financial background I knew exactly the rates I should be getting. As a solution, I tried to find a multi-currency card and was later told it wasn’t possible. But I was determined to make it work.”

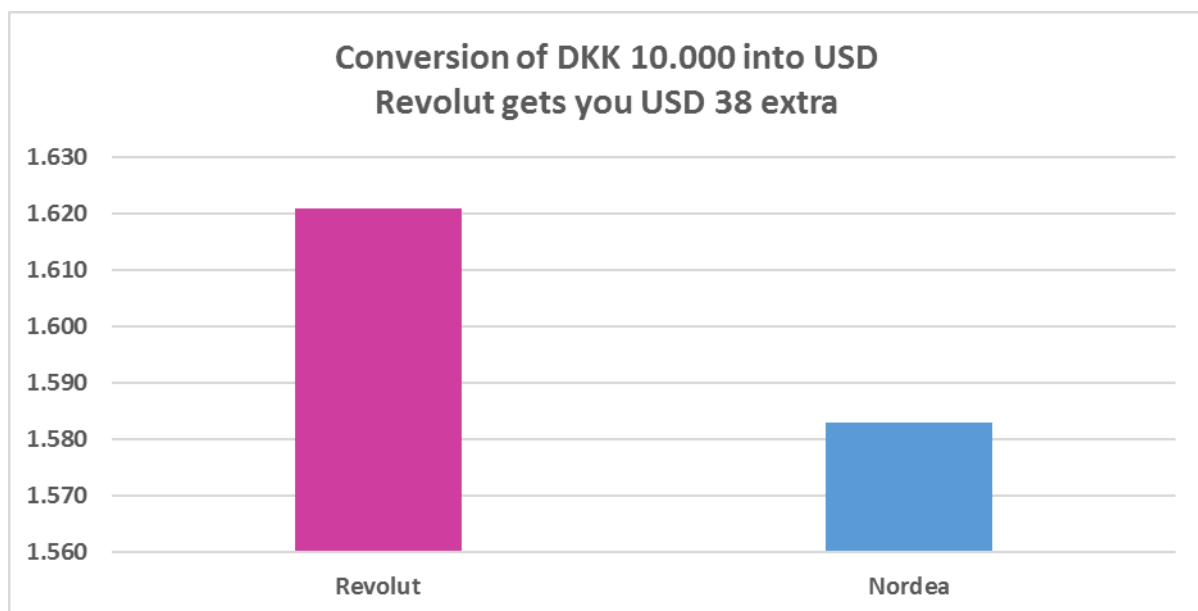
Revolut was founded as a digital banking solution, offering:

- Debit card to perform transactions around the world and online
- Currency exchange at interbank rates, i.e. rates at which banks are exchanging currencies among themselves (no spread)
- Instant, fee-free money transfers among Revolut users and fee-free traditional bank transfers to non-Revolut accounts

The process of opening a virtual account was made fast and simple. Users would only need to download Revolut app to their smartphones and indicate basic personal details, such as their full name, date of birth, residential address. Within a few minutes, the account would be open and operational. Most importantly, downloading the app, opening an account, ordering a debit card, and having the card delivered to your doorstep was all free of charge.

Initially, Revolut users could have their account denominated in three currencies – USD, EUR, GBP (Dillet, 2015). Customers could instantly swap their money between these three currencies at the interbank rates and no fee. It is important to note that spending was not limited to these three currencies and possible in over 120 currencies. When a purchase in other currency, e.g. CHF, was performed, Revolut would exchange buyer’s money at the best possible (read interbank) rate into CHF and finalize the transaction. To put this into perspective, imagine a Dane is planning a holiday trip to the US and has allocated DKK 10.000 to his budget. As at 30 April 2018, the DKKUSD exchange rate

offered by Nordea, a major Scandinavian bank, was 0,1582 (Appendix 11). The interbank rate, however, was 0,1621 (Appendix 12). As the Graph 2 shows, with the budget of DKK 10.000 the customer could buy USD 1.621 via Revolut vs. USD 1.583 via Nordea. Thus, using Revolut could save the customer USD 38 in currency exchange in this case.



Graph 2 - Conversion of DKK to USD using Revolut vs. Nordea

In an interview to Sky News, Nikolay Storonsky was not modest and said that Revolut has been doing everything completely opposite to traditional banks (King, 2018):

“We build world-class tech that puts people back in control of their finances, we speak to our customers like humans and we're never afraid to challenge old thinking in order to innovate.”

Revolut's head of brand, Chad West, shared a similar opinion and responded with the following when asked if traditional banks are adapting their customer offerings to combat your [Revolut] entry in the market (Red Herring, 2017):

“The big banks are doing their best <...> to catch-up, but there is far too much red tape and bureaucracy for them to cause us any problems. If we want to implement a new feature or service to the app, we can have this done and dusted in a week. For the big banks, they'll be looking at a 6-12-month period of consultation and internal bickering! The other advantage we have is that we run every product decision by our community. We listen and learn from them and focus on the areas of banking that matter most to them. Again, ensuring that our customer experience is always central.”

The aforementioned thoughts are well reflected in Revolut's corporate culture (Revolut (D), 2018):

“We are like special forces. We operate in small teams. We identify opportunities. We plan. We execute. We deliver. Fast. Precise. Inevitable. No corporate bullshit. No politics. No red tape. We get things done. We are on a mission. We change the world.”

The following are identified as the startup's core values (Revolut (D), 2018):

- NEVER SETTLE
 - Build things. Achieve great results. Learn from failures. Grow fast. Be proud. Never stop
- STRONGER TOGETHER
 - Believe in power of people. Cross-check your opinions. Create something big together
- BRING THE A-GAME
 - Understand reality. Use logic. Dig to root cause. Design solution. Execute. Repeat

It is from the corporate culture, core values and management lead that great things come to life. And Revolut seems to have it all. One of the areas that the startup has an advantage compared to traditional banks is card delivery. If you are a client of a traditional bank and lose or have your card stolen, you will realize how frustrating interaction with the bank can be. First, you will need to make a call to your bank. If you are lucky and do not need to wait in line for an operator to answer your call, you will spend at least several minutes proving your identity to have your card blocked, in the meantime hoping that no one is stealing money from your account. After convincing the bank to block your card, you will be told that your new card will arrive within several business days. While this sounds reasonable, given that you are on an exotic island, you will however be told that the new card can only be posted to your home address, which is thousands of kilometers away from where you are now and where you need to pay for accommodation, food, and other necessities.

If you are a Revolut customer, on the other hand, you will have a completely different experience in the light of such unfortunate event. All you will need to do is open Revolut app, make a few taps and your card will be blocked within a matter of seconds. Besides, you will not even need to contact customer service to order a new card. This can also be done within the app. Most importantly, Revolut will have your new card delivered within three business days to any part of the world (Revolut (N), 2016).

That being said, it is important to point out that overall Revolut was not superior to traditional banks after its foundation. Although it has gone a long way since then, it arguably still is not. On top of that,

the British fintech startup does not hold a banking license, though it has submitted the application for it in late 2017 (Jones, 2017). We will discuss all of this in greater depth in the following section.

Turning to the business model, Revolut's is pretty simple. The startup started out by offering a free product. Although, as we will discuss later, several fees were levied on some of its services, the startup is still offering a basic version which costs its users nothing. In addition to basic version, Revolut has over time introduced premium and business versions of its product (Revolut (I), 2018).

Having briefly introduced Revolut, we will now apply Clayton Christensen's theory of disruptive innovation discussed in the theoretical framework section to analyze how Revolut began shaking the banking industry.

6.3.1. Revolut and Disruption: Why and How?

6.3.1.1. *The Theory of Disruptive Innovation*

As discussed in the theoretical framework section, there are two types of innovation – sustaining innovation and disruptive innovation. Sustaining innovation targets high-end customers that have great demands with a product or service that is better than was previously. Usually, these sorts of innovations are incremental improvements upon existing products or services. In contrast to widespread thinking, sustaining innovations can also be “breakthrough, leapfrog-beyond-the-competition products” or services (Raynor, 2003, p. 31). It is interesting to note though that sustaining innovation is not limited to product or service, but can happen within an organization, in the form of process innovation. Sustaining innovation strategy implies an improvement of a product or service that can be sold for higher profit margins, and this is where incumbent companies have the necessary incentives and enough resources to take on the sustaining innovation battles. Besides, such type of innovation does not have a prerequisite of shaking up organizational culture and is therefore relatively easily achieved by established companies as sustaining technological innovation can be said to be similar to the expansion of “business as usual”.

Disruptive innovation, on the other hand, is new concepts or ways of delivering value to consumers. This, however, does not necessarily mean that a better product or service is brought to existing customers in existing markets (Raynor, 2003). In fact, products and services that are not as good as existing ones are introduced, subsequently disrupting and redefining the trajectory of existing markets. While possibly less sophisticated, disruptive technologies have their own advantages, such as convenience and / or low price. These benefits find their appeal in other consumer segments, for instance among new or less-demanding consumers. Entrants that eventually become disruptors therefore enter market by targeting those overlooked customer segments, introducing more convenient functionalities, usually at a cheaper price.

If we look at Revolut in mid of 2015, we will see that the startup’s market entry was via the low end of the market. As briefly described in the previous section, the company’s value proposition was simple. They were offering an online account and a debit card. Such product obviously could not find its appeal between the high demanding customers. First, such customer segment is used to having a credit card and benefits attached to it, such as health and travel insurance. Second, they want a reliable banking services provider whose card is accepted in any place around the globe. Third, they do not want to risk being in a situation when they cannot perform physical purchase or make online payment due to service maintenance of banking services provider. Fourth, they want to have a (current) account with an IBAN number to which their employer can pay salary, for instance. Fifth, they want to have a contactless card and make payments in the most convenient way for them, such

as with Apple Pay or Google Pay. Sixth, they want to enjoy the convenience of direct debit or recurring payment features, rather than enter such payments manually themselves at a certain frequency. Seventh, they want to have the possibility of calling customer service at any time in any time zone (i.e. 24/7). The list of needs could go on and on.

However, Revolut could not deliver any of those at the time of its founding in 2015. The startup was not offering a credit card nor a contactless debit card. Its card was not accepted at certain places in Asia, for example, it was running maintenance every once in a while, the bank account itself was not a current account, and therefore did not have an IBAN number. It was not compatible with devices made by large tech companies, such as Apple or Google. Revolut did not allow to enable recurring payments, nor did it offer direct debit feature. The company's customer service was available from 10am to 5pm. Hence, as the startup's product was inferior, initially it could not meet the needs of high demanding customers. On top of that, Revolut was not even offering an account to businesses, an arguably the most demanding customer segment of them all.

Despite being inferior on many aspects, Revolut managed to find appeal in less demanding segment, as predicted by the theory of disruptive innovation. First, Revolut product was absolutely free. Downloading the app, opening an account, ordering a debit card, and having the card delivered to your doorstep was all free of charge. Second, the Revolut app was convenient. Within a few taps in the app, customers could view their account balance, past transactions, current FX rates. In addition, they could instantly freeze or unfreeze their card, and order a new one if the old one was lost or stolen. Third, it had several attractive and cost-effective features. Users of Revolut could make instant fee-free transfers of funds to other Revolut users, they could hold funds in three different currencies (USD, EUR, GBP), and swap among these currencies at interbank currency exchange rates. In addition, they could perform purchase of products denominated in currencies other than those three offered by Revolut, without being concerned about the spread that traditional banks charge them, as Revolut would swap currencies at the best possible rate in the market. Lastly, the startup's customers could withdraw money in the closest ATM without worrying that the ATM is belonging to another bank than their own and that they for that reasons will get charged extra. This is especially appealing to people who travel a lot, as finding an ATM of your banking services' provider might be difficult or even impossible in certain cases when abroad. This, combined with interbank rates, made traveling to countries using different currencies than your own worry-free. It also meant that people would no longer need to queue in their bank to buy foreign currency before going abroad for vacation or any other reason.

Obviously, the less demanding segments are less profitable (or even unprofitable from the point of view of Revolut) than the more demanding ones, which is why incumbent financial institutions overlooked them. As discussed in the theoretical framework section, incumbent companies have the necessary incentives and enough resources to take on sustaining innovations whose profit margins are higher than those of disruptive innovations. In other words, they have many motives to go upmarket, but few or no to defend low-end or new markets that startups are targeting. Such issue even has its own name – asymmetric motivation (Raynor, 2003). The latter motivation closely relates to resource allocation decisions made within established companies, which are highly political processes where the negotiation power of participants (read various departments or business units) influences the outcome of decision. As the business units are generating most of cash, they are more likely to get attention of top management, which is responsible for making budget and drawing company's future strategy, and win the battle of resource allocation. Clearly, managers of such business units are less likely to focus on innovations that can be potentially disruptive, and more likely to invest in sustaining innovations. On top of that, sustaining innovation does not have a prerequisite of shaking up organizational culture, and is therefore relatively easily achieved by established companies. Thus, established companies, focused on extraction of higher profits from more-demanding customers, tend to take little action when disruptive innovation begins to happen.

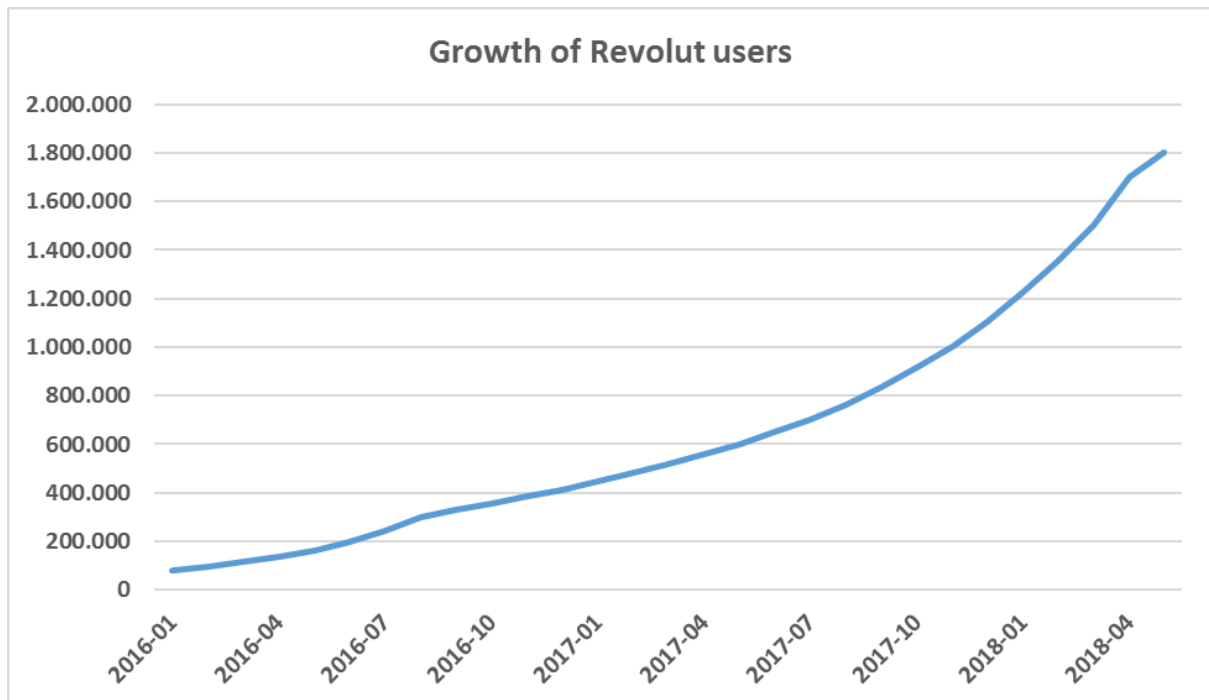
The theory of disruptive innovation predicts that market entrants eventually begin targeting upper segments, delivering the performance that mature companies' mainstream customers want, while at the same time preserving the initial benefits of their products or services that drove entrants' early success. These entrants become industry disruptors the moment when mainstream customers begin to adopt entrants' products or services in higher volumes, and when incumbents' dominance is being challenged.

Relating the latter point to the case at hand, soon after its foundation Revolut started steadily improving its existing products as well as offering new ones, while at the same time preserving the initial benefits that drove its early success, such as free basic account and currency withdrawal or exchange at interbank rates. As the shortened timeline of key Revolut related events shows, the British fintech startup started rolling out new features and making its value proposition more appealing to the high demanding segment. The following table chronologically summarizes the key milestones in terms of product portfolio since the founding of Revolut to date:

Date	Key product launches and introductions
2016 June 17	Contactless debit cards become available. According to research, contactless transactions represented less than 0.2% of all cases of card fraud in the UK. Thus, the upgrade is an achievement in terms of improved customer experience and increased security (Revolut (S), 2016)
2016 August 22	Automatic top-up introduced (Revolut (H), 2016)
2016 October 1	Top up using Apple Pay and Apple Watch are now available, increasing Revolut's compatibility with existing products (Revolut (R), 2016)
2016 October 22	Request money from friends feature becomes available. Collecting money has not been easier (Revolut (J), 2016)
2017 February 7	Current accounts introduced to the UK residents. Users can now receive GBP payments, such as salary, into their Revolut account (Revolut (I), 2017)
2017 July 17	Free personal EUR accounts launched. Users can now receive EUR payments from anyone, anywhere, including a salary (Revolut (F), 2017)
2017 August 17	Business accounts launched. Revolut starts serving the most demanding customer segment (Revolut (D), 2017)
2017 October 17	Recurring payments launched. Users can now make regular payments to cover bills, such as monthly rent or mortgage, alongside being able to regularly send money abroad to family and friends in just a few easy steps (Revolut (G), 2017)
2017 December 7	Cryptocurrency trading platform launched. Customers are now able to buy, hold and exchange Bitcoin, Litecoin and Ethereum in just 30 seconds at the best possible rates (Revolut (J), 2017) (Hughes, 2017)
2018 January 29	24/7 support becomes available (Revolut (A), 2018)
2018 April 23	Euro direct debits introduced (Revolut (F), 2018)

Table 9 - Shortened Timeline of Key Revolut Related Events

As a result of launching new products and adding features to the existing ones, Revolut has started targeting and meeting the needs of the more demanding customers, as predicted by the theory. A good example of this is the launch of business accounts, leading to the acquisition of 16.000 business customers within 3 months, without spending a single penny on marketing (Revolut (D), 2017). Revolut's value proposition for businesses was interbank exchange rates and significant cost savings, which large groups of entities operating across the globe are especially likely to extract (Revolut (P), 2016).



Graph 3 - Growth in Revolut Users (Revolut (I), 2016)

The success of the British startup in acquiring new customers, including demanding ones, is well illustrated in Graph 3 showing total customer growth. An equally important trait of success is that Revolut managed to break even on a monthly basis for the first time in December 2017, claiming to be the first digital challenger bank to achieve this (Browne (B), 2018). Although Revolut is not disclosing its financial statements due to competitive reasons, it can be inferred from its founder's interview with Business Insider that the startup was profitable due to big trading volumes in cryptocurrencies (Williams-Grut, 2018), where Revolut charges a 1,5% markup on the average exchange price for every transaction (Revolut (C), 2018). It can also be inferred that the following months were unprofitable, as, according to Nikolay Storonsky, cryptocurrency trading came off in January, February and March, in line with the tumbling prices of virtual currencies (Williams-Grut, 2018). Given the volatile nature and high uncertainty of cryptocurrencies, Revolut cannot count on such market to be profitable going forward. Lastly, the very fresh news about Series C funding of USD 250m and a 5-time jump in the startup value to USD 1.7bn (including the raised funds) which made it a fintech unicorn, perfectly reflects investors' and market's belief in the bright future of the British fintech startup (Schleifer, 2018).

Although Revolut has widened and improved its offerings, traditional banks and several of their products are still superior. Moreover, incumbent banks can still offer way more than the fintech startups. That being said, it is important to stress that the disruption within financial services industry is just at its infancy and nowhere near the end, and the impact of fintech startups, including Revolut,

can be predicted to become way bigger. Looking forward into the future of Revolut, which will be discussed in greater depth in the later section, a few things deserve particular attention.

First, Revolut applied for a European bank license on 2017 November 8 (Dillet (A), 2017), which it expects to obtain in late fall of 2018 (Čiulada, 2018). The banking license will allow Revolut to offer additional products and provide various other benefits. However, operating as a bank will also mean increased regulatory pressure.

Second, a new set of rules were introduced in the beginning of 2018 across the European Union – under the second Payment Services Directive (PSD2) – that require banks, building societies and other financial providers to let customers easily and securely share their financial data, including transaction history and spending behavior with other banks and regulated third-party providers (Cavaglieri, 2018). The initiative of open banking is expected to create new opportunities as well as challenges for fintech startups, such as Revolut, and other players, such as large tech companies (Facebook and Google). We will discuss these and more in the “Near Future” section of the thesis.

Having explained how Revolut began disrupting the financial services industry, we will now use the Lean Startup Method to show how Revolut has managed to continuously innovate and steadily introduce new and improved products.

6.3.1.2. The Lean Startup Method

As discussed in the theoretical framework section, there are two innovation approaches for startups – traditional method and lean method. According to Eric Ries, the author of “The Lean Startup: How Constant Innovation Creates Radically Successful Businesses” (Ries, 2011), there are several key problems with the traditional innovation approach, which can be blamed for failure of many startups:

- Long lead times in the development process
- High initial costs
- Excessive secrecy with respect to features of a product or service

By following the old innovation approach, companies spend a lot of time developing a product with little or no customer insight. In certain cases, it takes years until an idea is converted into a product. The traditional innovation process where a single launch of a product or service is mainstream means that product’s features have to match customers’ needs, while the product launch has to be perfectly executed. All of this requires high initial investments from companies, in terms of money, resources and time. Obviously, such investments are carrying high risks, as there is little or no space for errors due to lengthy and expensive development process and virtually a single chance to win customers’ trust, also known as hit-or-miss opportunity. Another common feature in the traditional innovation

process is very high confidentiality with regard to product and its features. This Stealth Mode's strategy is meant to safeguard the company's secrets and avoid alerting potential rivals about a market opportunity, which is very important given the nature of traditional innovation process, i.e. high initial costs and long lead time in development (Maurya, 2012).

Contrary to the traditional startup approach, the lean startup method advocates the principles of failing fast and continuously learning, with focus on speed and customer feedback. It favors "experimentation over elaborate planning, customer feedback over intuition, and iterative design over traditional "big design up front" development" (Blank, 2013, p. 7). As mentioned in the theoretical framework section, the idea of lean method is well represented by build-measure-learn loop that guides the key activity of a startup – converting ideas into a product, measuring what customers think about the product, and learning whether to pivot or persevere.

To successfully implement the ideas of lean method, companies need to follow several fundamental principles. First, instead of engaging in months of planning and research, and writing a complex business plan, entrepreneurs should begin with mapping out untested hypothesis about their business idea or model. Second, companies should employ a 'get out of the building' approach to test these hypotheses. By following these principles and focusing on speed and agility, companies will construct a minimum viable product, which basically is a product or service with simple enough features to catch the attention of early adopters and make a solution unique, and straightaway obtain customer feedback. With the input from customers, companies can then, when needed, iterate or pivot their initial offering. The main concept behind the lean method is therefore that a product or service is developed iteratively and incrementally.

While seemingly easy to implement, the lean method has certain preconditions relating to organizational values, culture, as well as leadership. As with anything, everything starts from the top: the company's leadership has to create and advocate an organizational culture and values where failure is not viewed as catastrophe, but rather a means of learning, allowing to iterate and pivot the initial product or business model for it to become a success story.

Relating to the case at hand, the principle of failing fast and continuously learning with focus on speed and customer feedback, advocated by the lean method, is well reflected in Revolut's corporate culture and its core values, a few of which are presented below (Revolut (D), 2018):

- "Build things. Achieve great results. Learn from failures. Grow fast. Be proud. Never stop"
- "Believe in power of people. Cross-check your opinions. Create something big together"
- "Understand reality. Use logic. Dig to root cause. Design solution. Execute. Repeat"

Obviously, if a company wants its employees to follow the corporate values, it needs its management to lead by example. And this is exactly what the management of Revolut is doing. As Nikolay Stronsky's public statements, such as interview with Sky News (King, 2018), show, the founder of Revolut believes in the aforementioned principles of lean startup method:

“<...> we speak to our customers like humans and we're never afraid to challenge old thinking in order to innovate.”

As the timeline of Revolut related events (Appendix 13) suggests, Revolut has been particularly successful in following corporate values and putting the founder's words into practice.

First, the startup has been consumer oriented to continuously meet their needs and improve overall user experience. Several months after being founded, Revolut launched Revolut Community page, where people can and are encouraged to raise questions, provide feedback and share ideas about the startup's offerings (Revolut (E), 2016). The main purpose of such page is find out what consumers want and what issues they have encountered. Almost at the same timing as the introduction of Revolut Community page, the startup announced that it was looking for some users to test their Android app and share insights with the company (Revolut (A), 2016). A third example of deploying customer-focused approach is the involvement of Revolut users in shaping Revolut's brand. A few months into 2018 Revolut announced that, going forward, the startup is going to ask its customers to help them name future products, eventually awarding user with the most appealing suggestion with a monetary award (Revolut (O), 2018).

With the right initiatives in places, actions of Revolut have confirmed that the startup puts their clients' needs first. For example, with the release of the then latest Revolut App version (2.4.3), Revolut announced that users can now export a Revolut account statement via email, sms or social networks, a feature that many customers have been eagerly anticipating and asking for (Revolut (G), 2016). Another example was the announcement of 24/7 customer support, which came as a result of customer frustration with Revolut support (Revolut (A), 2018).

In addition to consumer empathy, Revolut has been continuously innovating and iterating its products. A great example of this relates to launching accounts for businesses. Before offering this feature, in line with the lean method, Revolut started with a brainstorm session, identifying the key pain points of the customers from the customers' own experience. Aware of the value that customer insights bring, they organized a number of focus groups with small- and medium-sized businesses to understand current frustrations and determine their main focus. Based on the insights from the focus groups, Revolut identified five key areas of business banking that were causing the biggest headache

for small and medium firms. It was concluded that customers are most dissatisfied with current banking platforms because they are slow and confusing. Having gained consumer insight, several months later Revolut built a platform for businesses that was visually attractive, extremely fast and user friendly. Throughout every stage of building process of platform, Revolut had a group of testers who were helping the company to identify issues and bugs. During testing process, another drawback that traditional banking platforms have was identified, which had to do with inability to automate payments and link banking platform to certain tools, such as bookkeeping software. Although the platform was already built and ready for launch, Revolut decided to deal with the issue right away and iterate its initial platform for banking. After several adjustments, the updated platform made Revolut business accounts possible to connect to systems of third parties (Revolut (D), 2017).

Another product whose initial version was iterated is spending analytics feature. As indicated in the timeline of Revolut related events (Appendix 13), Revolut introduced spending analytics in November of 2016. The feature instantly shows users how much they are spending, on what, and where (Revolut (D), 2016). However, it appeared that the app in certain instances incorrectly categorizes purchases, leading to distorted breakdown of customer spending. To fix this, Revolut rolled an updated version of Revolut app less than two months later, where the spending analytics feature was adjusted, and the users were now able to manually amend a category of the expense (Revolut (H), 2017).

Based on the examples above, we can conclude that Revolut has been very good at innovating by following the principles of lean method – developing products iteratively and incrementally, with main focus on customer feedback and their needs. This, however, would have not been possible without the right corporate culture and values that are preached by the leadership of Revolut.

Having explained why Revolut has been successful at continuously innovating and steadily introducing new and improved products, we will now use Rita McGrath's theory of transient advantage to show how and why Revolut exploits new launches rapidly rather than focusing on creating permanent competitive advantages.

6.3.1.3. The Theory of Transient Advantage

As previously discussed in the theoretical framework section, traditional strategic theories based on stable environment assumption suggest that once the company finds a competitive advantage, it should focus on making this advantage sustainable, and build barriers to entry to prevent competition. As shown in Figure 8 in the "Theoretical Framework" section, there are five stages of transient advantage – launch, ramp up, exploit, reconfigure, and disengage. Traditional theories suggest that companies should focus on the "exploit" stage, aiming to turn their advantage into a competitive advantage, as well as extract as high returns as possible. The key threat here, according the Rita

McGrath's theory, is however that companies may become too rigid and focus on sustaining their product (read competitive advantage) rather than innovating it (McGrath (A), 2013).

Approach advocated by traditional theories however is no longer suitable due to increased uncertainty and volatility in the business environment, especially in the light of digitalization. According to the theory of transient advantage, the only way to stay competitive is to continuously innovate existing products as well as offer new ones. It is worth pointing out that the duration of exploitation stage during which a company is benefiting from the new product varies across industries. The important thing to understand, though, is that the benefits brought by new products are temporary rather than permanent, contrary to what conventional theories suggest. As a result, the timing of new releases becomes crucial for a company's success and first-movers have temporary advantages over their competitors.

Relating to the case of Revolut, in the previous section we showed that the British startup has been very good at innovating and continuously introducing new products. From the very beginning, Revolut was allowing its customers to exchange and withdraw money at the interbank exchange rates, an offering of arguably a revolutionary nature in the banking industry. However, instead of trying to turn this benefit into a competitive advantage, the startup kept on introducing new features and products, knowing that the advantage created by interbank rates will eventually dissipate when competitors begin providing the same service. It is noteworthy that transient advantage may not necessarily result in increased profits. As it was in the case with the offering of exchange and withdrawal at spread-free rates, Revolut exploited this benefit to build and expand its customer base, which will eventually make the startup profitable. The interbank exchange rates themselves however did not lead to profitability; in fact, this offering was loss-making. We will discuss ways how Revolut can be profitable going forward in the following section.

Another offering which at the time differentiated Revolut from competitors and therefore arguably created a transient advantage for the startup was the introduction of express card delivery. As discussed before, this allowed customers of Revolut to receive a new card anywhere in the world within 3 business days (Revolut (N), 2016).

Third example was the introduction of spare Revolut cards and disposable virtual cards. The former could be linked to the same Revolut account and served as backup for emergency cases (Revolut (C), 2016), while the latter was to be used for online payments and would automatically be destroyed right after an online transaction has been performed, decreasing the likelihood of card details fraud virtually to zero (Revolut (E), 2018).

Another notable example was the introduction of geolocation travel insurance, providing medical and dental insurance worldwide for Revolut users for as little as €1,00 per day (Revolut (J), 2018).

The last example is the launch of cryptocurrency trading platform (Revolut (J), 2017), which has arguably brought the most benefits to Revolut. As mentioned above, high trading volume of cryptocurrencies in December of 2017 allowed Revolut to break even on a monthly basis for the first time (Browne (B), 2018). However, as also pointed out, it can be inferred that the subsequent months were unprofitable, as, according to the founder of Revolut, cryptocurrency trading significantly came off in Q1 of 2018, in line with the tumbling prices of virtual currencies (Williams-Grut, 2018). Although the cryptocurrency trading volume can pick up again given the recent hype surrounding it, such instance allows us to complement Rita McGrath's theory of transient advantage – transient advantage can dissipate not only because competitors start offering the same product or service, but also because the consumers' interest in the offering might disappear even before the competing companies have replicated the product.

To sum up, we see that Revolut has been good at continuously innovating and expanding its product pipeline, and exploiting transient advantages rather than trying to build permanent competitive advantages. While the launch of cryptocurrency trading platform led directly to profitability, even if for a short period at least for now, other launches have helped Revolut expand its customer base, which we argue will eventually help the startup be profitable constantly.

Relating to the latter point, we will now apply approach of Free pricing to further explain how Revolut has been able to consistently acquire new customers and how its business model can make the startup profitable.

6.3.1.4. Pricing and Concept of Free

In the theoretical framework section, we presented Chris Anderson's idea of free product or service, arguing that such pricing strategy is ideal to reach the biggest possible market. For the strategy to work, though, a price has to be set at exactly zero; otherwise many potential customers will not opt for product or service even if the latter is superior to already existing ones in the market. This phenomenon is well explained by the concept of penny gap, stating that there is a big difference between a price of zero and a price above that, even if the two are different by a single penny (Anderson, 2009). When a product or service costs something, even as little as penny, people are confronted with price and made to think whether they really want it. By contrast, when something is offered for free, such decision becomes much easier.

While the strategy of zero pricing is argued to be very efficient in acquiring customers, it is not optimal unless the marginal costs associated with additional user are negligible or fairly low. However, the cost

base is just one side of the picture. The other side is revenue base. As discussed in the theoretical framework section, the strategy of zero pricing can in fact result in company being profitable as revenues can be generated via cross-subsidies. The latter can be grouped into four main categories:

- Direct cross-subsidies
- Three-party market
- Freemium
- Nonmonetary markets

As explained previously, direct cross-subsidy is similar to the old “free” and is characterized by a situation when a consumer gets something for free but wants to buy something more. Freemium, on the other hand, is business model when a company offers a basic version that is free, and one or more paid versions that are better than the basic version.

Relating to the case at hand, Revolut is a type of company that has since foundation been offering online banking services at no cost. Initially, only a standard account was available. All services included in the basic account package, such as bank transfers and exchange at interbank rates, were free. Even opening an account and having the debit card delivered to your doorstep did not cost a penny. Over time, several adjustments to pricing of certain services included in the Revolut standard account were made. First, as can be seen in the timeline of Revolut related events (Appendix 13), a fee of 0,5% on cross-currency transactions exceeding EUR 6.000 per month was levied (Revolut (U), 2016). Second, a monthly free cash withdrawal limit of £200 was introduced, with a 2% fee thereafter being applied (Revolut (B), 2016). On top of that, the spot rates at weekends were subject to a markup: 0,5% markup was applied on major currencies and 1,0% - on other currencies (Revolut (M), 2017).

Despite the minor fees imposed on certain types of services, standard account of Revolut itself has always remained free, helping the startup to successfully enter the financial services’ market. As Graph 3 presented in the subsection on application of the Theory of Disruptive Innovation illustrates, the British startup has been experiencing exponential customer growth, eventually hitting the current mark of 1,8m users (Williams-Grut, 2018). Obviously, the wide portfolio of products available to Revolut users that, as discussed in the previous sections, the startup has been continuously improving and expanding has a lot to do with such startup’s success. Nevertheless, the company’s pricing strategy has played an important role too. As explained by the penny gap, Revolut customer base would likely be significantly lower now if its product was not free, since people would have been forced to think if they really needed an alternative to their then current banking services’ provider.

Over time, Revolut has begun offering additional types of accounts to its users. First, the startup launched premium account costing £6,99 / €8,50 / \$8,50 per month that complements the standard account with additional features (Dillet (B), 2017). Later on, Revolut launched business accounts whose pricing is based on the monthly incoming flows into account (Revolut (D), 2017). The higher the inflow, the more expensive the monthly subscription fee.

The following table gives an overview of account types that Revolut is currently offering, what is included in them, and what each costs to individuals or businesses.

Type of account	Pricing	Features
Standard account	£0 / month	• Free UK current account • Free Euro IBAN account • Interbank FX rates • Free bank transfers in 25 currencies • £200/€200 Free ATM withdrawals per month
Premium account	£6,99 / month	• Free UK current account • Free Euro IBAN account • Interbank FX rates • Free bank transfers in 25 currencies • £400/€400 Free ATM withdrawals per month • Free unlimited FX volumes • Free exclusive Premium cards • Free overseas medical insurance • Free global express delivery • Exclusive priority 24/7 customer support • Exclusive Premium promotions • Free disposable virtual cards
Business account	• Start: £25 / month (<£100k of incoming funds per month) • Standard: £100 / month (£100k–1M of incoming funds per month) • Professional: £1.000 / month (>£1M of	• Interbank FX rates • Hold, receive and send money in 25 currencies • Free, instant transfers to companies using Revolut • Revolut corporate cards • Priority support 7AM to 10PM GMT • Annual contract

Type of account	Pricing	Features
	incoming funds per month)	
Freelancer	£6,99 / month (<£100k of incoming funds per month)	• Interbank FX rates • Hold, receive and send money in 25 currencies • Free, instant transfers to companies using Revolut • Revolut corporate cards • Priority support 7AM to 10PM GMT • Annual contract

Table 10 - Overview of Accounts offered by Revolut

Based on the pricing and types of accounts offered, it can be argued that Revolut is using a hybrid revenue model. First, the startup is exploiting direct cross subsidies. By offering a standard account that is free, Revolut earns a revenue from markups applied on spot rates on the weekend. In addition, it generates money from customers who are withdrawing and exchanging relatively big amounts on a monthly basis. However, the largest cash generator is arguably the cryptocurrency trading feature. In addition to direct cross subsidies, Revolut offers accounts that have monthly subscription fee – premium account and business account (including account for freelancers). As explained in theoretical framework section, a 5% rule exists under the “freemium” business model, arguing that if 5% of all users are premium users, the business is likely to be operating at a profit. While we were unable to obtain an exact number of premium users that Revolut has, we have several reasons to think that this number could be close to or approaching 5%. First, when Revolut launched its premium account, it incentivized its existing users to upgrade to and new users to choose premium account by allowing the first 5.000 people who signed up for Revolut Premium to invest in the startup (Revolut via Twitter, 2017). Given the potential that the startup possesses, which is well reflected in its current valuation that recently made Revolut a fintech unicorn, and the oversupply of users who wanted to participate in Revolut’ crowdfunding (in exchange for startup’s shares) (Revolut (B), 2017), it can be inferred that many premium accounts have been sold. On top of that, Revolut has been successful in acquiring business customers. As mentioned above, 16.000 businesses subscribed for Revolut business accounts within 3 months, although the startup did not spend a single penny on marketing (Revolut (D), 2017). According to information available on the company’s website and online, Revolut now has a customer base of nearly 20.000 businesses (Revolut (B), 2018), which in the end of 2017 was growing at a pace of 40 new businesses a day (Noto, 2017).

However, despite the success stories of acquiring business and premium users, a vast majority of Revolut customers hold standard account that is offered for free. As explained in the theoretical framework section, there is a major drawback associated with zero pricing – when people are offered something for free, they tend to grab it but not to use or consume properly. In other words, no cost implies no customer commitment, which can of course be detrimental for a company's success.

We will therefore now apply the theory of network effects to explain how Revolut is ensuring that its free services do not result in the lack of customer commitment.

6.3.1.5. Network Effects and Switching Costs

As discussed in the theory of network effects, while economies of scale were central in the old industrial economy, networks are now driving the new information economy. The value of a network depends on the number of other people already connected to the network, and it is therefore better to be a part of the bigger network than a smaller one. The idea of the theory is that although features of a product or service play an important role, consumers are choosing not only the product, but also the network.

Consumer expectations and positive feedback are vital in the theory of network effects; a product or service that is expected to become the standard will become the standard. Thus, the product or service can take two directions. First, in the case of high consumer expectations about product, people will start joining the network, increasing its value and therefore creating a virtuous circle. By contrast, if the expectations are low, a vicious circle will be formed, eventually leading to a significantly decreased network, whose remaining users are those with particular preference for the product or those that face high switching costs.

For a virtuous circle to form, a company must overcome the challenge of network externalities, which act as a barrier to entry for creating a new network. Network externalities make all users of an existing network face collective switching costs.

Varian and Hal look at the technology itself to explain how to deal with the issue of collective switching costs (Varian, 1999). They suggest that the new technology can take two directions – revolutionary or evolutionary. In the case of former, a new technology that is superior compared to existing ones is made. However, the technological improvement comes at a cost – as a revolutionary product is usually incompatible with existing products, consumers face high switching costs. By contrast, in the case of evolutionary product, the technology is less ground breaking compared to existing ones but is more compatible. The higher the compatibility is, the lower the switching costs for consumers are. While lower switching costs mean that consumers can more easily adopt a new product, a product that offers fewer new features is less desirable.

In an ideal case, a new technology should improve the product but leave it compatible with already existing ones. Nevertheless, a trade-off of certain extent between technology's compatibility and performance is inevitable.

Relating above to the case at hand, it can be argued that the collective switching costs were relatively low for Revolut, as the services where network effects play a huge role were at their infancy at the time when Revolut was launched. Consider fee-free instant transfers between the users of a network, for instance. Arguably, none of the incumbent financial services company or startup at the time had a large enough network built to create barriers to entry in the form of high collective switching costs.

This, however, does not imply that technological considerations in terms of product compatibility and performance were of no relevance in the case of Revolut. For instance, an individual who is used to using Google Pay would be less likely to adopt a product that is incompatible with it.

When analyzing the offering of Revolut, it can be argued that certain features were of a revolutionary nature at the time of the company's founding. First, Revolut was offering exchange and withdrawal at interbank rates, thereby distinguishing itself from the competitors. Second, the startup's users could fee-free instantly transfer funds to anyone belonging to user network of the company.

In order to expand its network as much as possible, Revolut has over time introduced several compatibility features. First, the startup made topping up Revolut card possible with MasterCard and Visa credit cards (Revolut (V), 2016). Second, it made Revolut account compatible with Apple Watch (Revolut (O), 2016). Subsequently, the company introduced a possibility of top up with Apple Pay and Android Pay (Revolut (Q), 2016). Most recently, the British startup introduced Rev Me feature, enabling Revolut users to send money-request to people holding EU-issued debit card who could then instantly pay back money to Revolut account holders (Revolut (H), 2018).

Revolutionary product with constantly increased compatibility, coupled with positive word of mouth, has assisted Revolut in acquiring many customers over a short period of time. The growing network of users is bringing two implicit benefits to the startup. First, as discussed above, it is increasing collective switching costs for the existing users and making the network more valuable, therefore positioning the company in a virtuous circle. Second, it is signaling the value to the company's customers despite being free, and helps Revolut solve the issue of lack of customer commitment that was discussed in the previous subsection of the thesis.

6.4. Incumbent Financial Institutions' Response to Disruption

Digitalization and disruption associated with it has been proved to bring challenges in many levels of the banking industry. The advancements in technological capabilities have enabled new startups to increase competition to the incumbent financial institutions. As discussed before, surveys present that majority (88%) of financial industry executives are highly concerned that fintech startups can steal their customers and decrease their revenues (PwC, 2017). After doing stress tests of the banks in late 2017, Bank of England publicly urged financial institutions to seriously evaluate the capabilities of fintech startups and not to overestimate the chances of stopping them (Jones H. , 2017).

In response to the Fintech companies disrupting the financial services industry, retail banks have reprioritized their IT spending and tried to keep up with the innovation themselves (Battles & Cox, 2018). Starting in 2015, banks in North America, Europe and Asia seem to have understood the need to react to fintech movements and have on average increased their investments in IT projects by almost 5% (Webster & Pizzala, 2015). In order to reinforce the innovation to combat fintech startups, various financial institutions around the world have chosen to respond in either one or a combination of a few of the following strategies (Battles & Cox, 2018):

- Acquisition
- Direct investments / Incubation
- In-house innovation

Recently banks have been showing more activity in acquiring fintech startups. Considering US top 50 banks, so far only 18 acquisitions have happened since 2013, however 6 of which in the last 6 months. As a matter of fact, only 20% of top 50 banks in US have acquired a fintech company in the past (CBInsights, 2018). The major recent acquisitions include JPMorgan Chase & Co buying WePay, BBVA acquiring Mexican startup Openpay and Swedbank making a deal with PayEx (JPMorgan Chase & Co., 2017) (BBVA (A), 2017) (Swedbank, 2017).

It however has to be noted that banks have been facing certain struggles when integrating the acquired fintech startups. One of the major reasons why integration process has displayed difficulties, was because in many cases the startups were functioning in less regulated environment and integration often demanded compliance with regulations that banks are subjects to (Kocianski, 2017). Additionally, fintech companies are often less organized and have more fluid structure and business model (Wang & Lim, 2018). McGrath's (2013) theory of transient advantage helps to explain this mismatch well. As discussed previously, due to the focus on long term sustainable advantage banks have built rigid structures and processes in their business models, while fintech startups, on the other hand, have been riding waves of transient advantages by continuously innovating, and therefore

preventing rigidity (Wang & Lim, 2018) (McGrath (B), 2013). Furthermore, as rigid banks are not willing to make a quick or in some cases any change, they expect acquired companies to fully and easily fit into the current bank structure instead of smoothly altering it (Wang & Lim, 2018).

Another way that banks are reacting is by directly investing or creating incubators where they assist new startups. In addition to funding, traditional banks also provide guidance and often access to their customers, with some even allocating office space and taking care of other needs of fintech startups. In such a setup banks gain valuable insights about the innovation. The established relationship often becomes a strong basis for the future collaboration with the startups (Battles & Cox, 2018). BBVA, Lloyds banking group and SEB, just to name a few, have already offered mentoring programs to fintech companies (BBVA (B), 2017) (Lloyds Banking Group, 2016) (SEB, 2018).

Finally, traditional banks are also responding to fintech by disrupting themselves through in-house innovations. These innovations are often built around the processes over which banks have control, but not always (Battles & Cox, 2018). One very good example of a bank innovating itself is Singapore based bank DBS. To understand how DBS fostered innovations and in 2016 became the best digital bank in the world, the full story should be explained (Bloomberg, 2016) (DBS, 2016).

In 2009, DBS bank was far from the best. Their customer satisfaction ratings were the lowest in Singapore and the bank was perceived very negatively. After some reorganizational changes a new Chief Operating Officer, Technology and Operations joined the management team and they together started working on getting the bank back on its feet. A major change that has been done, was shifting towards the customer-centric approach. This shift DBS bank has done was game changing – putting customer at the forefront has brought substantial changes, significantly enhancing customer experience. With a clear target to reduce hours required for customers to devote for banking, DBS has identified and implemented a number of initiatives, saving 250 million hours per year for their customers and earning the bank the highest customer satisfaction rates in the country (Bloomberg, 2016). But that was just the beginning of an exciting journey to innovation.

DBS bank has continued to focus on further enhancing customer experience while advancing technologically. By deploying cloud computing, artificial intelligence, biometrics and big data, the bank was disrupting itself before others did (Wright, 2017). One of DBS bank's new offerings was its mobile wallet Paylah! This mobile application allows customers to request and quickly send money, pay bills and shop online. It is also full of newest mobile features such as finger print authentication, connectivity to social platforms and others (DBS, 2018). Another great feature that DBS bank has introduced was POSB Smart Buddy. It is the first watch of a kind in the world to be worn by school children, tracking hand movement activity and allowing children to make payments. When this watch

is paired with the mobile device of parents, it allows parents to manage and monitor their children expenses, set saving goals, as well as track their location and activity (POSB (B), 2018). Another smart solution provided by DBS bank to their wealthy customers is the iWealth application. It is a 24/7 access to all the banking services online including wealth management tools in one place (DBS Treasury, 2018). Finally, the bank has also offered POSB digibank Virtual Assistant on Facebook Messenger and DBS LifeStyle applications. By chatting through these applications customers can ask banking related questions, access their account details including cash balance and even make payments (POSB (A), 2018).

Considering the success of all the above-mentioned innovations, some of the merits could be given to the DBS Asia X (DAX) innovation lab. It is an innovation center where fintech startups and DBS bank collaborate and create new ideas (DBS Innovates, 2018). Nevertheless, it could be argued that even more credits of the success should be given to the reason behind the decision to open the innovation lab, which was a major shift towards customer centric approach and a strong commitment to fintech. As presented before, by concentrating on improving customer experience, the bank has focused on the areas that matter for customers. It is a key that DBS bank has been willing and successful in changing the culture inside the organization (Gee, 2016) (Bloomberg, 2016). As chief innovation manager from DBS explained, “innovation has nothing to do with technology – this is about people and behavior” (Gee, 2016). What is most impressive is that such a rigid organization as DBS was capable of accepting much higher uncertainty by making it a safe place to fail for their employees (Gee, 2016) (Bloomberg, 2016).

To summarize the above, it can be concluded that incumbent financial institutions have reacted differently to the challenges brought by digitalization. Nevertheless, one common conclusion could be drawn that the cultural change has played a key role in a success of implementing the innovative ideas.

The following subsection will present Second Payment Service Directive (PSD2), a recent initiative of the European Union aimed at promoting “open-banking”. In order to give a good picture of the financial services industry in the near future, it is important to consider and understand how such legislations change the market dynamics and who benefits from them.

6.5. Second Payment Service Directive (PSD2)

In 2017 the Second Payment Service Directive (PSD2) has been passed by the European authorities with the deadline to translate it into national regulations taking effect from 13th of January, 2018 (European Commission, 2017). This directive is an initiative in the EU banking sector with the aim to foster increased security, innovation and market competition. It demands banks to open up and share their customer information with third parties. In addition to giving access to their customer data, banks are now obligated to allow those third parties to initiate payments from their customer accounts. Of course, all of the above is only possible if the third party has a customer's permission to gain access to their bank account details and make direct payments from those accounts (Botta, Digiacomo, Höll, & Oakes, 2018).

Taking complex PSD2 in more details, it can be separated into 3 pillars.

The first pillar is mainly focusing on transparency, enhancement of customer rights and tightening of the reporting standards of the banks. This pillar takes into account the pricing transparency and assures that no price discrimination is used between customers and third parties.

The second pillar ensures high level of security. It establishes an obligation for strong customer authentication. For most of the electronic payments, a two factor / step authentication is required (Gaynor, 2017) (Botta, Digiacomo, Höll, & Oakes, 2018).

Finally, the third pillar regulates the access to accounts. It sets the technological standards by which incumbent financial institutions have to provide access to their customers' accounts, so that other third parties could reach information and initiate the payments (Botta, Digiacomo, Höll, & Oakes, 2018).

Currently only the first pillar is in the stage of execution, while the second and third are scheduled to take effect in Q3 of 2019 (Botta, Digiacomo, Höll, & Oakes, 2018). Therefore, for now the visible effect of PSD2 is quite limited, but once fully implemented it is expected to disrupt the payment service sector to a very high extent. Naturally, fintech startups will be benefiting from such directive, because of their innovations and agility in adapting, but more importantly large tech companies will be able to leverage the regulatory changes. While smaller fintech startups are only gaining the trust of their customers, large technology companies have already established brands, trust and can manage enormous amounts of information (Kullar, 2018). Therefore, it is important to also consider how large tech companies may in the future take advantage of the change in regulations, which will be done in the "Near future" section of our thesis.

6.6. Sub-Conclusion of Past to Present Section

In the Past to Present section, our combined theoretical framework was applied to the case of British startup company “Revolut” to address the first part of the research question of why and how disruption of financial services industry began in the 21st century.

The section started with a quantitatively supported argument that fintech startups have received a lot of investment and started causing a great deal of concern to the industry incumbents. Subsequently, a thorough analysis of main digital challenger banks, a group of fintech startups whose disruptive effect on the financial services industry has been particularly evident, followed. Based on the analysis, Revolut was selected as the case company for: having achieved the biggest customer base, highest customer satisfaction, fastest growth, widest market presence; offered most distinctive product features; and obtained highest investing community trust. On top of that, the British startup company has set the most ambitious goals for the future among its competitors.

In determining the reasons of why disruption began, our analysis showed that historically incumbent financial institutions have focused on sustaining type of innovations. Such innovations typically are incremental improvements to the existing offering that target the most demanding and profitable customers. Sustaining type of innovations are “convenient” to engage in and relatively easy to achieve for traditional banks, as they normally are a mere extension of “business as usual”.

By focusing on the high-end customers, incumbents of financial services industry have overlooked and underserved the less demanding segments. Due to latter reason, Revolut, among other fintech startups, has engaged in disruptive innovations and entered the financial services market by targeting those overlooked customer segments. With simplistic value proposition and zero pricing, the British startup has attracted customers from the aforementioned segment and built network that eventually made its offering even more valuable. Our analysis revealed that Revolut’s right leadership values and corporate culture preaching ideas of the lean method, such as viewing failure as a means of learning, were the key success factor of the startup company.

By avoiding long lead times, high upfront investments, staying close to the customer, and viewing failures as a way of learning, Revolut has been continuously innovating and treating innovations as a transient advantage. In fact, the acknowledgement that innovations cannot impose high barriers to entry and build long-term competitive advantage in the era of digitalization, and that innovations’ positive effect eventually dissipates, has also played an important role in making Revolut’s journey a success.

Our analysis also revealed that majority of incumbent financial institutions have struggled to innovate in response to digital disruption, mainly due to their unfitting corporate culture and leadership values which are ideal for engaging in sustaining innovations but inhibit disruptive innovations. Nevertheless, a success story of Singapore based bank DBS showed that rigid organizations like traditional banks can be transformed through a change in leadership and its values.

7. Near future

7.1. Revolut

We will now look at Revolut in the near future. In particular, we will consider the advantages and disadvantages of obtaining a European Banking License. In addition, we will have a look at what features the company has in its pipeline, and explain why we have not focused on cryptocurrencies and their potential future effect on the British startup. Third, we will outline what opportunities and challenges the aforementioned Second Payment Service Directive (PSD2) can bring to Revolut as well as other digital challenger banks. Lastly, we will summarize Revolut expansion plans in terms of markets served, number of customers, and headcount. It is however important to stress that we are not going to make predictions; instead, we will discuss the startup's plans and identify potential effects of these.

7.1.1. European Banking License

As mentioned above, Revolut applied for a European Banking License in late 2017 which, according to most recent news, the Bank of Lithuania should grant to the company in the end of 2018 (Čiulada, 2018). The European bank license will bring several benefits and drawbacks to the British startup, which we outline in the two following subsections.

7.1.1.1. Benefits

One of the key advantages of obtaining a European Banking License is the protection of customers' funds that comes with it. Under the European Deposit Protection Scheme (EDPS), each customer's funds of up to EUR 100.000 will be covered by the EU. Therefore, current and future customers of the British startup will no longer need to worry about their money going bust in case of Revolut's bankruptcy, and will be able to safely and confidently store higher balances in their Revolut account. After all, it can be argued that few people if any would be brave enough to substitute their bank with a startup that does not hold a banking license and therefore does not protect their funds. Hence, the number of customers fully replacing their traditional banks with Revolut is likely to rise as a result of the banking license being obtained.

Another advantage of holding a banking license is that Revolut will be able to provide additional banking services, which would not be possible otherwise. The British startup has announced that once the banking license has been obtained, it will begin issuing personal loans, pay interest on deposits, and allow overdrafts (Revolut (N), 2017). Relating to the theory of disruptive innovation, these services will help Revolut meet the needs of the most demanding customer segment, further increasing the company's impact on the financial services industry.

7.1.1.2. Drawbacks

Despite the aforementioned benefits, a banking license implies higher regulatory pressure which will result in increased compliance costs. For instance, Revolut will need to perform a more extensive Know Your Customer (KYC) procedure than before. A banking license also means that Revolut will be operating under same rules as traditional banks and other digital challenger banks that have already obtained a banking license.

Besides, the European Banking License is only valid within the EU and EEA countries. While this may not be a direct drawback, it means that Revolut will need to partner with local banks in other markets, such as Australia or Canada, if and when it decides to provide full banking services, as is about to happen with N26, another digital challenger bank, that will soon be entering the US market (Reuters, 2018).

7.1.2. Features in the Pipeline

Revolut is planning to introduce several new features that are likely to make the company overall more attractive. First, it is expecting to introduce Revolut Wealth, a feature that will allow the company's customers invest their funds into stocks, indexes and exchange traded funds (ETFs), alongside a variety of other financial instruments (Revolut (K), 2018). Second, the British startup is about to launch secondary cards, which are effectively a product that allows parents to give a card to their kids and then watch their spending and do some parental controls. For example, parents will be able to set up the settings to such that their kids cannot withdraw from ATM or spend any money on alcoholic beverages (Williams-Grut, 2018). Third, Revolut is about to launch peer-to-peer lending to match individual lenders with people who want to borrow, which, according to the company's statement, could on average save 50% in borrowing costs (Revolut (N), 2018).

According to previously discussed ideas of Rita McGrath's theory of transient advantage, these launches will create a new wave of transient advantage for Revolut, and help the company expand its customer base, which sooner or later should start bringing profits to the company.

7.1.2.1. Cryptocurrencies and Rationale for not Focusing on their Future Effect

In addition to aforementioned features, Revolut is planning to add Ripple (XRP) and Bitcoin Cash (BCH), alongside the current Bitcoin (BTC), Litecoin (LTC) and Ether (ETH), to its cryptocurrency trading platform (Revolut (K), 2018). As discussed in the part about Revolut in the past to date, high trading volume of cryptocurrencies in December of 2017 allowed the company to break even on a monthly basis for the first time (Browne (B), 2018). However, as also pointed out, we inferred that the subsequent months were unprofitable, as, according to the founder of Revolut, cryptocurrency trading

significantly came off in Q1 of 2018, in line with the tumbling prices of virtual currencies (Williams-Grut, 2018).

Due to volatile nature and high uncertainty of cryptocurrencies, we are not going to speculate and predict the effect on Revolut of introduction of additional cryptocurrencies to its crypto trading platform.

7.1.3. PSD2

As presented above, the Second Payment Service Directive (PSD2) passed by the European authorities took effect from 13th of January, 2018. This directive will ultimately require banks to open up and share in a secured manner their customer information with other banks and regulated third-party providers.

The PSD2 is likely to present new opportunities and bring challenges to Revolut as well as other fintech startups, which we outline in the following subsections.

7.1.3.1. Opportunities

The ability to collect customer data from other financial institutions will help Revolut and other fintech startups to identify potential customers and offer them better deals than those of traditional banks (Sassard, 2017). In addition, it will make the process of switching a financial services' provider easier. The words of Anne Boden, the CEO of digital challenger bank Starling Bank, illustrate this point very well (Kennedy (B), 2018):

“Information is currency and you should be able to use your data in a focused way. You could choose to share your spending data with mortgage providers and we will KYC (know your customer) using open banking to fill in forms for you. But it is your choice, not our choice.”

Relating to above, filling out KYC form may not be that big of a deal for an individual. However, the opposite is true when it comes to small, medium and large corporations operating across the globe. Collecting necessary data from each of the entities and getting the forms signed by authorized individuals requires a lot of manpower from both headquarters and subsidiaries, making such seemingly unimportant thing as KYC a major factor when deciding of whether to switch for a new financial services' provider. Therefore, legislation of PSD2 may help fintech startups to acquire more customers, including the most demanding ones, who, as pointed out in the theory of disruptive innovation, are the most profitable and attractive customer segment.

7.1.3.2. Challenges

The PSD2 is likely to incentivize large tech firms to become more active in the financial services' industry. This, given such companies' track record of efficiently managing enormous amounts of data

and well utilizing it, can result in an increased competition not only for traditional banks, but also fintech startups including Revolut.

As Antony Jenkins, who served as the CEO of Barclays from 2012 until 2015, pointed out, it is “uncertain as to whether a tech giant or small fintech firm was more likely to benefit the most from open banking. <...> What is certain is there is going to be disruption” (Browne (A), 2018).

We will therefore discuss several scenarios of how PSD2 may affect actions and plans of the large tech companies in the following section.

7.1.4. Markets, Customers, and Staff

As indicated in the table summarizing digital challenger banks, Revolut has set ambitious plans. In particular, by the end of 2018 the British fintech startup plans to (King, 2018):

- Tap into the markets of United States, Canada, Singapore, Hong Kong, Australia and New Zealand
- More than double its number of employees (from 350 to 800)

In addition, Revolut is targeting 100m customers during the next five years.

It is important to note that here we outlined the company’s plans, rather than evaluated their likelihood.

7.2. Large Tech Companies

Features such as Apple Pay, Google Pay Send (used to be known as Google Wallet) and Amazon Lending are just a few examples of how the big tech companies are stepping into the banking industry (Apple, 2018) (Google, 2018) (Soper & Wang, 2017). As Rita McGrath argues, their entrance is blurring the lines of traditional banking industry and constructs new competitive environment – arenas (McGrath (A), 2013). And even though it could be argued that big tech companies have not posed big threats to incumbent financial institutions in the past, the future brings high uncertainty. The shift towards a more “open banking”, due to requirements set forth via Second Payment Service Directive (PSD2) introduced before, creates new opportunities for these large technology companies (Arnold, 2018). Since the banking industry is currently undergoing substantial changes, we will discuss several opportunities and scenarios that big tech companies may undertake. But first, we are going to consider why these companies might create even higher threat to traditional banks than fintech startups.

For a number of years, fintech startups have been confronting incumbent financial institutions with their agile business models. Nevertheless, the main challenge they had was building positive reputation and a well-known brand. Large tech companies, by contrast, already have their brands and

reputation established. As a matter of fact, if such companies decided to start providing financial services, they could utilize their well-known brand and reputation to acquire customers. Another advantage big tech companies have is that they already have experience in working with copious amounts of data, which could be a challenge for small startups. Additionally, these tech companies hold massive amounts of personal information about their customers. This is a big advantage in the age of personalized services as using such data would allow to make banking more tailored to the individual needs of each customer (Kullar, 2018). Furthermore, big tech firms also have enough of money to make substantial investments and devote human resources to undertake big projects compared to smaller startups (Arnold, 2018). This is very important for the innovations that might require big investments at an early stage. All these advantages make large tech companies more than capable of re-disrupting the financial services industry in the near future.

As McKinsey & Company suggests, banking can be split into two types of activities: “manufacturing” and “distribution”. Manufacturing, or the core processes, includes the main banking activities like financing and lending that are considerably harder for the tech companies to perform. On the other hand, distribution activities are comprised of origination and sales point, or ways to access and use the services, which are more accessible and easier mirrored by the outside companies (Dietz, Lemerle, Mehta, Sengupta, & Zhou, 2017) (Blackwell, 2018). We will now present several scenarios of how large tech companies may increase its presence in the financial services industry.

7.2.1. Scenario 1 – Focus on the Distribution Side of Banking Activities

In one of the scenarios, large tech companies might benefit from the shift towards “open banking” by focusing on the distribution side of the banking. Regulations such as PSD2 are making it much easier for the large tech companies to “free ride” underlying bank activities by only offering different interface for the customer or integrating it into their platforms. Since many of them are becoming platform-based businesses, which offer a range of services and / or products built on one platform, the integration of payment services would only enrich these business platforms. Furthermore, McKinsey & company argues that large tech companies in often cases are better positioned than traditional banks to cover the distribution side of the banking, which at the end of the day is about two times more profitable than the core (manufacturing) part (Dietz, Lemerle, Mehta, Sengupta, & Zhou, 2017) (Birch, 2018). Such scenario creates a risk for incumbent financial institutions to become only utility providers of background operations, especially in the sector of payments (Accenture (A), 2018).

7.2.2. Scenario 2 – Partnership with Incumbent Financial Institutions

In the second scenario, large tech companies could form a partnership with incumbent financial institutions. Google is one of the tech companies that recently announced their interest in partnership with banks, rather than rivalry against them (Taylor, 2018). The company expects to partner with banks and in this way easily promote Google Pay payment interface to their customers. On top of that, banks are looking for the best solution to their customers and customer-centric view of Google could enhance banks' customers' experience. Hence, in the short run, it would be beneficial for both sides to partner up. Looking further into the future, this could enable large tech companies to position themselves for providing broader financial services or to fully move into banking. Therefore, partnership in the longer run does not look to be promising for banks and, as a result, they are expected to be hesitant or careful when forming one with large techs (McWaters & Galaski, 2017).

7.2.3. Scenario 3 – Provision of Complete Banking Services

In the third scenario, large tech companies could fully provide banking services at both "manufacturing" and "distribution" levels. Given their size, available funds, capability to innovate and reach to market, big tech firms could individually enter banking industry at a full scale. Nevertheless, this scenario is less likely, because, first of all, most of the profits can be caught already at the distribution level, which implies that the increased revenues from providing services at the manufacturing level would not justify greater risks (Dietz, Lemerle, Mehta, Sengupta, & Zhou, 2017). Second, becoming a bank would mean that a company must comply with all the complex regulations. As tech companies by far have been acting relatively freely, it would be difficult and costly to suddenly establish relevant procedures and structures to enforce increased compliance (McWaters & Galaski, 2017) (Arnold, 2018). Finally, according to McKinsey & Company research, banks are still perceived as the most trusted entities when it comes to safely placing money, making the task of fully replacing banks more difficult for the large tech companies (Dietz, Lemerle, Mehta, Sengupta, & Zhou, 2017).

Considering current banking environment combined with regulations like PSD2 that make it easier for the third parties to enter the financial services industry, a scenario where large tech companies are taking a passive role and not trying to leverage the opportunities is rather unlikely. It is expected that at least some of the large techs will make a move and step into the banking industry or separate sectors of it such as payments (World Economic Forum, 2017).

Based on the above, it can be said that big tech firms are well positioned to re-disrupt the financial sector which agrees with the most likely scenarios discussed above that predict large techs' entry into the banking industry. These considerations are taken into account when providing a key

recommendation to incumbent financial institutions and discussing options for them in the following section.

7.3. Sub-Conclusion of Near Future Section

In the Near Future section, we presented Revolut's short term plans and what effect they may have on the startup company. In addition, we gave an overview of likely near-future developments in the financial services industry as a result of changes in the legal and regulatory environment.

Our analysis showed that Revolut is likely to keep on innovating at high pace, which is reflected in the startup's pipeline; a high number of new offerings, such as Revolut Wealth, should allow the British startup to enjoy a transient advantage in the near future. In addition, we determined that the European Banking license, once obtained, will bring both benefits and drawbacks to the company. However, the advantages of holding the license should outweigh the downsides associated to it. Furthermore, we determined that Second Payment Service Directive (PSD2) is likely to benefit Revolut along with other fintech startups, but have a negative impact on the incumbents unless they adapt.

In addition, our analysis presented that large tech companies, such as Facebook and Google, are likely to make a significant impact on the financial services industry and may even take over the role of disruptors from fintech startups as a result of general market shift towards "open-banking" caused by the aforementioned PSD2. This scenario is likely as large tech companies already have a big customer base, hold well recognized brands, as well as possess the right skills and capabilities to engage in cross selling and make their existing users to opt for financial services that could potentially be fully provided by them in the near future.

Having illustrated how the near future in financial services industry may look like, we will now provide a key recommendation to industry incumbents and discuss three options that traditional banks would likely be able to successfully utilize following the implementation of our recommendation.

8. Suggested Response to Disruption for Incumbent Financial Institutions

In the previous segments of the paper, applying our theoretical framework to the case of British startup company “Revolut”, we answered the first part of our research question of why and how disruption of the financial services industry began in the 21st century. In this section we will provide a recommendation to incumbent financial institutions on how to react to disruption. Given that our recommendation is implemented, banks will have three different ways on how to successfully approach innovation. We will discuss these options in depth in this section.

8.1. Key Recommendation: Creating a Corporate Culture where Innovation is Encouraged

As discussed throughout the paper and following the theory of disruptive innovation, the incumbent financial institutions over the time have positioned themselves to serve more demanding customers who are usually also a more profitable customer segment. Such positioning meant that banks have focused on sustaining type of innovation which aims to improve the current offerings and extract more profits from premium users. As a consequence, traditional banks have gradually started to underserve less demanding and less profitable customers. In other words, incumbent financial institutions have lost a customer-centric view and instead focused on something that was more certain and allowed to achieve higher profitability in the short run. Additionally, in contrast to Rita McGrath’s theory of transient advantage (McGrath (A), 2013), most banks believed that they had sustainable competitive advantages and kept on building their strategies on it. However, as the author explained, the industry of financial services has shifted towards transient advantage, but the banks did not realize it on time and now are finding themselves competing in arenas with previously overlooked fintech startups. Furthermore, according to the lean startup method, since most of incumbent financial institutions have perceived innovative products as something that had to be fully developed before launching them in the market, they regarded disruptive innovation too costly and too risky to engage in. To be more precise, the leadership of banks had no incentive to make any major innovation, since it would have long lead times in the process of development, large upfront costs associated with it and therefore carry a high overall risk. As a result, majority of leaders of incumbent financial institutions have advocated a culture that discourages employees from engaging in disruptive innovation projects.

All of the above factors have placed most of the incumbent financial institutions in a situation where they are now facing new competitors and are struggling to keep up with the demands of their customers. We argue that the lack of right initiatives and appropriate action was due to the traditional

banks' rigid corporate culture and philosophy that have continuously suppressed disruptive innovation. On the other hand, there are examples where the right changes have made. For instance, Singapore based DBS bank has successfully changed its culture and has been titled the most innovative digital bank. As leadership of DBS bank explained, all the changes in the organization happened only after the leaders committed to a cultural change (Bloomberg, 2016).

To provide a recommendation to traditional banks, it is worth looking at the principals outlined by Clayton Christensen's theory of disruptive innovation. As presented previously, Clayton Christensen argues that having the right team on its own does not ensure successful execution of the task at hand, because companies have capabilities that exist independently of the people who work within them (Christensen, 1997). These capabilities are the internal company processes, according to which employees are taught to turn input into output and organizational values that affect how managers and employees make corporate decisions.

We therefore argue that incumbent financial institutions need to change their corporate culture and values so that the ideas associated to the lean startup method would be preached, allowing these institutions to benefit from digitalization. The right culture should foster innovation and view mistakes as a means of learning. Instead of being deterred from engaging in new disruptive innovations by high failure risk and associated costs, banks should deploy a strategy where such failure bears little cost and happens at an early stage of the innovation process. In addition, the initial failure should not prevent companies from further attempts to innovate; instead, it should be viewed as a lesson that can be incorporated into future iterations of the product or service.

As Lean startup method by Eric Ries (2011) suggests, the innovation should be a process of multiple small launches that allows to test the idea at an early stage and therefore reduces the lead times and associated costs. Getting a negative feedback from the market at an early stage would save money and time, but most importantly it would give an opportunity to learn and improve the product or service through iteration or pivoting, maintaining a customer-centric view. Preconditions that have been outlined in the lean startup method also support the notion that resource allocation, leadership, culture and organizational values are the key components in developing a continuous innovation approach. The leadership of the banks therefore need to create and advocate an organizational culture and values where failure is not viewed as tragedy, but rather a means of learning, allowing to iterate and pivot the initial product or business model for it to become a success story.

Finally, Rita McGrath, in line with the aforementioned theories, also argues that innovation needs to be a constant process, supporting our recommendation to the traditional banks.

To sum up, we consider the change in philosophy and culture of incumbent financial institutions to be key for successful innovation. Implementing this recommendation through changes in organizational processes, values and the approach of leadership would provide banks a long-term solution rather than just a quick fix in the era of digitalization. We argue that if the proposed change was executed, a number of options could be successfully implemented by the banks. We present these options in the next section.

8.2. Available Options

In the previous section we have provided the recommendation on how banks can create positive environment for changes and adoption of innovations. Since various banks are advanced differently in the process of financial technology adoption and have different philosophies on how to innovate, we will now discuss the options that they have. We will present three possible actions that incumbent financial institutions could take depending on their current situation and preferences for future development. We will start by presenting the option of engaging in a partnership with fintech startups and / or large tech companies. Secondly, we will discuss the option of acquiring fintech startups. Finally, we will present in-house innovation as the third viable option for incumbent financial institutions.

8.2.1. Option 1 – Partnerships

Partnership is one of the options how incumbent financial institutions can take advantage of financial technology advancements and shifts in regulation. These partnerships could be formed with fintech startups or large tech companies or both.

8.2.1.1. *Partnership with Fintech Startups – Benefits*

Although partnerships between fintech startups and traditional banks in the past have been unsuccessful due to the banks' long lead times, inflexibility and similar constraints (Crosman, 2017) (Broughton, 2017), we argue that such partnerships can be an effective option if banks follow the recommendation regarding cultural change presented before.

Partnership with fintech startups would not only benefit banks in the short run by allowing them to take advantage of PSD2, but it would also open doors to broader integration of financial services' innovations in cooperation with startups.

In fact, such partnerships could benefit both parties, because incumbent financial institutions have great strengths that can be brought into the deal. First of all, they already have large existing customer base, which is often not the case with fintech startups who are only at an early stage of building it. Secondly, banks enjoy a relatively low cost of capital, which allows them to take up riskier or less

profitable projects. Additionally, they are the institutions that provide broad range of services, while fintech startups are often initially concentrating on a specific service. And although incumbent financial institutions are highly regulated, having a banking license provides a certain degree of protection to the customers (such as deposit insurance) and permits the banking license holders to provide a full spectrum of financial services (Lumley, 2018) (Silicon Valley, 2017). On top of that, majority of fintech startups themselves have a goal of eventually obtaining a banking license. Therefore, the fact that financial institutions are exposed to more regulations due to banking license should not be viewed as a huge drawback.

Fintech startups, by contrast, have their own strengths in the areas where banks might be lagging behind. To begin with, fintech startups have capabilities of generating innovative ideas at a faster pace than banks. Additionally, they are also much more agile when it comes to implementation of those ideas. Banks have historically been rigid and even when following our recommendation suggested before, they would still be constrained by the regulations and relatively complex organizational structure. Furthermore, startups have also proved to be rapid at online customer acquisition that could benefit banks, as the whole marketplace is shifting towards digitalization and therefore new future customers may solely be attracted through online channels. Even more, startups' online and mobile application designs proved to be attractive and user friendly. Finally, a combination of huge amount of data possessed by the banks and fintech startups' capabilities of utilizing insights from data analytics leads to a win-win situation for both parties (Lumley, 2018) (Silicon Valley, 2017).

By combining their strengths, incumbent financial institutions and fintech startups would be able to provide a broader range of services with tailored, user-friendly online interfaces. Partnerships with fintech startups would help banks to follow a more customer-centric approach and potentially build a new business model that would be more competitive in the current business environment. At the same time, it would allow startups to expand their user base and broaden their offerings. Most importantly, such partnerships would most likely benefit the previously underserved customers, a customer base that traditional banks by far have treated as the least profitable and therefore paid little or no attention to.

8.2.1.2. Partnership with Large Tech Companies – Benefits

As discussed before, the liberalization of banking industry through the initiatives of “open banking” via PSD2 is expected to create opportunities for large tech companies. In the “Near Future” subsection about large tech companies above, we presented several future scenarios for these companies and argued that there is little chance that large tech firms would take a passive role in the light of PSD2. As a matter of fact, a number of large tech companies have already begun moving into banking

industry by trying to implement financial services into their “platform” based business models (Apple, 2018) (Google, 2018). Since PSD2 is enabling third parties to access the data of banks’ customers and since large tech firms have trusted brands in order to receive customer consent, there is little that banks can do to stop them from serving their customers. In such a situation, a partnership could foster more open collaborations and potentially bring benefits to both parties.

As in the case of partnerships with fintech startups, incumbent financial institutions can bring same strengths into the partnerships with large tech companies, while big tech companies, such as Google, Facebook or Amazon, in addition to high capabilities of generating ideas, offering user friendly solutions and effectively analyzing data, can offer the traditional banks access to a large customer base through different channels. Since majority of banks’ customers are already using the services of large techs, banks could benefit from partnerships by promoting enhanced experience to their customers. At the same time, big tech firms would benefit from such partnerships by obtaining access to more customers and their financial data which would enable them to engage in cross selling of advertising services more effectively.

Combining the strengths of banks and large tech companies would quickly capture the benefits of “open banking” in the sector of payments. We also argue that collaboration would not be limited to the payments sector and innovative solutions would over time spread into other areas of banking industry. Although the effect of partnerships between incumbent financial institutions and large tech companies should be assessed on a case-by-case basis, in general it should bring benefits to both parties and even more to customers, through more innovative and personalized solutions. Most importantly, as in the case of partnerships between fintechs and banks, such collaborations would most likely benefit the previously underserved customers, a customer base that traditional banks by far have treated as the least profitable and therefore paid little or no attention to.

8.2.1.3. Partnership with Fintechs and Large Techs – Drawback

Whether they formed a partnership with fintech startups or large tech firms, traditional banks would arguably not have the ability to make decisions on behalf of their partners. This is a drawback of engaging in a partnership that requires particular consideration, especially when cooperating with big tech companies that might have considerably more leverage than startups when it comes to drawing agreements and “calling the shots”.

8.2.2. Option 2 – Acquisition of Fintech Startups

Historically, incumbent financial institutions have not been particularly active in acquiring fintech startups which, as we explained before, was mainly due to the challenges arising when integrating them into existing set-ups of the banks (Wang & Lim, 2018). We therefore argue that recommendation

of changing corporate culture and values of banks provided above plays a key role in making acquisitions of fintech startups a feasible and successful option for the future.

8.2.2.1. Acquisition of Fintech Startups – Benefits

In general, the acquisition is a way of gaining control over the assets and decision-making power of other companies. In the case of banks, we would expect that they could fully acquire selected fintech startups and therefore gain control over them. Given that incumbent financial institutions followed our recommendation, they would be able to quickly integrate the acquired startup and speed up the innovation process. Such option would also allow to obtain new resources and competences that could be challenging to gain otherwise. Fintech startups already have people who are experts in their fields and competences to drive innovative processes. Additionally, from the profit generation point of view, even if the acquired entity did not contribute to increased profits, it would potentially help to keep the banks' customers from using other fintech companies' solutions and avoid the drop of revenues associated to that.

8.2.2.2. Acquisition of Fintech Startups – Considerations and Limitation

However, a potential acquisition target should be carefully evaluated to ensure that it can help the incumbent financial institutions to fulfil their service needs and foster innovation. Despite all the benefits, acquisitions could also bring financial liabilities to the banks. As a matter of fact, when buying a startup, banks should not overpay, because that could cause lower or negative return for the shareholder value in the long run. Nevertheless, as theories argue, mistakes (wrong acquisition decisions) are a means of learning that lead to better decisions in the future.

Even as we argue that by changing their corporate culture incumbent financial institutions would become much more effective in incorporating acquired fintech startups, there is another limitation related to the availability of the targets. Since most of the fintech startups are not publicly listed, they might not be for sale, making the option of acquisition less feasible. Starling bank is just one example of instances when a fintech firm has been approached by investors multiple times, but rejected their offers and publicly stated that the company was not for sale at any price (Heathman, 2017).

8.2.3. Option 3 – In-house Innovation

The last option that banks have is in-house innovations. As previously discussed, historically incumbent financial institutions struggled with in-house innovations because of strict boundaries in operations, lack of freedom and limited resources allocated to disruptive innovations. Therefore, for this option to be feasible, we need to emphasize the necessity of implementing the recommendation of changing corporate culture and values provided before. The cultural change is a critical point here,

as it would change the approach and capabilities of the banks and prevent them from falling into the same trap over and over again (Kocianski, 2017).

8.2.3.1. In-house Innovation – Benefits and Considerations

In-house innovations would bring great value to the incumbent financial institutions, since they allow to expand knowledge, generate new competences and gain full control over the process of innovation and innovations themselves. However, at first it could be relatively difficult for the banks to gain knowledge over how to innovate without losing the sight of customers' needs, but this knowledge can be accumulated over time by starting with little steps at first. Following the lean startup model by planning the development of innovations in multi stage settings and reaching out for customer feedbacks after each stage, the banks would be well positioned to quickly learn and develop competencies. Additionally, having a full control over this process from the very beginning would allow them to set and ensure a desired level of service quality. Furthermore, all the gains from innovations would fully belong to banks.

Singapore based bank DBS, as previously discussed, is an excellent example of how in-house innovations should be approached and utilized by a well-established organization like traditional banks. In line with our recommendation, DBS bank has started with a shift in its culture promoting failure as a way of learning, eventually engaging in incremental innovations while carefully listening to what customers want.

8.3. Sub-Conclusion of Suggested Response to Disruption for Incumbent Financial Institutions Section

In this section, building on the analysis made earlier in the thesis, we provided a key recommendation to incumbent financial institutions on how they should respond to the disruption caused by fintech startups such as Revolut. Our recommendation concluded that a change in leadership values and corporate culture is needed, so that the ideas associated to the lean method would be advocated at all levels of a company.

We also presented three different ways how incumbent financial institutions could, following a successful implementation of our key recommendation, effectively innovate and respond to the industry disruption. We noted that the suitability and attractiveness of each option to various incumbent financial institutions can differ depending on an incumbent's current capabilities to innovate as well as preference for future development.

The first suggested option for incumbents of the financial services industry was to form a partnership with fintech startups, large tech companies, or both. We found that a partnership with startups would

not only benefit traditional banks in the short run by allowing them to take advantage of PSD2, but it would also open doors to broader integration of financial services' innovations. By contrast, a partnership with large techs would allow incumbents to gain access to larger customer base through different channels and benefit from large techs' capabilities of generating ideas, offering user friendly solutions and effectively analyzing data. The key drawback we identified was that traditional banks would not have control and decision-making power over their partners, especially when cooperating with large tech companies.

The second option for incumbents was an acquisition of fintech startups, which would allow them to obtain new competences, resources and innovative ideas, as well as claim the ownership of already existing innovations. However, we noted that the availability of such option may be limited in reality, as many fintech startups have publicly declared that they are not available for sale.

The third option was in house-innovation. Compared to the two other options, this option could take a longer time to yield positive results. On top of that, in addition to cultural change, lean method would be critical to apply in day-to-day operations when developing innovations. However, all the gains resulting from in-house innovation would remain within the company.

9. Conclusion

In answering our research question of why the disruption of financial services industry in the 21st century began, what the key success factors of fintech startups in achieving it were, and how the incumbents of the industry should respond, a combined framework of recent theories was applied to the case of British startup company Revolut.

Our theoretical framework consisted of (i) Clayton Christensen's Theory of Disruptive Innovation, (ii) Eric Ries' Lean Startup Method, (iii) Rita McGrath's Theory of Transient Advantage, (iv) approach of Pricing and Free, as well as concepts of (v) Network Effects and (vi) Switching Costs. Our thesis did not utilize conventional theories such as Michael Porter's Five Forces, SWOT and PESTLE to answer the research question, providing a founded critique of them for being unable to keep up with the current business trends and failing to explain emerging business phenomena such as industry disruption.

Our case company Revolut was selected after performing a thorough analysis of main digital challenger banks, a group of fintech startups whose disruptive effect on the financial services industry has been particularly evident. These challenger banks were compared on a number of variables, such as customer satisfaction, pricing, product features, presence in various markets, number of customers, profitability and near-future plans. The British fintech startup Revolut was chosen as the case company as it was judged to have been the most successful digital challenger bank by far due to various reasons, such as biggest customer base, highest customer satisfaction, fastest growth, most distinctive product features, widest market presence, as well as highest investing community trust. On top of that, the British startup company has set the most ambitious goals for the future among its competitors.

In explaining the reasons of why disruption began, our analysis showed that incumbents of financial services industry have focused on sustaining innovations, which target high-end customers that have great demands with a product or service that is better than was previously. Usually, these sorts of innovations are incremental improvements upon existing products or services that can be sold for higher profit margins, and this is where incumbent companies have the necessary incentives and enough of resources to prevail. Besides, sustaining innovation does not have a prerequisite of shaking up organizational culture, and is therefore relatively easily achieved by established companies as such technological innovation can be said to be similar to expansion of "business as usual".

By concentrating on improving their offered products or services for the most demanding customers which are commonly also the most profitable, established companies overshot the needs of other segments or simply ignored the less-demanding customers. Revolut, among other fintech startups, on the other hand, has engaged in disruptive innovations and entered the financial services market by

targeting those overlooked customer segments. Although Revolut's value proposition initially was simple and its offerings could not catch the attention of high demanding customers, the British startup offered more convenient functionalities at a zero price, helping it to find appeal among the overlooked less profitable customer segments and build its own network of users, which eventually would make the startup's offering even more valuable.

Since its foundation, Revolut has been successfully innovating its existing services and launching new offerings. Our analysis showed that the key factors of successful innovation are explained by the startup's correct approach towards innovation that is preached by the company's leadership and reflected in its corporate values. Under such approach, coined the lean startup method, mistakes are viewed as a means of learning, quick launch is followed by iteration or pivoting of the initial offering, and innovations require relatively little upfront investment, making the overall risk low. Such method is the complete opposite of traditional innovation approach, where innovation is associated with long lead times in the development process, high initial costs, and excessive secrecy with respect to features of a product or service.

Our analysis also revealed that another important factor of Revolut's success was the way innovations are treated – rather than trying to build high barriers to entry and make each innovation a long-term competitive advantage, Revolut viewed it as a transient advantage that would eventually dissipate and instead focused on continuously making new innovations.

Given the findings outlined above, our thesis provided a key recommendation to incumbents of the financial services industry on how they should respond to the industry disruption caused by the fintech startups like Revolut. Our key suggestion was to change leadership values and corporate culture, so that the ideas associated to the aforementioned lean method would be advocated at all levels of a company.

Our thesis also presented three alternative options that traditional banks, following a successful implementation of our key recommendation, would have in order to successfully innovate and respond to the industry disruption. Our such reasoning is empirically supported by the success stories of innovative incumbent banks, like Singapore-based DBS bank, following a change in their attitude towards innovation. It is important to highlight that the suitability and attractiveness of each option to various incumbent financial institutions can differ depending on an incumbent's current capabilities to innovate as well as preference for future development.

The first suggested option for incumbents of the financial services industry was to form a partnership with fintech startups, large tech companies, or both. Our analysis showed that large tech companies,

like Facebook and Google, are likely to take over the role from fintech startups and be the new industry disruptions going forward in the light of “open-banking” initiatives, such as Second Payment Service Directive (PSD2), which ultimately requires banks to open up and share in a secured manner their customer information with other banks and third-party providers. Discussing specific advantages of such option, our thesis found that a partnership with startups would not only benefit traditional banks in the short run by allowing them to take advantage of PSD2, but it would also open doors to broader integration of financial services’ innovations. By contrast, a partnership with large techs would allow incumbents to gain access to larger customer base through different channels and benefit from large techs’ capabilities of generating ideas, offering user friendly solutions and effectively analyzing data. The key drawback of partnership is that banks would not have the ability to make decisions on behalf of their partners, especially when cooperating with large tech companies that might have considerably more leverage than startups when it comes to drawing agreements and “calling the shots”.

The second option for incumbents was acquisition of fintech startups, which would allow them to obtain new competences, resources and innovative ideas, as well as claim the ownership of already existing innovations. However, the availability of such option may be limited in reality, as many fintech startups have publicly declared no intention of selling themselves.

The third option was in-house innovation. Compared to the two other options, this option could take a longer time to yield positive results. On top of that, in addition to cultural change, lean method would be critical to apply in day-to-day operations when developing innovations. However, all the gains resulting from in-house innovation would remain within the company.

10. Reflections

In this section, we will reflect on our thesis. First, we will put our findings and theoretical framework into wider academic and business context. Second, we will consider what could have been done differently in terms of methodology, and how we would have potentially approached our research question in that case. Third, we will discuss what new research areas our analysis and findings are pointing to.

10.1. Academic and Business Implications

As our analysis has shown, traditional strategy theories are proving to be less and less relevant these days. Conventional arguments, such as intra-industry competition, high barriers to entry, stable business environment and high level of certainty, are getting less valid in the light of product and service digitalization.

In the meantime, new ideas such as network effects and continuous incremental innovation are emerging. Businesses, especially those operating mainly in digital realm, should start turning their attention to new business models and pricing strategies. As we have shown, certain type of companies these days can be profitable despite providing their core services for free. This can be achieved via cross subsidies, by applying freemium pricing model or engaging in three-party markets. In addition, firms should be aware of high importance of networks, and understand that consumers are choosing not only a product, but also a network. Third, businesses should be customer-centric, paying close attention to what their clients' pain points as well as demands are. By focusing on customers' demands and having right corporate values as well as leadership, which does not regard failure as catastrophe, but rather way of learning, companies could successfully engage in continuous innovation, which has proven so vital in the banking sector, creating transient, rather than permanent competitive, advantages.

10.2. Methodology – the Method Not Used

Our thesis attempted to determine the reasons for disruption of the financial services industry in the 21st century and identify success factors of startups in achieving it. To do so, a case-based approach, using secondary data from various sources, such as journal articles, reports and studies of professional consultancies and academics, as well as widely recognized and credible websites, was used.

Reflecting on our choice of methodological approach, a different path could have been taken. To explain why disruption began in the financial services sector, we could instead have conducted surveys and done focus group interviews. We could have performed surveys, asking respondents to explain what are the main criteria when determining an optimal financial services' provider and what kind of

features they find most valuable, for instance. This would have allowed us to identify main focus areas, which we would have approached to a greater extent during the focus group interviews. It can be argued that such approach would have allowed us to evaluate main arguments of our theoretical framework, and determine whether customers deem network effects and price set at zero as key factors. In addition, by identifying the main pain points of customers, we would have gained relevant insight into areas where incumbent financial institutions should be focusing, and been able to provide recommendations for them accordingly.

That being said, such approach would have not allowed us to explain what reasons led to disruption in the industry, as was done in our thesis by applying Clayton Christesen's theory of disruptive innovation to the case of Revolut. In addition, such method would potentially have not helped us to identify the cause root of issues that traditional banks face – flawed and outdated corporate culture and values. As our analysis showed, traditional banks need to change their mindset and approach innovation differently. Therefore, we would have potentially missed out on one of our key take away points and focused on other areas in our recommendations' part instead.

Due to these reasons and given our research objectives, we argue that the case-based approach which our thesis has used was optimal in this case.

10.3. Suggestions for Future Research

Our thesis showed that recent initiatives, such as the Second Payment Service Directive (PSD2) passed by the European authorities, requiring banks to open up and share in a secured manner their customer information with other banks and regulated third-party providers, are changing the rules of game within financial services industry. We have argued that, in light of such legislative changes, large tech firms, such as Amazon, Google or Facebook, are likely to become a significantly more active player of the financial services industry, and therefore put more pressure not only on traditional banks, but also fintech startups. We therefore argue that such potential changes in status quo are creating ground for an interesting research area, where for instance the potential impact or future role of large tech firms in the financial services industry could be analyzed in a great depth.

Another interesting path of future research could be a retrospective study of industries other than banking sector, which were also disrupted by technological innovations. We argue that it would be relevant to investigate what strategies successful incumbent industry players followed in response to challenges that disruption had brought. In addition, it would be interesting to analyze the ways in which disruptors brought chaos to other industries, and whether such phenomena as network effects and pricing set at zero were also some of the key drivers of the success of disruptors of other industries.

11. Bibliography

- Accenture (A). (2018). *PSD2: HOW CAN BANKS SEIZE THE OPPORTUNITIES?* Retrieved from Accenture: <https://www.accenture.com/us-en/insight-psd2-opportunities-banks>
- Accenture (B). (2018, February 28). *Global Venture Capital Investment in Fintech Industry Set Record in 2017, Driven by Surge in India, US and UK, Accenture Analysis Finds*. Retrieved from Accenture: <https://newsroom.accenture.com/news/global-venture-capital-investment-in-fintech-industry-set-record-in-2017-driven-by-surge-in-india-us-and-uk-accenture-analysis-finds.htm>
- Anderson, C. (2009). *Free: The Future of a Radical Price*. New York: Hyperion, New York.
- Aouad, A. (2018, April 23). *Uber Eats is the fastest-growing meal delivery service - but it faces stiff competition ahead*. Retrieved from Business Insider: <http://www.businessinsider.com/uber-eats-is-the-fastest-growing-meal-delivery-service-2018-4?r=US&IR=T&IR=T>
- Apple. (2018). *Apple Pay*. Retrieved from Apple: <https://www.apple.com/apple-pay/>
- Arnold, M. (2018, February 04). *Finance chiefs warn on Big Tech's shift to banking*. Retrieved from Financial Times: <https://www.ft.com/content/d9b3d79e-0995-11e8-8eb7-42f857ea9f09>
- Battles, R., & Cox, M. (2018, April 10). *RESPONDING TO TECHNOLOGY DISRUPTION IN WHOLESALE BANKING*. Retrieved from International Banker: <https://internationalbanker.com/technology/responding-to-technology-disruption-in-wholesale-banking/>
- BBVA (A). (2017, April 24). *BBVA advances its fintech strategy with the acquisition of Openpay*. Retrieved from BBVA: <https://www.bbva.com/en/bbva-advances-fintech-strategy-acquisition-openpay/>
- BBVA (B). (2017, March 09). *BBVA Momentum goes global, expands to support 100 companies*. Retrieved from BBVA: <https://www.bbva.com/en/bbva-momentum-goes-global-expands-support-100-companies/>
- Birch, D. (2018, January 02). *Forget banks, in 2018 you'll pay through Amazon and Facebook*. Retrieved from Wired: <http://www.wired.co.uk/article/banks-data-tech-giants>
- Blackwell, R. (2018, January 04). *The tech giants are coming for your customers. Be ready*. Retrieved from American Banker: <https://www.americanbanker.com/news/the-tech-giants-are-coming-for-your-customers-be-ready>
- Blank, S. (2013). *Why the Lean Start-Up Changes Everything*. *Harvard Business Review*.
- Bloomberg, J. (2016, December 23). *How DBS Bank Became The Best Digital Bank In The World By Becoming Invisible*. Retrieved from Forbes: <https://www.forbes.com/sites/jasonbloomberg/2016/12/23/how-dbs-bank-became-the-best-digital-bank-in-the-world-by-becoming-invisible/#2ef3b1bf3061>
- Botta, A., Digiaco, N., Höll, R., & Oakes, L. (2018, January). *PSD2: Taking advantage of open-banking disruption*. Retrieved from McKinsey & Company: <https://www.mckinsey.com/industries/financial-services/our-insights/psd2-taking-advantage-of-open-banking-disruption>

- Brian Kreiswirth, P. S. (2017, February 16). *Using alternative data to evaluate creditworthiness*. Retrieved from Consumer Financial Protection Bureau: <https://www.consumerfinance.gov/about-us/blog/using-alternative-data-evaluate-creditworthiness/>
- Broughton, K. (2017, November 08). *The good reason why banks make bad fintech partners*. Retrieved from American Banker: <https://www.americanbanker.com/news/the-good-reason-why-banks-make-bad-fintech-partners>
- Browne (A), R. (2018, January 11). *Europe's banks brace for a huge overhaul that throws open the doors to their data*. Retrieved from CNBC: <https://www.cnbc.com/2017/12/25/psd2-europes-banks-brace-for-new-eu-data-sharing-rules.html>
- Browne (B), R. (2018, February 26). *Digital banking start-up Revolut breaks even as it prepares global expansion*. Retrieved from CNBC: <https://www.cnbc.com/2018/02/26/fintech-lender-revolut-breaks-even-as-it-prepares-global-expansion.html>
- Cavaglieri, C. (2018, April). *Open banking: sharing your financial data*. Retrieved from Which?: <https://www.which.co.uk/money/banking/switching-your-bank/open-banking-sharing-your-financial-data-anscq4g8p62h>
- CBInsights. (2018, February 13). *Banks Are Finally Going After Fintech Startups*. Retrieved from CB Insights: <https://www.cbinsights.com/research/top-us-banks-fintech-acquisitions/>
- Chowdhry, A. (2017, December 19). *How To Use Apple Pay Cash*. Retrieved from Forbes: <https://www.forbes.com/sites/amitchowdhry/2017/12/19/how-to-use-apple-pay-cash/#370759ddc1fb>
- Christensen, C. M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston, Massachusetts: Harvard Business Review Press.
- Christensen, C. M., Raynor, M. E., & McDonald, R. (2015, December). What Is Disruptive Innovation? *Harvard Business Review*, p. 6.
- Čiulada, P. (2018, April 26). „Revolut“ pritraukė rusų milijardieriaus investiciją. Retrieved from Verslo Žinios: <https://www.vz.lt/rinkos/isigijimai-ir-susijungimai/2018/04/26/revolut-pritrauke-rusu-milijardieriaus-investicija>
- Committee on the Global Financial System. (2018). *Structural changes in banking after the crisis*. Bank for International Settlements.
- Cronin, M. J. (1997). *Banking and Finance on the Internet*. John Wiley and Sons.
- Crosman, P. (2017, November 23). *Large banks make terrible partners, fintechs say*. Retrieved from American Banker: <https://www.americanbanker.com/news/large-banks-make-terrible-partners-fintechs-say>
- Davies, R., & Davies, G. (1996). *A History of Money from Ancient Times to the Present Day*. Cardiff: University of Wales Press.
- DBS. (2016, July 11). *DBS named world's best digital bank*. Retrieved from DBS: https://www.dbs.com/newsroom/DBS_named_worlds_best_digital_bank

- DBS. (2018). *DBS PayLah!* Retrieved from DBS: <https://www.dbs.com.sg/personal/deposits/pay-with-ease/dbs-paylah>
- DBS Innovates. (2018). *DBS Asia X*. Retrieved from DBS Innovates: <https://www.dbs.com/innovation/dbs-innovates/spaces-dax.html>
- DBS Treasury. (2018). *Online banking with DBS iWealth*. Retrieved from DBS: <https://www.dbs.com.sg/treasures/deposits/bank-with-ease/onlinebanking.page>
- Deloitte. (2017). *Fintech by the numbers*. Deloitte Center for financial services.
- Derose, K., & Li, D. T. (2017, September 01). *Why large financial institutions struggle to adopt technology and data science*. Retrieved from Dataconomy: <http://dataconomy.com/2017/09/financial-institutions-data-science/>
- Desai, F. (2015, December 13). *The Evolution Of Fintech*. Retrieved from Forbes: <https://www.forbes.com/sites/falgunidesai/2015/12/13/the-evolution-of-fintech/#746b961a7175>
- Dietz, M., Härle, P., & Khanna, S. (2016). *A digital crack in banking's business model*. McKinsey & Company.
- Dietz, M., Khanna, S., Olanrewaj, T., & Rajgopal, K. (2016, February). *Cutting through the noise around financial technology*. Retrieved from McKinsey&Company: <https://www.mckinsey.com/industries/financial-services/our-insights/cutting-through-the-noise-around-financial-technology>
- Dietz, M., Lemerle, M., Mehta, A., Sengupta, J., & Zhou, N. (2017, November). *Remaking the bank for an ecosystem world*. Retrieved from <https://www.mckinsey.com/industries/financial-services/our-insights/remaking-the-bank-for-an-ecosystem-world>
- Dillet (A), R. (2017, November 8). *Revolut is applying for a European banking license to become a true bank*. Retrieved from Tech Crunch: <https://techcrunch.com/2017/11/07/revolut-is-applying-for-a-european-banking-license-to-become-a-true-bank/>
- Dillet (B), R. (2017, March 23). *Revolut launches a premium subscription and starts raising a new round*. Retrieved from Tech Crunch: <https://techcrunch.com/2017/03/23/revolut-launches-a-premium-subscription-and-starts-raising-a-new-round/>
- Dillet (C), R. (2017, September 27). *Revolut launches cell phone insurance in the U.K.* Retrieved from TechCrunch: <https://techcrunch.com/2017/09/27/revolut-launches-cell-phone-insurance-in-the-uk/?guccounter=1>
- Dillet, R. (2015, July 20). *Revolut Raises \$2.3 Million For Its Mobile Foreign Exchange Service*. Retrieved from Tech Crunch: <https://techcrunch.com/2015/07/20/revolut-raises-2-3-million-for-its-mobile-foreign-exchange-service/>
- Downes, L., & Nunes, P. F. (2013). Big Bang Disruption. *Harvard Business Review*, 44-56.
- Ernst & Young. (2016). *The relevance challenge: What retail banks must do to remain in the game*. EY.
- Ernst & Young. (2017). *EY FinTech Adoption Index 2017*. EY.

- European Commission. (2015, November 24). *European deposit insurance scheme: A proposed scheme to protect retail deposits in the banking union*. Retrieved from European Commission: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/banking-union/european-deposit-insurance-scheme_en
- European Commission. (2017, November 27). *Payment Services Directive (PSD2): Regulatory Technical Standards (RTS) enabling consumers to benefit from safer and more innovative electronic payments*. Retrieved from European Commission: http://europa.eu/rapid/press-release_MEMO-17-4961_en.htm
- Fintech Global. (2017, May 02). *Banks should NOT invest in FinTech startups – they should acquire them*. Retrieved from Fintech Global: <http://fintech.global/banks-should-not-invest-in-fintech-startups-they-should-acquire-them/>
- Forbes. (2018, February 27). *What Is A Minimum Viable Product, And Why Do Companies Need Them?* Retrieved from Forbes: <https://www.forbes.com/sites/quora/2018/02/27/what-is-a-minimum-viable-product-and-why-do-companies-need-them/#2f5d0006382c>
- Gaynor, B. (2017, December 13). *PSD2: ARE YOU READY FOR STRONG CUSTOMER AUTHENTICATION (SCA)?* Retrieved from International Banker: <https://internationalbanker.com/banking/psd2-ready-strong-customer-authentication-sca/>
- Gee, D. (2016, February 29). *How DBS is building an engine of innovation*. Retrieved from CIO: <https://www.cio.com.au/article/594913/how-dbs-building-an-engine-innovation/>
- Gera, P. (2015). *Being digital: Digital strategy execution drives a new era in banking*. Retrieved from Accenture: <https://www.accenture.com/dk-en/insight-perspectives-banking-digital-strategy-drives-new-era>
- Goodman, R. (2018, January 24). *Ryanair is giving customers 10 per cent back on hotel bookings – but is it any good?* Retrieved from The Sun: <https://www.thesun.co.uk/money/5414527/ryanair-is-giving-customers-10-per-cent-back-on-hotel-bookings-but-is-it-any-good/>
- Google. (2018). *Google Pay Send*. Retrieved from Google: <https://pay.google.com/about/>
- Harvard Business School. (2018, April 10). *The Five Forces*. Retrieved from Harvard Business School - Institute For Strategy and Competitiveness: <https://www.isc.hbs.edu/strategy/business-strategy/Pages/the-five-forces.aspx>
- Heathman, A. (2017, November 20). *Starling Bank CEO: Starling is not up for sale*. Retrieved from Verdict: <https://www.verdict.co.uk/anne-boden-starling-bank/>
- Hodgson, C. (2017, June 27). *The number of super-rich 'ultra-high net worth' people in the world is growing*. Retrieved from Business Insider: <http://nordic.businessinsider.com/wealth-x-super-rich-report-increase-in-wealth-number-of-ultra-wealthy-2017-6>
- Hollander, R. (2018, March 6). *WeChat has hit 1 billion monthly active users*. Retrieved from Business Insider: <http://www.businessinsider.com/wechat-has-hit-1-billion-monthly-active-users-2018-3?r=US&IR=T&IR=T>
- Hughes, M. (2017, December). *Revolut now lets you cheaply trade Bitcoin, Litecoin, and Ethereum*. Retrieved from The Next Web:

- <https://thenextweb.com/cryptocurrency/2017/12/06/revolut-now-lets-you-cheaply-trade-bitcoin-litecoin-and-ethereum/>
- Independent. (2018, April 1). *Tesla car involved in fatal crash in California 'was on Autopilot' when it hit concrete barrier*. Retrieved from Independent:
<https://www.independent.co.uk/news/world/americas/tesla-fatal-car-crash-latest-california-autopilot-self-driving-vehicles-walter-huang-road-accident-a8283591.html>
- Investopedia (A). (2018, April 5). *Insurance*. Retrieved from Investopedia:
<https://www.investopedia.com/terms/i/insurance.asp>
- Investopedia (B). (2018, March 25). *Investment management*. Retrieved from Investopedia:
<https://www.investopedia.com/terms/i/investment-management.asp>
- Irrera, A. (2017, April 06). *Financial institutions risk 24 percent revenue loss from fintech: PwC*. Retrieved from Reuters: <https://www.reuters.com/article/us-fintech-outlook/financial-institutions-risk-24-percent-revenue-loss-from-fintech-pwc-idUSKBN177312>
- Jones, E. D. (2017, November 8). *Revolut applies for European banking licence ahead of Brexit*. Retrieved from Financial Times: <https://www.ft.com/content/087b2dc4-c3ba-11e7-b2bb-322b2cb39656>
- Jones, H. (2017, November 28). *BoE says banks may be underestimating fintech threat*. Retrieved from Reuters: <https://www.reuters.com/article/us-boe-banks-fintech/boe-says-banks-may-be-underestimating-fintech-threat-idUSKBN1DS180>
- JPMorgan Chase & Co. (2017, November 17). *Chase Acquiring WePay to Fully Integrate Payments into Software Used by Millions of Small Businesses*. Retrieved from JPMorgan Chase & Co.:
<https://www.jpmorganchase.com/corporate/news/pr/chase-acquiring-wepay.htm>
- Judd, E. (2017, October 31). *Timeline: 180 years of banking technology*. Retrieved from Independent Banker: <http://independentbanker.org/2017/10/timeline-180-years-of-banking-technology/>
- Jurevicius, O. (2013, May 27). *Porter's Five Forces*. Retrieved from Strategic Management Insight:
<https://www.strategicmanagementinsight.com/tools/porters-five-forces.html>
- Kennedy (B), J. (2018, April 9). *Finance 2.0: Can Europe cash in on the fintech revolution?* Retrieved from Silicon Republic: <https://www.siliconrepublic.com/companies/finance-revolution-fintech-europe>
- Khan, S. (2017, November 14). *Citigroup among top global banks investing in fintech to offset disruptors*. Retrieved from The National:
<https://www.thenational.ae/business/technology/citigroup-among-top-global-banks-investing-in-fintech-to-offset-disruptors-1.675604>
- King, I. (2018, April 26). *New UK banks challenge dominance of 'big four'*. Retrieved from Sky News:
<https://news.sky.com/story/revolut-is-uks-first-digital-bank-unicorn-11347255>
- Klausner, A. (2013, May 9). *Characteristics of High Net Worth Clients*. Retrieved from Forbes:
<https://www.forbes.com/sites/advisor/2013/05/09/characteristics-of-high-net-worth-clients/#2453b6967218>
- Kocianski, S. (2017, August 11). *INSIDE BANKING CULTURE TRANSFORMATIONS: How banks can overcome one of the biggest hurdles to successful innovation*. Retrieved from Business

- Insider: <http://www.businessinsider.com/inside-banking-culture-transformations-report-2017-8?r=US&IR=T&IR=T>
- Kopyoff, V. (2018, March 21). *Video of Fatal Self-Driving Car Accident Shows Pedestrian's Final Moments*. Retrieved from Fortune: <http://fortune.com/2018/03/21/video-fatal-self-driving-car-accident/>
- Kristian J. Sund, M. B. (2016). Managing Tensions Between New and Existing Business Models. *MIT Sloan Management Review*, p. 5.
- Kullar, N. (2018, February 09). *Is 2018 the year for tech companies in banking?* Retrieved from Banking: <https://banking.com/analysis/2018-year-big-tech-banking/>
- Lee, P. (2016, November 18). *Inside DBS Bank's collaborative, open, beautiful innovation lab*. Retrieved from TechInAsia: <https://www.techinasia.com/dbs-dax-innovation>
- Lloyds Banking Group. (2016, July 18). *Mentoring match-ups with FinTech start-ups*. Retrieved from Lloyds Banking Group: <http://www.lloydsbankinggroup.com/Media/Press-Releases/2016-press-releases/lloyds-banking-group/mentoring-match-ups-with-fintech-start-ups/>
- Lumley, L. (2018, March 27). *Open banking: the struggle behind bank-fintech partnerships*. Retrieved from Raconteur: <https://www.raconteur.net/finance/open-banking-struggle-behind-bank-fintech-partnerships>
- Management Mania. (2018, April 10). *SWOT Analysis*. Retrieved from Management Mania: <https://managementmania.com/en/swot-analysis>
- Marr, B. (2017, February 10). *The Complete Beginner's Guide To FinTech In 2017*. Retrieved from Forbes: <https://www.forbes.com/sites/bernardmarr/2017/02/10/a-complete-beginners-guide-to-fintech-in-2017/#d2b764a33402>
- Maurya, A. (2012). *Running Lean: Iterate from Plan A to a Plan That Works*. O'Reilly: Cambridge.
- McDonald, C. M. (2015, December). What Is Disruptive Innovation? *Harvard Business Review*, p. 6.
- McGrath (A), R. G. (2013). *The end of competitive advantage*. Boston: Harvard Business School Publishing.
- McGrath (B), R. G. (2013). Transient Advantage. *Harvard Business Review*, 62-70. Retrieved from Harvard Business Review: <https://hbr.org/2013/06/transient-advantage>
- McWaters, R. G. (2017). *Beyond Fintech: A Pragmatic Assessment Of Disruptive Potential In*. World Economic Forum and Deloitte.
- McWaters, R. J. (2015). *The Future of Financial Services: How disruptive innovations are reshaping the way financial*. World Economic Forum.
- McWaters, R. J., & Galaski, R. (2017). *Beyond Fintech: A Pragmatic Assessment Of Disruptive Potential In Financial Services*. World Economic Forum. Retrieved from World Economic Forum.
- Millar, R. (2014, April 07). *End of Competitive Advantage: How to Keep Your Strategy Moving as Fast as Your Business*. Retrieved from Developing Leaders: <https://www.iedp.com/articles/end-of-competitive-advantage-how-to-keep-your-strategy-moving-as-fast-as-your-business/>

- Noto, G. (2017, October 26). *Fintech Revolut Is Adding 40 New Businesses A Day*. Retrieved from Bank Innovation: <https://bankinnovation.net/2017/10/fintech-revolut-is-adding-40-new-businesses-a-day/>
- Oertel, C. (2015, September). *Why digital disruption resembles a shark fin more than a bell curve*. Retrieved from Accenture: <https://www.accenture.com/us-en/blogs/blogs-why-digital-disruption-resembles-shark-fin>
- O'Leary, A. (2018, March). *Revolut: All the latest news and updates from the challenger bank*. Retrieved from Mapa Research: <https://www.maparesearch.com/revolut-updates/>
- Onextrapixel. (2018, May 1). Retrieved from Build-Measure-Learn: <https://onextrapixel.com/minimum-viable-products-defined-by-the-experts/build-measure-learn/>
- Overdorf, C. M. (2000). Meeting the Challenge of Disruptive Innovation. *Harvard Business Review*, p. 13.
- PESTLE Analysis. (2018, April 10). *What is PESTLE Analysis? A Tool for Business Analysis*. Retrieved from PESTLE Analysis: <http://pestleanalysis.com/what-is-pestle-analysis/>
- Plush, H. (2016, June 10). *Would you stay in a 'Ryanair Room'?* Retrieved from The Telegraph: <https://www.telegraph.co.uk/travel/news/ryanair-launches-package-holidays-rooms/>
- Porter, M. E. (2008, January). *The Five Competitive Forces That Shape Strategy*. New York City: Harvard Business Review.
- POSB (A). (2018). *POSB digibank Virtual Assistant*. Retrieved from POSB: <https://www.posb.com.sg/personal/deposits/bank-with-ease/digibank-virtual-assistant>
- POSB (B). (2018). *POSB Smart Buddy*. Retrieved from POSB: <https://www.posb.com.sg/personal/deposits/bank-with-ease/posb-smart-buddy>
- ProcessPolicy. (2018, April 10). *What is PESTLE analysis?* Retrieved from ProcessPolicy: <https://processpolicy.com/pestle-analysis.htm>
- Professional Academy (A). (2018, April 10). *Marketing Theories - SWOT analysis*. Retrieved from Professional Academy: <https://www.professionalacademy.com/blogs-and-advice/marketing-theories---swot-analysis>
- Professional Academy (B). (2018, April 10). *Marketing Theories - PESTEL analysis*. Retrieved from Professional Academy: <https://www.professionalacademy.com/blogs-and-advice/marketing-theories---pestel-analysis>
- ProfitWell. (2018, May 4). *ProfitWell*. Retrieved from Why we released a better product for free (and maybe you should, too): <https://www.profitwell.com/blog/why-we-released-a-better-product-for-free-and-maybe-you-should-too>
- PwC. (2017). *Global Fintech Report 2017*. PwC.
- Raynor, C. M. (2003). *The Innovator's Solution: Creating and Sustaining Successful Growth*. Boston, Massachusetts: Harvard Business School Press.

- Red Herring. (2017, August 1). *Revolut: Speed, Efficiency and Scale for a Fintech Heavyweight*. Retrieved from Red Herring: <https://www.redherring.com/europe/revolut-speed-efficiency-scale-fintech-heavyweight/>
- Reuters. (2018, April 13). *German mobile bank N26 to launch in Britain, U.S. in 2018, CEO says*. Retrieved from Reuters: <https://www.reuters.com/article/us-number26-usa/german-mobile-bank-n26-to-launch-in-britain-u-s-in-2018-ceo-says-idUSKBN1HK1H1>
- Revolut (A). (2016, September 7). *Beta, faster, stronger: Revolut Android rebuild!* Retrieved from Revolut: <https://blog.revolut.com/beta-faster-stronger-revolut-android-rebuild/>
- Revolut (A). (2017, July 12). *Announcing our \$66m Series B investment!* Retrieved from Revolut: <https://blog.revolut.com/announcing-our-66m-series-b-investment/>
- Revolut (A). (2018, January 29). *Announcing 24/7 support*. Retrieved from Revolut: <https://blog.revolut.com/announcing-24-7-support/>
- Revolut (B). (2016, December 12). *Fair Usage Policy Update*. Retrieved from Revolut: <https://blog.revolut.com/fair-usage-policy-update/>
- Revolut (B). (2017, July 17). *Crowdfunding coming soon!* Retrieved from Revolut: <https://blog.revolut.com/crowdfunding-coming-soon-2/>
- Revolut (B). (2018, May 5). *Business Accounts, Made Easy*. Retrieved from Revolut: <https://www.revolut.com/dk/business>
- Revolut (C). (2016, December 16). *Introducing spare Revolut cards!* Retrieved from Revolut: <https://blog.revolut.com/introducing-spare-revolut-cards/>
- Revolut (C). (2017, February 03). *Hey, I'm Rita!* Retrieved from Revolut: <https://blog.revolut.com/hey-im-rita/>
- Revolut (C). (2018, May 1). *Buy cryptocurrency with no hidden fees*. Retrieved from Revolut: <https://www.revolut.com/dk/cryptocurrency>
- Revolut (D). (2016, November 30). *Introducing spending analytics!* Retrieved from Revolut: <https://blog.revolut.com/introducing-spending-analytics/>
- Revolut (D). (2017, November 17). *How Revolut signed-up 16,000 business accounts in 3 months with no marketing*. Retrieved from Revolut: <https://blog.revolut.com/how-revolut-signed-up-16-000-business-accounts-in-3-months-with-no-marketing/>
- Revolut (D). (2018, May 1). *Disrupting banking. Together*. Retrieved from Revolut: <https://www.revolut.com/dk/careers>
- Revolut (E). (2016, September 6). *Join Our Revolut Community!* Retrieved from Revolut: <https://blog.revolut.com/join-our-revolut-community/>
- Revolut (E). (2017, June 30). *Introducing eleven new currencies to the Revolut app!* Retrieved from Revolut: <https://blog.revolut.com/introducing-eleven-new-currencies-to-the-revolut/>
- Revolut (E). (2018, March 22). *Introducing Disposable Virtual Cards*. Retrieved from Revolut: <https://blog.revolut.com/introducing-disposable-virtual-cards/>

- Revolut (F). (2016, August 26). *Last minute tips for the bank holiday weekend*. Retrieved from Revolut: <https://blog.revolut.com/last-minute-tips-for-the-bank-holiday-weekend/>
- Revolut (F). (2017, July 17). *Introducing free personal Euro accounts!* Retrieved from Revolut: <https://blog.revolut.com/introducing-free-personal-euro-accounts/>
- Revolut (F). (2018, April 23). *Introducing Euro Direct Debits*. Retrieved from Revolut: <https://blog.revolut.com/introducing-euro-direct-debits/>
- Revolut (G). (2016, May 20). *New Feature - Exportable Statements!* Retrieved from Revolut: <https://blog.revolut.com/new-feature-exportable-statements/>
- Revolut (G). (2017, October 17). *Introducing Recurring Payments*. Retrieved from Revolut: <https://blog.revolut.com/introducing-recurring-payments/>
- Revolut (G). (2018, February 13). *Introducing Price Alerts*. Retrieved from Revolut: <https://blog.revolut.com/introducing-price-alerts/>
- Revolut (H). (2016, August 22). *New feature: we've added auto top-up!* Retrieved from Revolut: <https://blog.revolut.com/new-feature-weve-added-auto-top-up/>
- Revolut (H). (2017, January 6). *Introducing Revolut 3.5*. Retrieved from Revolut: <https://blog.revolut.com/introducing-revolut-35/>
- Revolut (H). (2018, February 21). *Introducing Rev Me!* Retrieved from Revolut: <https://blog.revolut.com/introducing-rev-me/>
- Revolut (I). (2016, August 25). *One year and 300,000 users later!* Retrieved from Revolut: <https://blog.revolut.com/one-year-and-300000-users-later/>
- Revolut (I). (2017, February 7). *Introducing Revolut current accounts*. Retrieved from Revolut: <https://blog.revolut.com/introducing-revolut-current-accounts/>
- Revolut (I). (2018, May 1). *Our Pricing Plans*. Retrieved from Revolut: <https://www.revolut.com/dk/pricing>
- Revolut (J). (2016, October 22). *Request money from friends*. Retrieved from Revolut: <https://blog.revolut.com/request-money-from-friends/>
- Revolut (J). (2017, December 7). *Revolut Launches Easiest & Fastest way to Buy Cryptocurrency*. Retrieved from Revolut: https://blog.revolut.com/revolut-launches-easiest-fastest-way-to-buy-cryptocurrencies/#at_pco=smlwn-1.0&at_si=5ae380fbc170c744&at_ab=per-2&at_pos=0&at_tot=1
- Revolut (J). (2018, April 5). *Pay-per-Day Travel Insurance*. Retrieved from Revolut: <https://www.revolut.com/tr/travel-insurance>
- Revolut (K). (2016, January 12). *Revolut 2.0 is here! What's new in 2.0 and 2015 highlights*. Retrieved from Revolut: <https://blog.revolut.com/revolut-20-is-here-whats-new-in-20-and-2015/>
- Revolut (K). (2017, January 17). *Split bills instantly with Revolut*. Retrieved from Revolut: <https://blog.revolut.com/split-bills-instantly-with-revolut/>
- Revolut (K). (2018, April 26). *Revolut – Europe's new tech unicorn*. Retrieved from Revolut: <https://blog.revolut.com/revolut-europes-new-tech-unicorn/>

- Revolut (L). (2016, April 20). *Revolut 2.4 - The Next Generation of Security*. Retrieved from Revolut: <https://blog.revolut.com/revolut-24-the-next-generation-of-security/>
- Revolut (L). (2017, May 18). *Top-up in Polish Zloty & Swiss Franc!* Retrieved from Revolut: <https://blog.revolut.com/top-up-in-polish-zloty-swiss-franc/>
- Revolut (L). (2018, April 04). *Revolut is coming to Singapore, and the world SG*. Retrieved from Revolut: <https://blog.revolut.com/revolut-is-coming-to-singapore/>
- Revolut (M). (2016, July 22). *Revolut 2.6: New and Improved Transaction Details!* Retrieved from Revolut: <https://blog.revolut.com/revolut-26-new-and-improved-transaction-details/>
- Revolut (M). (2017, February 1). *Weekend exchange-rate surcharge clarification*. Retrieved from Revolut: <https://community.revolut.com/t/weekend-exchange-rate-surcharge-clarification/4483>
- Revolut (M). (2018, April 17). *Round up your spare change and save with Vaults*. Retrieved from Revolut: <https://blog.revolut.com/round-up-your-spare-change-and-save-with-vaults/>
- Revolut (N). (2016, September 21). *Revolut Express Delivery*. Retrieved from Revolut: <https://blog.revolut.com/revolut-express-delivery/>
- Revolut (N). (2017, November 7). *Why a European banking licence will be a huge deal for your Revolut account*. Retrieved from Revolut: https://blog.revolut.com/why-a-european-banking-licence-will-be-a-huge-deal-for-your-revolut-account/#at_pco=smlwn-1.0&at_si=5ae37ec7073ef8b9&at_ab=per-2&at_pos=0&at_tot=1
- Revolut (N). (2018, May 10). *Short-term loans with unbeatable rates*. Retrieved from Revolut: <https://www.revolut.com/dk/personal-loans>
- Revolut (O). (2016, August 3). *Revolut For Apple Watch*. Retrieved from Revolut: <https://blog.revolut.com/revolut-for-apple-watch/>
- Revolut (O). (2018, March 7). *We want YOU to help shape our brand*. Retrieved from Revolut: <https://blog.revolut.com/we-want-you-to-help-shape-our-brand/>
- Revolut (P). (2016, September 13). *Revolut for Business - thousands sign up in 24 hours!* Retrieved from Revolut: <https://blog.revolut.com/revolut-for-business-thousands-sign-up-in-24/>
- Revolut (Q). (2016, November 7). *Top-up by Android Pay!* Retrieved from Revolut: <https://blog.revolut.com/top-up-by-android-pay/>
- Revolut (R). (2016, October 1). *Top-up by Apple Pay!* Retrieved from Revolut: <https://blog.revolut.com/top-up-by-apple-pay/>
- Revolut (S). (2016, June 20). *Touch it, Tap it, Rev it! Welcome to Revolut contactless!* Retrieved from Revolut: <https://blog.revolut.com/touch-it-tap-it-rev-it-welcome-to-revolut/>
- Revolut (T). (2016, October 05). *Transfer 23 currencies globally with the real exchange rate*. Retrieved from Revolut: <https://blog.revolut.com/transfer-23-currencies-globally-with-the-real/>
- Revolut (U). (2016, September 6). *Update to our Fair Usage Policy*. Retrieved from Revolut: <https://blog.revolut.com/update-to-our-fair-usage-policy/>

- Revolut (V). (2016, July 22). *We're accepting credit cards!* Retrieved from Revolut: <https://blog.revolut.com/acceptingcreditcards/>
- Revolut. (2015, July 20). *A money management revolution.* Retrieved from Revolut: <https://blog.revolut.com/a-money-management-revolution-today-were/>
- Revolut via Twitter. (2017, March 23). *Revolut Premium has arrived! It's like a bank account, but better. The first 5,000 to signup can invest in Revolut.* Retrieved from Twitter: <https://twitter.com/revolutapp/status/844916717461667841?lang=en>
- Ries, E. (2011). *The Lean Startup: How Constant Innovation Creates Radically Successful Businesses.* Portfolio Penguin.
- Ries, E. (2018, April 17). *The Lean Startup Methodology.* Retrieved from The Lean Startup: <http://theleanstartup.com/principles>
- Rodriguez, S. (2015, September 03). *The real reason everyone calls Billion-dollar startups 'unicorns'.* Retrieved from The Real Reason Everyone Calls Billion-Dollar Startups 'Unicorns': <https://www.ibtimes.com/real-reason-everyone-calls-billion-dollar-startups-unicorns-2079596>
- Ross, S. (2014). *What percentage of the global economy is comprised of the financial services sector?* Retrieved from <https://www.investopedia.com/ask/answers/030515/what-percentage-global-economy-comprised-financial-services-sector.asp>
- Rumney, E. (2018, April 26). *Revolut becomes Britain's first digital bank unicorn.* Retrieved from Reuters: <https://www.reuters.com/article/us-fintech-revolut-funding/revolut-becomes-britains-first-digital-bank-unicorn-idUSKBN1HX0MZ>
- Saleh, A., Bunnell, E., Yousif, N., Dreischmeier, R., Duthoit, C., & Regelman, R. (2017, December 13). *Why Aren't Banks Getting More from Digital?* Retrieved from Boston Consulting Group: <https://www.bcg.com/publications/2017/why-are-banks-not-getting-more-from-digital.aspx>
- Salter, P. (2015, December 9). *London Fintech Entrepreneur Talking About A Revolution.* Retrieved from Forbes: <https://www.forbes.com/sites/philipsalter/2015/12/09/london-fintech-entrepreneur-talking-about-a-revolution/#64ac25887b21>
- Sassard, S. (2017, November 6). *Mobile bank N26 sees customers tripling within two years: CEO.* Retrieved from Reuters: <https://www.reuters.com/article/us-number26-customers/mobile-bank-n26-sees-customers-tripling-within-two-years-ceo-idUSKBN1D62AA>
- Schleifer, T. (2018, April 11). *Revolut, the payments startup, will see its valuation jump five times to \$1.4 billion after a financing round led by DST.* Retrieved from Recode: <https://www.recode.net/2018/4/11/17219352/revolut-dst-global-financing-valuation-digital-banking>
- SEB. (2018). *FinTech investments.* Retrieved from SEB: <https://sebgroup.com/large-corporates-and-institutions/our-services/seb-venture-capital/investments/fintech-investments>
- Shapiro, C., & Varian, H. R. (1999). *Information Rules.* Boston: Harvard Business School Press .
- Sia Siew Kien, C. S. (2015). *Rewiring the Enterprise for Digital Innovation: The Case of DBS Bank.* Singapore: Asia Business Case Centre.

- Silicon Valley. (2017). *Framework for Banks to Partner with FinTech Companies*. Retrieved from Silicon Valley: <https://siliconvalley.center/frameworks-for-banks-to-work-with-fintech-companies/>
- SlidePlayer. (2018, September 1). *SlidePlayer*. Retrieved from Innovation Process: <https://slideplayer.com/slide/8240951/>
- Soper, S., & Wang, S. (2017, June 08). *Amazon's Lending Business for Online Merchants Gains Momentum*. Retrieved from Bloomberg: <https://www.bloomberg.com/news/articles/2017-06-08/amazon-s-lending-business-for-online-merchants-gains-momentum>
- South China Morning Post. (2017, August 10). *DBS Bank's digital prowess weaves banking into pursuits that impact lives*. Retrieved from South China Morning Post: <http://www.scmp.com/country-reports/business/topics/singapore-national-day-2017/article/2105685/dbs-banks-digital>
- Spectrem Group. (2018, March 25). *Who Is the Mass Affluent Investor*. Retrieved from Spectrem Group: <https://spectrem.com/Content/who-is-the-mass-affluent.aspx>
- Swedbank. (2017, May 10). *Swedbank acquires PayEx*. Retrieved from Swedbank: <https://www.swedbank.com/?pressId=41919A376C1F5ED3>
- Taylor, C. (2018, March 08). *Google says it is looking to partner with banks, not be their rival*. Retrieved from The Irish Times: <https://www.irishtimes.com/business/technology/google-says-it-is-looking-to-partner-with-banks-not-be-their-rival-1.3418082>
- Telia. (2018, April 5). *Travel Insurance*. Retrieved from Telia: <https://www.telia.ee/en/era/mobiil/muud-lisateenused/reisikindlustus>
- Varian, C. S. (1999). *Information Rules: A Strategic Guide to the Network Economy*. Harvard Business School Press: Boston, Massachusetts.
- Wang, Y., & Lim, E. (2018, January 05). *Banks Face Challenges Acquiring Fintech Firms*. Retrieved from Forbes: <https://www.forbes.com/sites/mergermarket/2018/01/05/banks-face-challenges-acquiring-fintech-firms/#11abc66428ae>
- Webster, I., & Pizzala, J. (2015). *Fintech: Are banks responding appropriately?* EY.
- WeChat. (2018, April 26). *WeChat Pay*. Retrieved from WeChat: <https://pay.weixin.qq.com/index.php/public/wechatpay>
- Westland, S., Chakraborty, R., Viale, E., & Lillis, S. (2016). *Predictable Disruption: Banks need to be proactive to spot the next wave*. Accenture.
- Williams-Grut, O. (2018, April 28). *Revolut is planning a metal 'Platinum' card that will give people 1% cash back in cryptocurrencies*. Retrieved from Business Insider: <http://www.businessinsider.com/revolut-platinum-card-cash-back-cryptocurrencies-2018-4?r=US&IR=T&IR=T>
- Witko, C. (2016, March 16). *How Wall Street became a big chunk of the U.S. economy — and when the Democrats signed on*. Retrieved from The Washington Post: https://www.washingtonpost.com/news/monkey-cage/wp/2016/03/29/how-wall-street-became-a-big-chunk-of-the-u-s-economy-and-when-the-democrats-signed-on/?utm_term=.4f598438eb09

- Wolf, A. (2016, May 5). *Primary Data vs. Secondary Data: Market Research Methods*. Retrieved from Market Research: <https://blog.marketresearch.com/not-all-market-research-data-is-equal>
- World Economic Forum. (2015). *The Future of Financial Services: How disruptive innovations are reshaping the way financial*. World Economic Forum 13.
- World Economic Forum. (2016). *The future of financial infrastructure*.
- World Economic Forum. (2017, August 22). *Big Tech, Not Fintech, Causing Greatest Disruption to Banking and Insurance*. Retrieved from World Economic Forum: <https://www.weforum.org/press/2017/08/big-tech-not-fintech-causing-greatest-disruption-to-banking-and-insurance/>
- Wright, G. (2017, December 11). *World's Best Digital Banks 2017 | Global Winners*. Retrieved from Global Finance: <https://www.gfmag.com/magazine/december-2017/worlds-best-digital-banks-global-winners>
- Zhang, M. (2018, February 13). *Virtual red packets are most popular way to gift money in China as digital disruption hits tradition, survey finds*. Retrieved from South China Morning Post: <http://www.scmp.com/business/banking-finance/article/2133219/virtual-red-packets-are-most-popular-way-gift-money-china>

12. Appendices

12.1. Appendix 1. Customer Rating of Starling Bank in App Store

App Store Preview

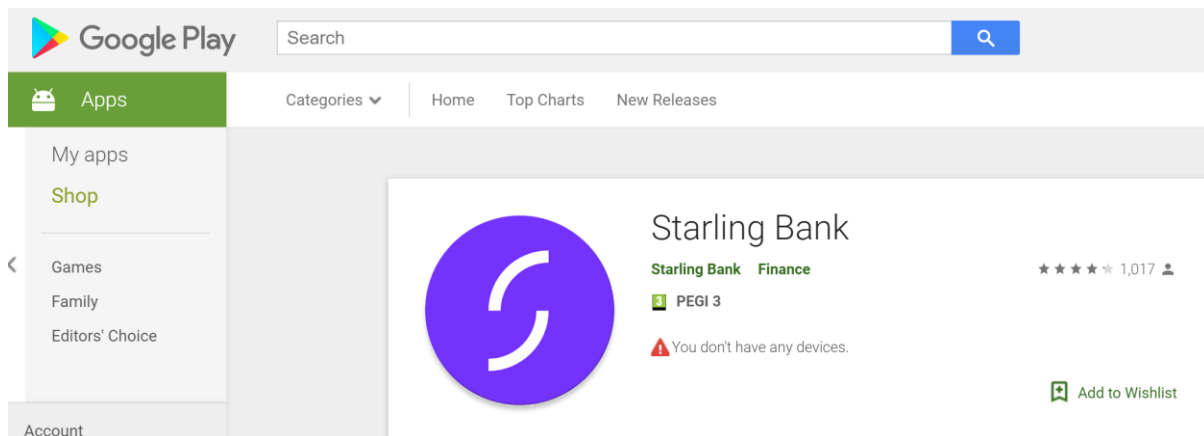
This app is only available on the App Store for iOS devices.



Starling Bank 4+ STARLING BANK LIMITED

#25 in Finance
★★★★☆ 1.8K Ratings
Free

12.2. Appendix 2. Customer Rating of Starling Bank in Google Play



12.3. Appendix 3. Customer Rating of Monzo Bank in App Store

App Store Preview

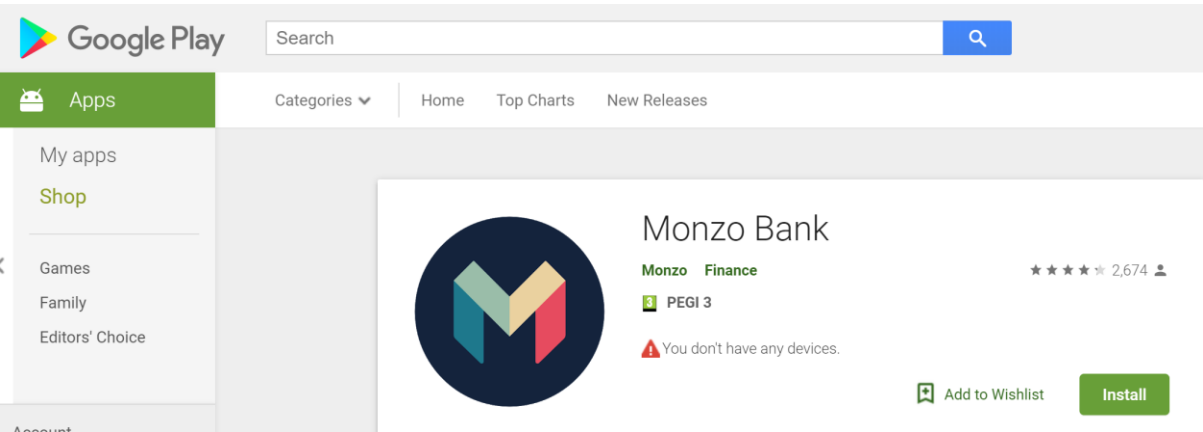
This app is only available on the App Store for iOS devices.



Monzo Bank 4+
Monzo Bank Limited

#12 in Finance
★★★★★ 1.4K Ratings
Free

12.4. Appendix 4. Customer Rating of Monzo Bank in Google Play



12.5. Appendix 5. Customer Rating of Atom Bank in App Store

App Store Preview

This app is only available on the App Store for iOS devices.



Atom bank 4+

Atom Bank plc

#165 in Finance

★★★★☆ 188 Ratings

Free

12.6. Appendix 6. Customer Rating of Atom Bank in Google Play



Search

Apps

My apps

Shop

Games

Family

Editors' Choice

Categories

Home

Top Charts

New Releases



Atom bank

Atom Bank PLC Finance

PEGI 3

You don't have any devices.

★★★★☆ 524

Add to Wishlist

12.7. Appendix 7. Customer Rating of N26 in App Store

App Store Preview

This app is only available on the App Store for iOS devices.



N26 – The Mobile Bank 4+

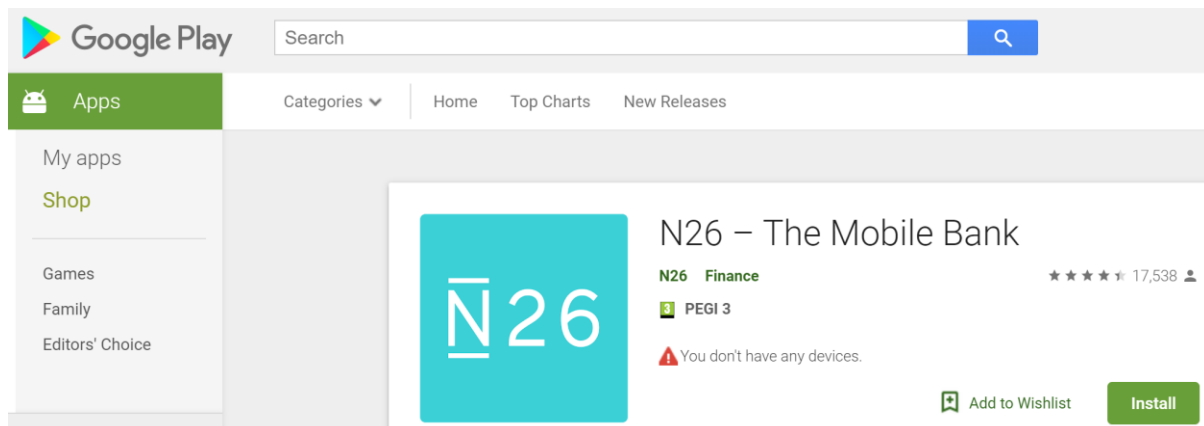
Bank anywhere, with your phone

N26 GmbH

★★★★★ 43 Ratings

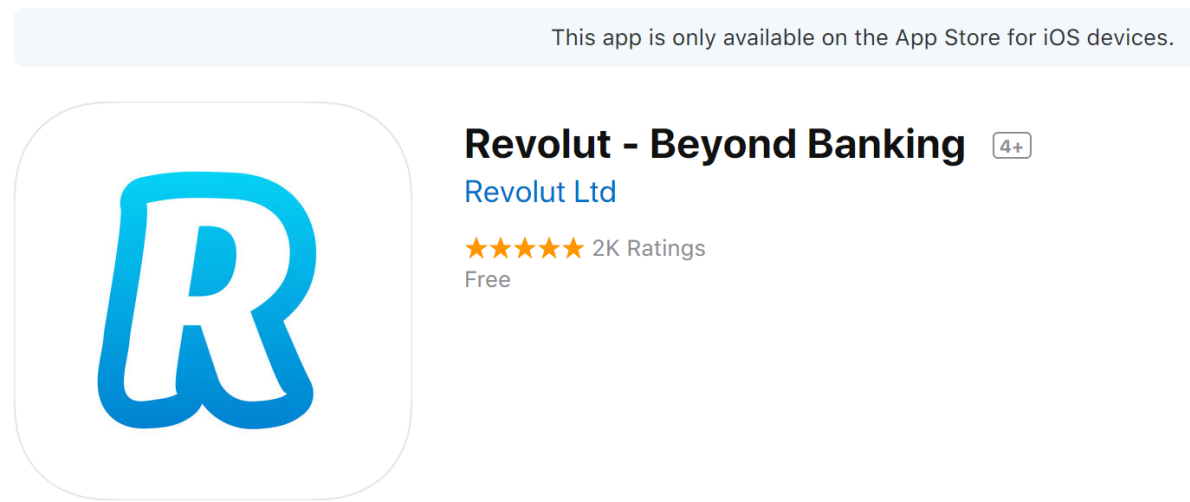
Free

12.8. Appendix 8. Customer Rating of N26 in Google Play

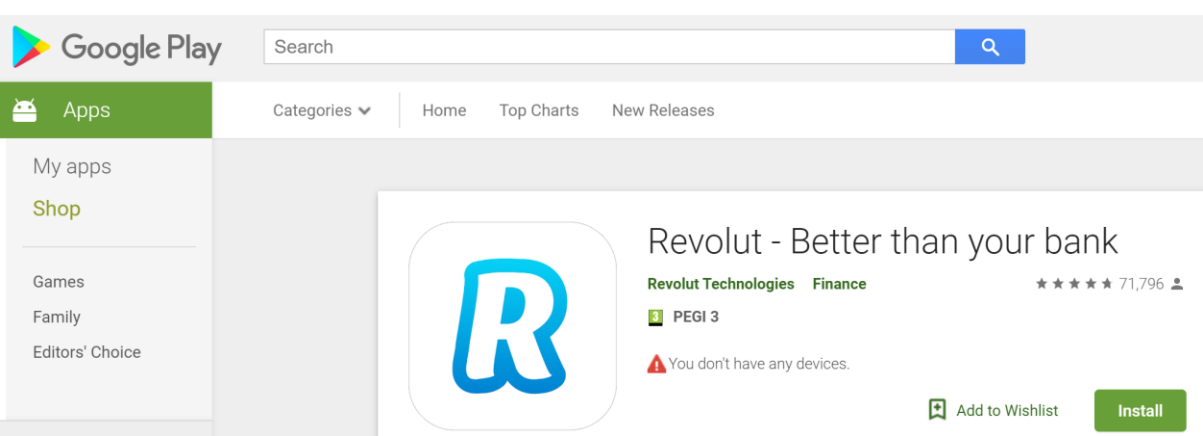


12.9. Appendix 9. Customer Rating of Revolut in App Store

App Store Preview



12.10. Appendix 10. Customer Rating of Revolut in Google Play



12.11. Appendix 11. Spot Rate of DKKUSD Offered by Nordea as at 30 April 2018
(Nordea, 2018)



Bestil rejsevaluta

Vælg valuta (1/3)

Valuta *

Beløb *

Beløbet angives i: ☒ Danske kroner ☐ Fremmed valuta

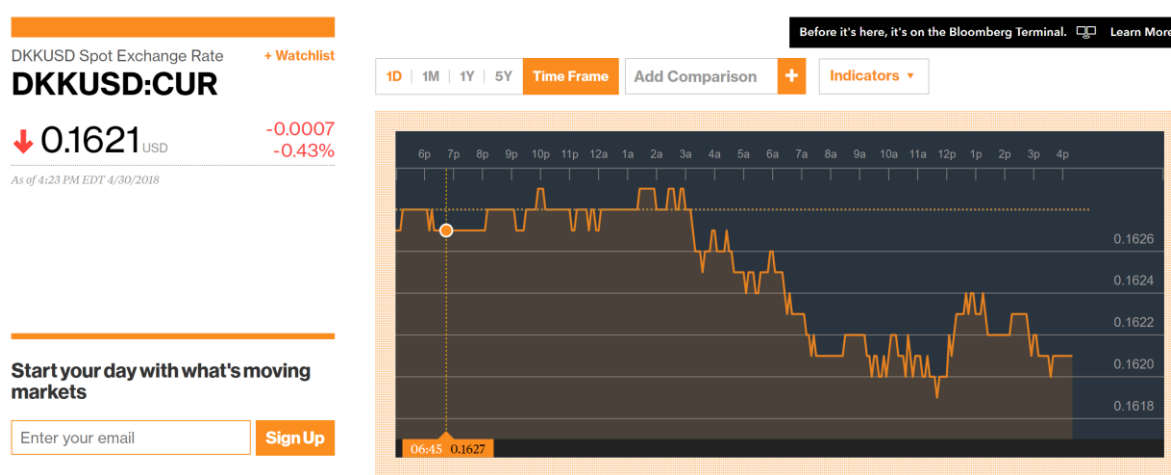
Tilføj

Din bestilling USD 1.582,63 koster 10.000,00 kr

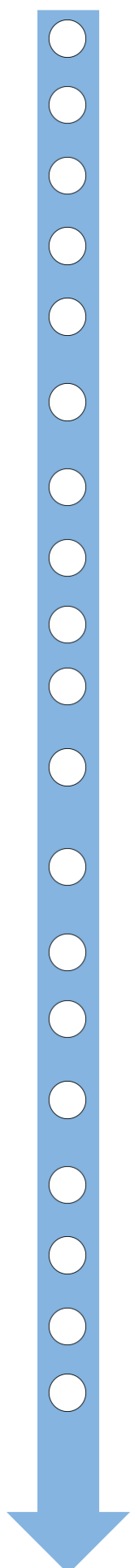
Den viste pris er vejledende. Vær opmærksom på, at den endelige pris er den der gælder på afregningsdagen.

Fortsæt

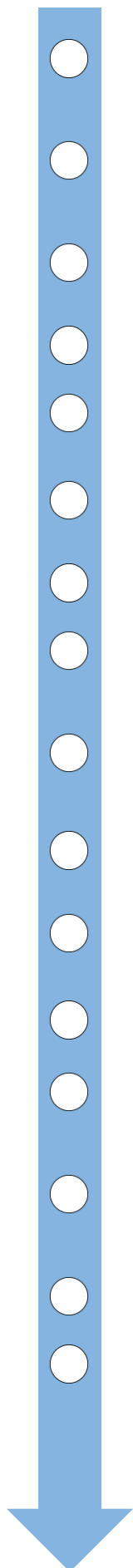
12.12. Appendix 12. Interbank Spot Rate of DKKUSD as at 30 April 2018 (Bloomberg, 2018)



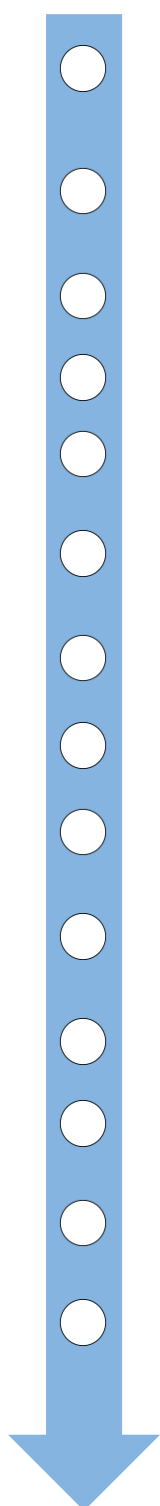
12.13. Appendix 13. Timeline of Revolut Related Events



2015 July	Revolut founded (Revolut, 2015)
2016 January 11	Revolut 2.0 launched, offering many new features (Revolut (K), 2016)
2016 April 20	Revolut 2.4 launched, introducing new security features , such as location-based security (Revolut (L), 2016)
2016 May 20	Revolut 2.4.3 introduced, allowing to export statements (Revolut (G), 2016)
2016 June 17	Contactless Revolut debit cards become available (Revolut (S), 2016)
2016 July 22	Topping up of Revolut account becomes instant . Visa and MasterCard credits cards can now be used for topping up (Revolut (V), 2016)
2016 July 23	Revolut 2.6 version becomes available, allowing to add receipts and notes to transactions (Revolut (M), 2016)
2016 August 3	Revolut becomes available for Apple Watch (Revolut (O), 2016)
2016 August 22	Automatic top-up introduced (Revolut (H), 2016)
2016 August 26	Bill splitting feature is now available (Revolut (F), 2016)
2016 September 5	Revolut Community page is launched, where people can raise questions, share ideas, and provide feedback (Revolut (E), 2016)
2016 September 6	Update to Fair Usage Policy – a fee of 0.5% is levied on cross currency transaction above 6.000 euros per month (Revolut (U), 2016)
2016 September 7	Revolut starts involving its users to test Beta version for bugs and glitches (Revolut (A), 2016)
2016 September 21	Revolut express delivery is now available (Revolut (N), 2016)
2016 October 1	Top up using Apple Pay and Apple Watch are now available, increasing Revolut's compatibility with existing products (Revolut (R), 2016)
2016 October 5	Transfers in 23 currencies are now available (Revolut (T), 2016)
2016 October 22	Request money from friends feature becomes available (Revolut (J), 2016)
2016 November 7	Top-up by Android Pay becomes available (Revolut (Q), 2016)
2016 November 30	Spending analytics introduced (Revolut (D), 2016)



2016 December 12	Fair Usage Policy update: a monthly free ATM withdrawal limit of £200, with a 2% fee thereafter introduced (Revolut (U), 2016)
2016 December 16	Spare Revolut cards introduced, allowing users to link additional physical Revolut cards to their account (Revolut (C), 2016)
2017 January 6	Revolut 3.5 introduced. Users can set limit on each card linked to their Revolut account, as well as a hard limit on the account (Revolut (H), 2017)
2017 January 17	Instant bill splitting is now possible (Revolut (K), 2017)
2017 February 3	Rita, Revolut's Intelligent Troubleshooting Assistant, is introduced (Revolut (C), 2017)
2017 February 7	Current accounts introduced to the UK residents . Users can now receive GBP payments, such as salary, into their Revolut account (Revolut (I), 2017)
2017 March 23	Revolut launches a premium account (Dillet (B), 2017)
2017 May 18	Top up with PLN and CHF is now available (in addition to existing EUR, GBP and USD) (Revolut (L), 2017)
2017 June 30	Revolut users can now hold, exchange and send make instant fee-free money transfers in 11 new currencies . In total, 16 currencies can now be managed in Revolut app (Revolut (E), 2017)
2017 July 12	\$66m Series B fundraising round finalized (Revolut (A), 2017)
2017 July 17	Free personal EUR accounts launched. Users can now receive EUR payments from anyone, anywhere, including a salary (Revolut (F), 2017)
2017 August 17	Business accounts launched. Revolut starts serving the most demanding customer segment (Revolut (D), 2017)
2017 September	Mobile phone insurance is now offered by Revolut (Dillet (C), 2017)
2017 October 17	Recurring payments launched. Users can now make regular payments to cover bills, such as monthly rent or mortgage, alongside being able to regularly send money abroad to family and friends in just a few easy steps (Revolut (G), 2017)
2017 November 8	Revolut applies for a European banking license (Revolut (N), 2017)
2017 December 7	Cryptocurrency trading platform launched. Customers are now able to buy, hold and exchange Bitcoin, Litecoin and Ethereum in just 30 seconds at the best possible rates (Revolut (J), 2017)



2017 December 31	Revolut breaks even on a monthly basis for the first time, claiming to be the first digital challenger bank to have achieved this (Browne (B), 2018)
2018 January 13	Second Payment Services Directive (PSD2) takes effect in Europe, changing the rules of game in financial services' industry (European Commission, 2017)
2018 January 17	Geolocation travel insurance is now offered by Revolut (Revolut (J), 2018)
2018 January 29	24/7 support becomes available (Revolut (A), 2018)
2018 February 13	Price alerts introduced (Revolut (G), 2018)
2018 February 21	Rev Me is launched, allowing to instantly collect money from friends or others for splitting a bill or rent, for instance (Revolut (H), 2018)
2018 March 7	Revolut announces it will create a Public Board , where users will be allowed to suggest new features (Revolut (O), 2018)
2018 March	People near me functionality enabled to enable payments to people nearby (' proximity payments ') (O'Leary, 2018)
2018 March 22	Virtual disposable cards introduced, minimizing the risk of online-payment fraud (Revolut (E), 2018)
2018 April 4	Revolut is about to expand into Singapore , shortly followed by entrance in markets in North American and Asia-Pacific (Revolut (L), 2018)
2018 April 17	Vaults are introduced, a feature that rounds up spare change and saves it (Revolut (M), 2018)
2018 April 23	EUR direct debits are introduced (Revolut (F), 2018)
2018 April 26	\$250m Series C fundraising round finalized Revolut's current valuation stands at \$1.7b , making it a fintech unicorn (Revolut (K), 2018)
2018 April 28	Over 100,000 people from markets that Revolut will enter (United States, Canada, Singapore, Hong Kong, Australia and New Zealand) in 2018 have signed up on waiting lists with thousands joining every day (Revolut (D), 2018)