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The bust and boom of US tech-stocks

… A reverse-engineered discounted cash flow approach to the FAANG companies

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Executive Summary

The study considers the five largest American Internet companies behind the acronym FAANG, i.e. Facebook, Amazon, Apple, Netflix, and Google (Alphabet), and sets out to assess their current valuation in the American equity market. Having seen exceptional growth in their stock prices to undergo an incredible journey on the New York Stock Exchange (NYSE) over the past five years, more and more observers are questioning the valuations of the Internet juggernauts. Increasingly, questions are being raised as to whether the stocks might in fact be inflated by irrational exuberance, and not reflect the potential of the businesses. In a reverse-engineered discounted cash flow model, the study backs out the growth rates implied by the FAANGs stock prices as of January 31st, 2018, with the purpose to assess the likelihood that they will deliver on the market expectations for future growth. By backing out the growth rates implied by the current stock prices, the model enables the study to circumvent one of the biggest sources of error in the DCF model, i.e. the forecasting of future cash flows. The model reveals that Facebook and Amazon have the highest implied growth rates amongst the FAANG companies as of January 31st, 2018, and hence they are selected for further investigation. In order to assess the likelihood that Facebook and Amazon will deliver on the market expectations, a thorough strategic analysis of the two businesses is implemented. By determining the strategic value drivers that influence the future success of these Internet giants, the study is able to conclude in general terms whether the implied growth rates are within reach. Although both Facebook and Amazon are found to be in a favourable strategic position, the study finds evidence only to support the notion that Facebook is likely to deliver on the market expectations. Amazon is expected to grow considerably in the future, however, the share magnitude of the implied growth rate makes it unattainable. In conclusion, the study provides an inventive approach to assessing the valuation of firms in fast-changing industries with considerable uncertainty associated with future cash flows. As of January 31st, 2018, in the framework stipulated above, Amazon showed evidence of being overpriced in terms of expected future growth, while the Facebook stock evinced signs of being underpriced.

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1.0 Introduction

Since its development in the 1950s, the Internet has grown to become universally important, and today almost every single aspect of our lives revolves around it. The Internet has become a driving force in the development of the human race, and with its political, economic, social, and technological implications, it affects nearly every aspect of our society. The Internet has an impact on democratic elections, it helps corporations to grow and become more efficient, it provides a plurality of solutions when you need to pay your bills or transfer money to your friend, and most importantly, it connects all of us. In the words of the recently deceased Stephen Hawking, *"We are all now connected by the Internet, like neurons in a giant brain"*.

The fact that more than 3,5 billion people are connected through Internet gives rise to tremendous opportunities for businesses, and there is a particular kind of companies that have really embraced the new possibilities it provides. Often referred to as dot-com companies, or simply dot-coms, they put the Internet at the heart of their business model. Substantially, dot-coms leverage the Internet to create value for its customers, as well as for its shareholders. The utilisation of the Internet has made the dot-coms efficient and highly competitive, which in turn have made them some of the most successful companies in recent years. Their performance has not gone unnoticed by equity markets, and over the past five years, dot-coms have come to be some of the most prominent and promising investment opportunities in the market today. In particular, the five companies behind the acronym FAANG have become amongst the most popular stocks in the American market.

Facebook, Amazon, Apple, Netflix, and Google (Alphabet) hides behind the acronym, and the FAANG companies have seen a tremendous rise in the US equity market over the past five years, considerably outpacing the overall market. Figure 1.1 illustrates the development in the stock price of the FAANG companies, compared to the overall market as represented by the S&P 500 index. Generally, the US equity market has fared well in the period owing much to the Federal Reserve's quantitative easing (QE) program and historically low interest rates. The S&P 500 has grown 88% since early 2013, and the period constitutes one of the longest rallies in the history of the index. Nonetheless, the growth of the market fades in comparison to that of the FAANG companies. Most notably, Netflix has seen its stock grow an astonishing 1064% over the past five

years. Facebook and Amazon delivered growth rates of 499% and 427% in the same period, respectively, while Apple and Google experienced their stocks grow 254% and 212%. The extraordinary growth rates of the FAANG companies' stocks have led to euphemistic tendencies with investors, which at times have led to buying frenzies driving prices to new top notations. However, developments in the real economy are increasingly signalling that we might be approaching the end of the current business cycle, hence questions have arisen as to whether the stock valuations of the FAANG companies might, in fact, be driven by irrational exuberance.

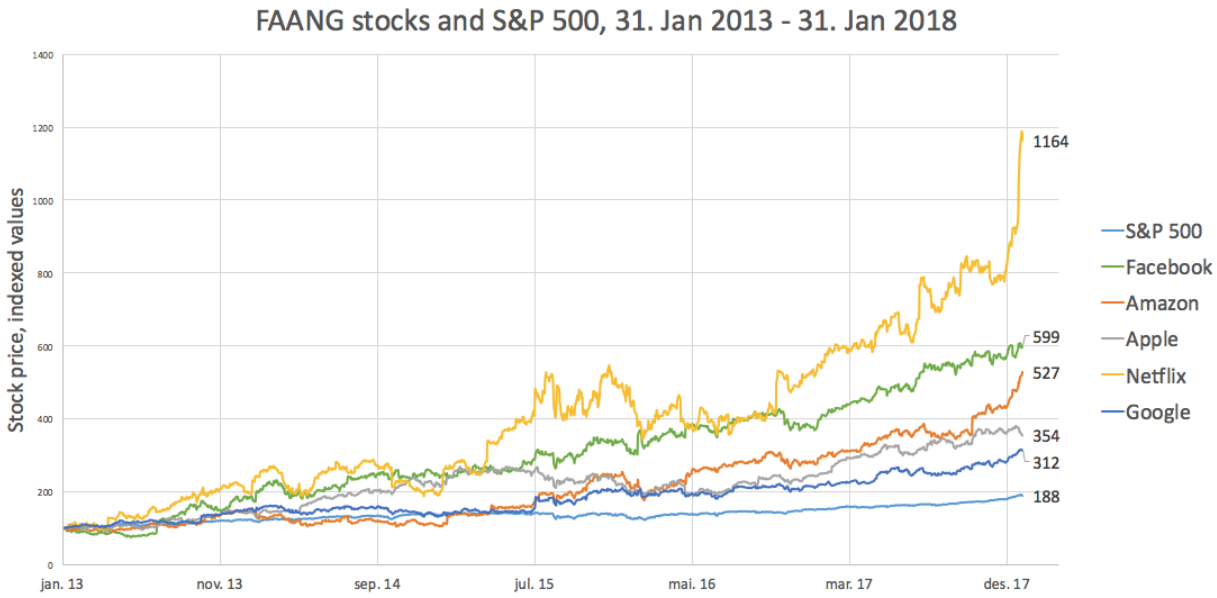


Figure 1.1: FAANG stocks and S&P 500 indexed to January 31st 2013 (Yahoo Finance, 2018).

Most notably, in this regard, is the recent increases in interest rates by the FED, and the coinciding flattening of the yield curve. The difference between short and long-term bond yields, i.e. the two-year and ten-year Treasury bond yields, remains one of the most accurate signals of a weaker economic outlook and has narrowed to its lowest level since the lead up to the financial crisis in 2008 (Wells, 2018). The development comes as investors up their expectations for interest rises in the near term from the FED, and fuels speculations that the economy is approaching the end of the cycle. The fact that the FAANG companies have seen tremendous growth in their stock prices, which is coinciding with negative signs from the real economy are causing uncertainty as to the future state of equity markets. Hence, it is interesting to investigate whether the stock market is valuing the FAANG companies appropriately. Is the surge in stock prices driven by irrational

exuberance on the side of investors, or do they reflect the future potential of the FAANG companies going forward? Have investors failed to realise that equity markets could possibly take a turn for the worse, or does their behaviour reflect the strength of Internet-based business models in today's society? These are some of the questions we set out to answer in this paper, as it is guided by the following research question:

"Does the growth rates implied by the stock price of Facebook and Amazon as of January 31st, 2018, reflect the potential of their businesses?"

The research question will be answered over the course of four chapters. Chapter 1 gives an account of the theoretical and methodological foundations of the paper. We make use of a reversed-engineered discounted cash flow (DCF) model to back out the growth rate for each FAANG company implied by their stock price as of January 31st, 2018. This enables us to circumvent some of the biggest flaws associated with DCF valuation models, e.g. forecasting accuracy. In the words of American businessman Charlie Thomas Munger, *"Many hard problems are best solved when they are addressed backward"*. The first part of Chapter 2 presents and analyses the results of the reverse-engineered DCF model, before selecting Facebook and Amazon as the two most interesting FAANG companies, which will receive further investigation. Subsequently, the chapter offers a short company description to set the scene before the strategic environment of Facebook and Amazon is analysed in detail to determine the strategic value drivers of the two businesses. The purpose of analysing Facebook and Amazon's strategic environment is to determine the potential of their respective business models. In Chapter 3, the implied growth rates derived from the DCF model is discussed in conjunction with the strategic value drivers to affirm whether the two stocks are over, or underpriced in terms of expected growth. In the end, the section draws a conclusion as to whether the implied growth rate of the market reflects the potential of Facebook and Amazon's businesses. Finally, the paper is concluded in Chapter 4.

2.0 Theory and methodology

As stipulated above, this paper sets out to investigate the valuation of the FAANG companies as of January 31st, 2018, focusing on Facebook and Amazon. By making use of a reversed-engineered DCF model, it will do so by utilising one of the most conventional valuation methods in an unconventional way. In this chapter we will introduce the reader to the theoretical foundations of our approach, as well as the methodological rationale, which together forms a sound research design designated to answer our research question.

2.1 Valuation framework

The valuation framework presented by Petersen et al. (2017) will form the basis for the paper, and it will help us to answer our research question in two ways. Firstly, it enables us to develop a method for estimating the expected growth in cash flows implied by the market. Secondly, it provides a theoretical and rational connection between the strategic and financial value drivers, on the one side, and the growth potential of cash flows on the other. Both are pivotal for our analysis of the FAANG companies, however, the connection between the value drivers and the growth potential of cash flows is especially important for our ability to answer the research question. The causal relationship between the underlying value drivers and firm value is depicted in Figure 2.1 (Petersen, Plenborg, & Kinserdal, 2017).

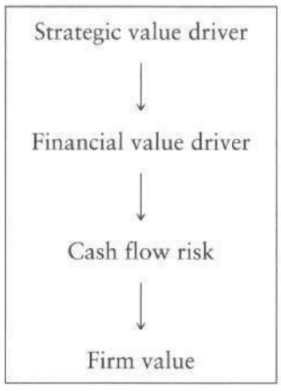


Figure 2.1: Causality between strategy and firm value

The strategic value drivers are strategic or key operational actions taken to improve firm value. Ultimately, the strategic value drivers create firm value and can be seen as input factors as such.

Examples of strategic value drivers include entrance to new markets, development of new products, and outsourcing (Petersen et al., 2017 p. 252). Importantly, the strategic value drivers have an effect on firm value that can be measured in the financial value drivers. For instance, entering a new market is expected to impact revenue growth positively, and all else equal lead to a higher free cash flow to the firm. Put simply, a strategic value driver impact firm value in a way that can be measured in a financial value driver. Implicitly, this means that a financial value driver does not create value in itself. However, if a financial value driver is positively affected by a strategic value driver it will also affect cash flow and firm value positively (Petersen et al., 2017 p. 253).

Getting the strategic and financial value drivers right is not sufficient to arrive at a sensible estimate of firm value. One must also determine the degree of risk associated with the firm's cash flows and incorporate a model that adjusts for risk. For our purposes, risk will affect the level of growth in cash flows. Higher levels of risk will be reflected in the cost of capital implemented in our model as the weighted average cost of capital (WACC). The reverse-engineered DCF model is specified to determine the enterprise value of the FAANGs, hence WACC is the appropriate rate for discounting the free cash flows to the firm (Petersen et al., 2017, p. 305). We will discuss this in more detail below, but for now, we confine the discussion to providing the overall picture.

As a result of our implementation of an implied growth model, as opposed to an intrinsic value model, our method will depart from a traditional valuation when it comes to the sequence of analysis. In the first part of the analysis, we implement the reversed-engineered DCF model in the case of the FAANG companies with the purpose of determining the expected growth in FCFF implied by the market. Based on the results of the DCF model, Facebook and Amazon is selected for further investigation. Subsequently, the strategic environment of the two companies will be analysed in order to determine the strategic value drivers affecting financial performance. Finally, the strategic and financial value drivers will be discussed against the implied growth rates. The final step will allow us to see the underlying value drivers of the business in cohesion with the implied growth rates, and ultimately enable us to answer the research question. Please consult Figure 2.2 for a depiction of the sequence of analysis.

2.2 Equity valuation - choice of approach

The main purpose of equity valuation is to estimate the value of a firm. Importantly, any valuation model rests on the assumption that the fundamental value of the company is driven by the fundamentals of the firm's underlying business. In general, there are three approaches to valuation (Damodaran, 2012). Firstly, in discounted cash flow valuation, a company's value is related to the present value (PV) of its expected future cash flows. Secondly, in relative valuation, the value of a company is estimated based on the pricing of comparable firms along variables such as earnings, cash flows, book value or sales. Finally, contingent claim valuation uses option pricing models measuring firm value that share the characteristics of options. Outcomes may vary significantly across the different approaches, hence in the following, we will explain the choice of a DCF approach in our assessment of the FAANG companies.

A relative valuation approach is deemed insufficient for two reasons. Most importantly, a relative valuation model would build in structural errors of over-, and underpricing present in the market leaving us ignorant to a possible pricing bias relating to the FAANG companies. As a result, the approach is misaligned with the motivation of this study and would not allow us to answer our research question to satisfaction. Secondly, the uniqueness and particularities of the FAANG companies in terms of size and scope makes it difficult, if not impossible, to find comparable firms. Without peers reflecting the underlying business dynamics of the FAANGs, a relative valuation would yield biased estimates. In a similar vein, contingent claim valuation is deemed undesirable as no option describing the business dynamics of the FAANGs are readily available to us. To the best of our knowledge, the operationalisation of the approach would be impossible and more suitable for looking at natural resource companies, troubled firms, or start-ups. In the end, a DCF approach stands out as the obvious choice for the purposes of this study.

The most attractive feature of the DCF approach is its capacity to be reversed-engineered to calculate implicit growth. When the DCF model is inverted it takes the current share price and backs out the growth rate in cash flows implied by the market. This allows us to bypass one of the main critiques of DCF valuation, i.e. the difficulties of predicting the future and the inaccuracy of forecasting. Without having to estimate future cash flows we avoid what is usually one of the biggest sources of error in valuing a firm with the DCF model. However, it is important to note that the model does not overcome the hurdles of projecting capital expenditures, and the

theoretically founded perpetual growth assumption. In particular, assuming that the FAANGs are *going concern* companies is a highly theoretical assumption, however, we find it to be the best viable alternative for treating the terminal period. We will argue that assuming that the sustainable growth rate of the FAANGs will gravitate toward the long-term economic growth of about 4% is preferable over using a terminal value multiple.

2.2.1 Specification of DCF model

The DCF model can be specified to estimate either the enterprise value or the equity value. The difference is that the latter values the equity holders' claim against cash flows, while the former estimates a value for all investors (Petersen et al., 2017). Theoretically, the two methods yield the same results, however, matching equity cash flows with the appropriate cost of equity is more challenging in practice. As a result, the enterprise DCF model will be applied to estimate implicit growth, and the cash flows evaluated at the weighted average cost of capital (WACC).

The model relies solely on the flow of cash in and out of the company and will be specified as a two-stage model. The two stages of the model support the notion that a company might enjoy atypical high or low levels of growth in the short run. In the long run, the growth of the market will stagnate and competition intensifies resulting in a more sustainable level of growth. The enterprise DCF model is specified as follows:

$$Enterprise\ value_0 = \sum_{t=1}^{n} \frac{FCFF_t}{(1+WACC)^t} + \frac{FCFF_{n+1}}{WACC - g} * \frac{1}{(1+WACC)^n}$$

FCFF = Free Cash Flow to Firm
WACC = Weighted Average Cost of Capital
g = constant growth in FCFF in terminal period
n = numbers of years with (low/high) growth

For our purposes, it is important to ensure consistency between the cash flows and the discount factor. FCFF is calculated as the cash flow available to owners and creditors, hence it is measured before financial items. As a result, FCFF is not related to the capital structure of the company, which is captured and accounted for in the WACC.

Regarding the terminal value, we have chosen to calculate it with the perpetual growth method. There are arguments for simply using a terminal value multiple instead. For instance, the suitable price to FCFF ratio varied from 9,38 to 14,7 in 2017, and the two would imply very different growth rates for the FAANGs (CSIMarket, 2018).An alternative would be to calculate an average 2017 multiple, but still, we find it feasible for our purpose to use the more theoretical supported perpetual growth method.

The model obtains an enterprise value for each of the FAANG companies as specified above, however, we wish to arrive at the value of equity. In order to arrive at the value of equity we simply deduct net interest-bearing debt from the estimated enterprise value. Thereafter, dividing the value of equity with the number of shares outstanding yields the models estimate of the share price. The reverse-engineering is performed by utilising the goal-seek function in Excel. After the model is set up in Excel with all the proper references, the goal-seek function allows us to set the target stock price as of January 31st 2018 and solve the model by changing the growth rate. This is done for all the FAANGs individually to obtain estimates for the growth rate implied by the market. Please consult Appendix A for the precise calculations.

2.2.2 Required rate of return on Free Cash Flow

The weighted average cost of capital (WACC) is the capital providers required compensation for the opportunity cost associated with giving up alternative investments. A firm's WACC is estimated by accounting for all capital providers' required rate of return and share of total capital (Petersen et al., 2017, p. 341). Hence it is the appropriate discount rate to the free cash flows to the firm as utilised in the enterprise DCF model outlined above.

Arguably, WACC should be estimated for each year separately and thus reflect that particular year's capital structure. However, following common practice, we will calculate one WACC each for the FAANG companies to use for the entire valuation period. In accordance with Modigliani & Miller's Proposition 1, a firm's value will be independent of capital structure, with the implication being that WACC should not change over the forecasting period (Modigliani & Miller, 1958). While acknowledging the critique that has been raised with regards to the

proposition, we will for the purpose of simplicity confine ourselves to using only one WACC for each firm in this paper. The WACC for each company is calculated as follows:

$$WACC = r_d * (1 - t) * \frac{NIBL}{NIBL + Equity} + r_e * \frac{Equity}{NIBL + Equity}$$

NIBL = Market Value of Net Interest-Bearing Liabilities
Equity = Market Value of Equity
r_d = Required Rate of Return on NIBL
r_e = Required Rate of Return on Equity
t = Corporate Tax Rate

This WACC formula accounts for equity and debtholders, and the parameters of the WACC formula and their computation is discussed in the following sections.

2.2.3 Required Rate of Return on Equity

There are three factors determining the return requirements of equity holders in a firm; the risk-free rate of return, the market risk premium, and the company risk relative to the market risk. These are not observable in the market, so to overcome this hurdle we rely on models for estimating the cost of equity. The most widely used model for this purpose is the capital asset pricing model (CAPM), which describes the relationship between risk and expected return for a company. Although the CAPM model has a poor track record in empirical tests it represents a theoretically sound approach to estimate the return requirement of equity holders (Petersen et al., 2017, p. 345). The CAPM model looks like the following:

$$r_e = r_f + \beta_e * (r_m - r_f)$$

r_e = Required Rate of Return on Equity
r_f = Risk-free Rate of Return
β_e = Systematic risk on Equity
r_m = Return on Market Portfolio

It is important to note here that the risk-free rate and the market risk premium is equal for all companies, while beta will vary across the FAANGs.

In essence, the popularity of the CAPM model comes down to its simplicity and the failure of more complex models to deliver better estimates of expected returns (Damodaran, 2012 p. 77). When treating certain sectors like commodities, and particular segments like closely held companies or illiquid stocks, it might be justifiable to opt for more complex models like the arbitrage pricing model (APM), multifactor models or alternative distribution models. However, as we consider the most widely held and publicly traded technology companies in the US market, we conclude that the simplicity of the CAPM model is desirable at the expense of a slight increase in predictability of returns. In the next sections, we will look at how we will estimate the risk-free rate, the market risk premium, and the beta values for the FAANG companies.

2.2.4 Risk-free rate

Conceptually, the risk-free rate represents the expected return associated with an investment where the investor takes on zero risk. As no such investment exists in the marketplace we will use government default-free bond rates as a proxy for the risk-less return. In order to support a sound research design, the government bond will be denominated in the same currency as the cash flows valued. Ideally, we would discount each cash flow with a government bond that matches the maturity of the cash flow, however, this method is difficult to implement. Therefore, we will choose a single yield to maturity to apply on all cash flows that matches the forecasting period in the DCF model. Based on these arguments we end up using the 10-year US Treasury bond rate as a proxy for the risk-free rate. At the time of writing the risk-free rate was **2,79%** (U.S. Department of the Treasury, 2018).

2.2.5 Market risk premium

The market risk premium, hereafter MRP, is the difference between the risk-free rate and the expected return on the market portfolio. The size of the MRP illustrates what investors require as a return in order to invest in the market portfolio as opposed to the risk-free investment. The issue of determining the size of the MRP is one of the most contentious and fiercely debated topics within finance, and the most common method is to base estimates on historical data assuming that historical excess returns are a reasonable approximation of the future. A historical study of the US

stock market shows that the average annualised total return for the S&P 500 index over the past 90 years is 9,8% (Santoli, 2017). Following the CAPM formula, in this case we get that the MRP is **7,01%** (see Appendix B for calculation).

2.2.6 Estimation of Beta

The final parameter needed to estimate the cost of equity with the CAPM model is beta. According to theory the expected return is driven by the firm's beta, which essentially is a measure of relative risk of the specific company compared to the market portfolio (Thomson One, 2018). Once again, we will make use of historical data when estimating beta values for the FAANG companies. Following common practice our estimation of beta values is obtained by regressing stock returns of the individual firm, R_i, against market portfolio returns, R_m:

$$R_i(t) = a_i + \beta_i R_m(t) + \varepsilon_i(t)$$

R_i = Stock return

α_i = Risk-free rate

β_i = Stock's sensitivity to the market index

R_m = Market return

ε_i = zero-mean noise in security return

In our regression, we will make use of the S&P 500 index as proxy for the market portfolio, which is consistent with the fact that the FAANGs are traded at the New York stock exchange (NYSE). Beta calculations for the FAANG companies will be presented in the analysis.

2.3 Strategic Analysis

A strategic analysis is conducted to look into important aspects influencing cash flow potential and risk. The analysis starts by setting the scope of the analysis by analysing the macro and micro perspective. Such an external analysis provides an understanding of the market potential and the company's opportunities and threats. However, the analysis does not look into what market shares the company will gain. It is therefore inevitable to analyse the company's competencies and competitive advantages.

A relatively simple analysis relying on past performance is conducted if the market is stable. If the market is not stable, a more thorough analysis is conducted, and past performance will no longer be of importance in the analysis. Furthermore, with an unstable market, forecasting is likely based on scenarios rather than basic calculations which are the case with a stable market (Petersen et al., 2017).

2.3.1 External analysis

The external analysis is conducted through different perspectives to map competitive forces which may affect the company. The external analysis is divided into a macro- and a micro perspective.

2.3.1.1 Macro perspective

The macro factors focus on the wide context where the market operates and emphasises the development of the society. PEST is an acronym for political, economic, social and technological and the analysis investigates how each of the factors will affect the company's performance (PestleAnalysis.com, 2013). When doing the PEST analysis, one has to a) define how and to what extent the factors influence the company, b) when the effects occur and c) how the company can meet the changes as well as possible. The outcome of the PEST-analysis is key drivers of change. Key drivers are the factors that will affect several parts of the company's surroundings and further development of the industry and offers both possibilities and threats (Alexandru Bîrsan, Darko Shuleski, & Cristea, 2016).

2.3.1.2 Limitations of the PEST analysis

Although the PEST offers a great overview of the main environmental drivers affecting a company, it comes with some limitations. First, the factors defined in the PEST analysis are dynamic and changes continuously, even more today than when the framework was designed in 1967 (MindTools.com, 2018). In view of the fact that the macroeconomic factors change more rapidly speed today, analysing the macro surroundings over a longer period of time becomes increasingly challenging. The analysis is based on the conditions applicable at a specific point in time and can loosen strength and accuracy if the factors change (Needle, 2010 p. 55-56). Further, collecting all relevant data can be both costly and time-consuming, and the lack of easily available updated information leas to many assumptions (Thakur, 2010).

2.3.1.3 Micro perspective

Analysing the micro perspective serves as a fundamental point in understanding a company's power, participation, addiction and access to a market. In this paper, the Porter's Five Forces framework is used to analyse this specific perspective (Porter, 1979). The attractiveness, level of competition and the profit in a defined market form the future of the players and is therefore crucial to understand. The framework considers the markets threat of new entrants, the buyer´s power, the threat from substitute products, the supplier´s power and the rivalry among existing competitors. The aim of the analysis is to map the scope of the market and the company's competitive position (Percy & Elliot, 2009 p. 164). It is important to note that the Porter's five forces framework was developed to assess competitive intensity of a market, however as we consider the FAANGs we will focus the analysis on individual firms rather than an overall assessment of the market.

2.3.1.4 Limitations of the Porter's Five Forces analysis

Even though the Porter's Five Forces analysis helps to better understand the company's current situation, it comes with some limitations. For instance, the analysis does not take governmental issues into consideration, nor does it consider other stakeholders' (non-market forces) involvement. Further, the analysis suffers from the same issue as the PEST analysis when it comes to being relevant in a dynamic market. Additionally, the framework was made to cover relatively static and simple market structures. Today, it can be difficult to define both the industry and the market (Freemanagementbooks, 2012).

2.3.2 Internal analysis

The internal analysis in this paper is backed by Barney's VRIO-framework (Barney & William B. Hesterly, 2015 p. 88), but will be presented as strengths and weaknesses according to the SWOT-framework (MindTools, 2015).

2.3.2.1 VRIO

The principle behind the VRIO-framework is to analyse the company's internal strengths and weaknesses. The framework is made to identify resources as valuable, rare, inimitable and organised. After conducting the VRIO-analysis one will have a clear opinion of the resource and if it contributes to a sustainable competitive advantage, a temporary competitive advantage, a

competitive parity or a competitive disadvantage. The frameworks help the company understand what makes the company good and where they can improve. The long-term goal is to achieve sustainable competitive advantages, which in turn will make it difficult for competitors to compete (Barney & William B. Hesterly, 2015 p. 88-89)

2.3.2.2 Limitations of VRIO

While making the VRIO-framework, Barney presented what he considered the three main limitations of the framework (Barney, 2007). First, a market is dynamic, and one cannot predict if a sustainable competitive advantage will constitute a lasting advantage. Second, the framework does not take into consideration the leaderships ability to develop competitive advantages. A sustainable competitive advantage cannot be accomplished by all companies, because if the leadership would be able to develop competitive advantages without problems, they would be imitable. At last, Barney presents the access to information as a limitation. The VRIO-framework is based upon a company's internal resources, and therefore the validity of the data must be questioned.

2.3.2.3 SWOT

SWOT is an acronym for strengths, weaknesses, opportunities and threats and was first presented by Albers S. Humphrey in the 1960s (MindTools, 2015). The framework is used to identify and summarize internal and external factors affecting an organization. Whereas strengths and weaknesses are considered controllable internal factors, opportunities and threats are considered external factors over which one has, by definition, no control. The SWOT framework is a balance sheet of the strategic position of a company and is often used to summarize important results from other internal and external analysis (Jönsson, S (ed.), Mouritsen, J (ed.), Israelsen, 2005). The SWOT-analysis is an easy way to discover opportunities caused by environmental changes and internal strengths, as well as threats caused by environmental changes or weaknesses within the organization (MindTools, 2015).

2.3.2.4 Limitations of the SWOT-analysis

Although the SWOT-framework is a well-used tool, it represents a simplified analysis and therefore comes with several limitations. One commonly discussed problem is the model´s dependency on other analysing tools. The SWOT analysis lets you present a company's strengths, weaknesses, opportunities and threats, but does not explain how they are interconnected and how

to analyse each of them. Therefore, According to Popescu & Scarlat (2015), the SWOT-analysis does not satisfy as a framework for strategic analysis in itself, but needs to be supplemented by other frameworks (POPESCU & SCARLAT, 2015). Other limitations of the SWOT-analysis are its dependence on subjective decisions, the lack of accounting for two-sided factors and the problems it can cause if an organization view circumstances as too simple and may overlook key strategic problems (Osita, 2014).

2.4 Scope and limitations

Firstly, it is important to state that this paper is an empirical investigation of the FAANG companies, and the research design is developed solely to serve this purpose. Importantly, this implies that the analysis and results are valid for the FAANG companies, but not necessarily for other companies. The paper cannot be used to infer its findings on other dot-coms or tech companies in general, and this is outside the scope of the paper. As such the paper is purposefully regarded as a case study of the FAANG companies, focusing on Facebook and Amazon.

To the best of our knowledge there are no other studies that implement a reverse-engineered DCF model on the FAANG companies, hence we provide a new perspective on the valuation of fast growing Internet companies. The paper is not claimed to be seminal, but it is inventive in its use of the well-established DCF model on modern Internet companies.

The paper is based primarily on secondary sources as first-hand information is available only to a lesser degree. Of course, as large public companies traded on NYSE, we also find important information disclosed by the companies online. Most importantly, the yearly reports for the financial year ending December 31st 2017 is of particular importance. However, in order to analyse the FAANGs properly we are dependent on other secondary sources. Industry statistics, consensus estimates, and the broader discourse are important in this regard, and will be analysed with data from Statista, Thomson One and Datastream, and online newspapers (such as the Financial Times). We place our confidence in the information acquired from such third-party providers, while remaining critical in assessing their validity.

3.0 Analysis

3.1 Implicit growth analysis

Table 3.1 depicts the output of the reverse-engineered DCF model, and displays the growth rates implied by the stock price of the FAANG companies as of January 31st 2018. The computation indicates that Amazon is valued with by far the highest expected future growth at 39,07%, while Facebook has the second highest implied growth rate of 6,97%. The lowest growth expectations are found for Google (Alphabet) and Apple with 6,09% and 5,92%, respectively. Due to its negative FCFF as of January 31st, 2018, and unwieldy sensitivity to the assumptions imposed by us as researchers, Netflix was excluded from the analysis. The exclusion of Netflix was found to be unfortunate as it showed evidence of being priced with considerable growth over the coming years, however, the results remained invalid and hence the exclusion found to be necessary.

Implied growth rates			
Facebook	Amazon	Apple	Google
6,97 %	39,07 %	5,92 %	6,09 %

Table 3.1: Implied growth rates derived from the reverse-engineered DCF model.

In 2017, Amazon experienced a FCFF of 6,48 billion USD, which was a 33,3% decrease compared to 2016 (Amazon Inc., 2018). If the implied growth rate of 39,07% is to be taken into consideration, the market estimates Amazons 2018 FCFF to 9,01 billion USD and enormously 175,318 billion USD in 2027. As seen in Figure 3.1 below, Amazon's implied FCFF is strongly exponential and the FCFF growth will have to increase with several billion USD every year in order to meet the market expectations. The estimations for Amazon is derived using a WACC of 13,94% (see Appendix B). The level of the WACC is high, however, it is believed to reflect the underlying business of the company. An important explanatory factor for this is the relatively high beta estimation of 1,62. Amazon's beta reflects the fact that over the past couple of years the stock has been more volatile than the market, while at the same time it tends to move in the same direction as the S&P 500 index.

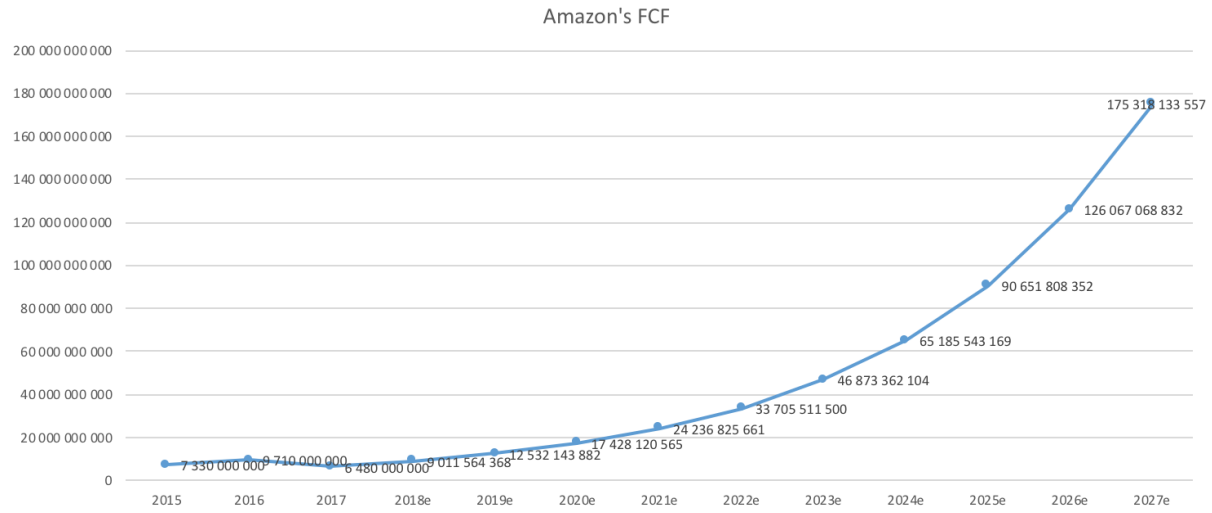


Figure 3.1: Amazon's FCFF growth implied by the reverse-engineered DCF model.

Facebook is the FAANG company with the second largest implied growth rate. As Figure 3.2 illustrates, the market expects the company to increase its 17,48 billion USD FCFF with 6,97% each year, reaching 34,296 billion USD in 2027. Interestingly, for the last three years, Facebook have experienced 67,5%, 91,1% and 50,5% growth in FCFF, respectively. The implied growth rate of 6,97% seems rather small in comparison to what they have experienced in previous years, but the company still has to increase its FCFF with 149%, in total, over the next ten years. The estimations for Facebook is derived using a WACC of 9,31%. It is important to note that the company does not have net debt, hence the cost of capital solely consists of the return demanded by equity holders. The fact that Facebook does not have net debt reflects the relative high business risk typical for a tech company, thus being balanced by having less financial risk. As opposed to Amazon, the beta estimation for Facebook of 0,81 indicates that the stock has been less volatile than the S&P 500. The implication is that our historical estimation finds Facebook less risky than Amazon.

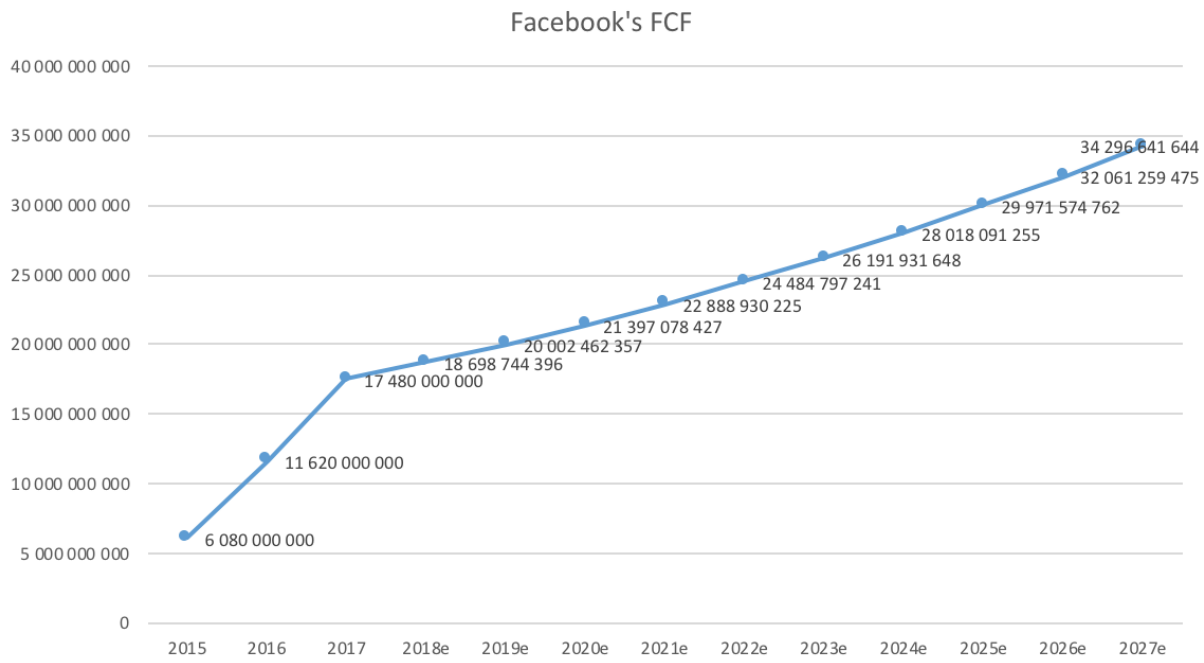


Figure 3.2: Facebook's FCFF growth implied by the reverse-engineered DCF model.

When it comes to Apple, their implied FCFF growth rate is 5,92%. A yearly growth of 5,92% is well above the estimated growth of the overall economy, but Apple's previous accounting numbers provide evidence that it can be achievable (Apple Inc., 2018). Unlike its FAANG competitors, Apple has experienced a two-year consecutive decrease in FCFF, from 70 billion USD in 2015 to 51,15 billion USD in 2017. The decrease is a result of slower hardware sales and increased R&D and acquisition costs (Sun, 2016). The estimated growth rate implies Apple will surpass 70 billion USD FCFF once again in 2023, before reaching 90,9 billion USD in 2027. The estimations for Apple are based on a WACC of 10,97%. The riskiness of Apple as it relates to the volatility of the S&P 500 is found historically at a level between Facebook and Amazon with a beta of 1,24.

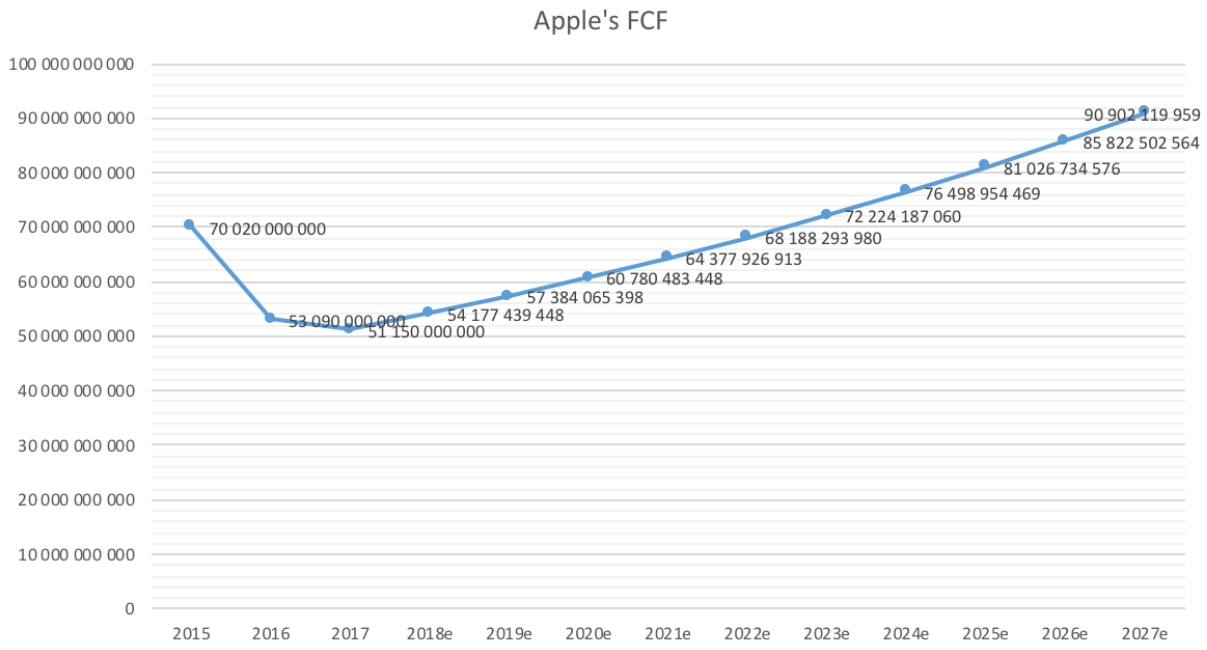


Figure 3.3: Apple's FCFF growth implied by the reverse-engineered DCF model.

The last FAANG company's implied FCFF growth to be presented is Alphabet (Google). Like its peers, also Alphabet's FCFF is expected to increase significantly the next 10 years. The 2017 FCFF of 23,91 billion USD is expected to grow with 6,09% per annum, reaching 25,36 billion in 2018 and 43,17 billion in 2027. From 2014 until 2016 Alphabet have reported FCFF growth of respectively 41,1% and 60,3% before a minor decline inn 7,4% in 2017. These estimations are derived using a WACC of 13,66%. Substantially, Google displays the same level of volatility as the S&P 500 with an estimated beta of 1,06, which implies that the stock moves with the market.

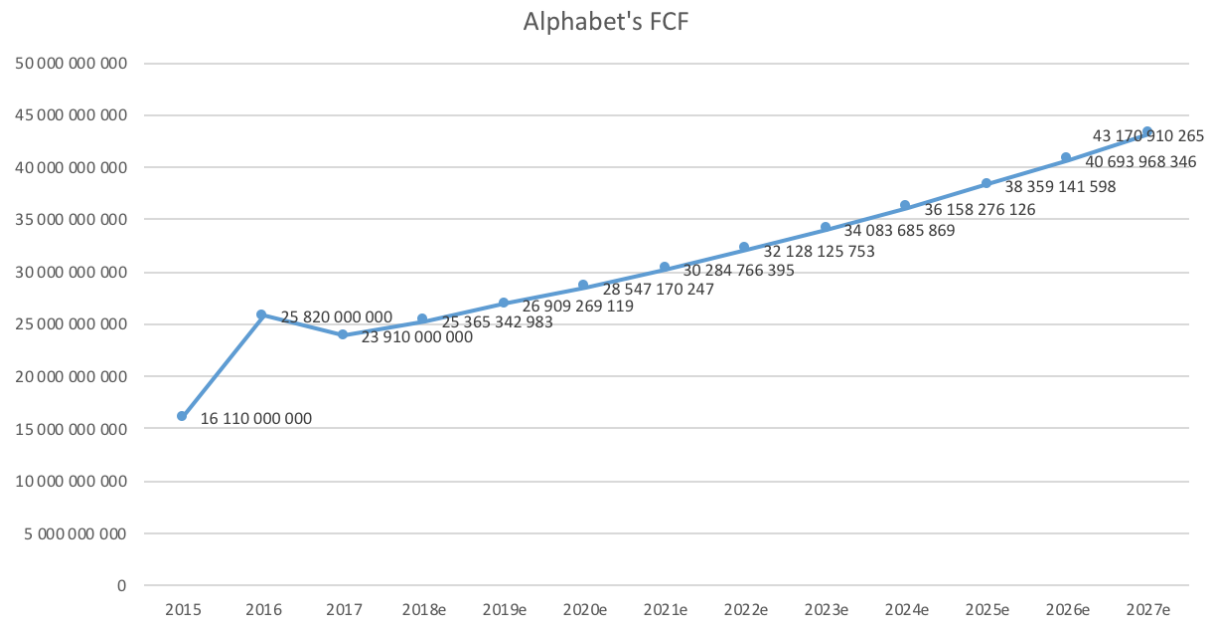


Figure 3.4: Alphabet's FCFF growth implied by the reverse-engineered DCF model.

To best answer our research question, two of the FAANG companies will be chosen for a thorough strategic analysis. The highest implied growth rate of our analysis is Amazon's 40,95%. Not only does Amazon have the highest implied growth rate, they also have the highest recorded growth rate of FCFF within a single year; 275,9% in 2015. Concludingly, Amazon is our first pick for further analysis.

When it comes to Facebook, Apple and Alphabet, all of them have an implied growth rate of FCFF between 5% and 7%. To choose one from the other, a deeper look at previous FCFF history is necessary. From 2014 to 2017, Facebook managed to increase their FCFF with 381,7%. Alphabet, on the other hand, increased their FCFF with 109,4% in the same period. Facebook has shown an impressive skill of improving their FCFF in recent years, and if they manage to continue to grow their FCFF somewhere close to the same rate, today's implied growth rate may actually be too low. Therefore, Facebook is our second pick for further analysis. Figure 3.5 and 3.6 displays the full reverse-engineered DCF model for Facebook and Amazon. The following strategic analysis and discussion will focus on assessing Amazon and Facebook's growth potential.

Implied growth rate of Facebook			
Free Cash Flow	17 480 000 000 *a)*	**(E)10 year growth**	6,97 % *c)*
Shares Outstanding	2 395 922 000 *a)*	**WACC**	9,31 % *b)*
Net Debt	-41 711 000 000 *a)*	**Terminal growth + inflation**	4,00 % *d)*

Year 2018+	FV	DF	DCF
1	18 698 744 396	0,91	17 106 591 213
2	20 002 462 357	0,84	16 741 159 206
3	21 397 078 427	0,77	16 383 533 580
4	22 888 930 225	0,70	16 033 547 573
5	24 484 797 241	0,64	15 691 037 987
6	26 191 931 648	0,59	15 355 845 112
7	28 018 091 255	0,54	15 027 812 646
8	29 971 574 762	0,49	14 706 787 629
9	32 061 259 475	0,45	14 392 620 368
10	34 296 641 644	0,41	14 085 164 366

Sum of DCF	155 524 099 680
Terminal Value - Perpetual growth	265 394 786 194
Total Equity Value	462 629 885 874
Reverse DCF price	193,09
Market price	193,09 *e)*

a) From annual report 2017
b) Calculated, see appendix B
c) Reverse-estimated through goal seek
d) Target inflation rate of 2% + long term GDP growth rate of 2%
e) Closing price 31.01.2018

Figure 3.5: Reverse-engineered DCF analysis of Facebook.

Implied growth rate of Amazon			
Free Cash Flow	6 480 000 000 *a)*	**(E)10 year growth**	39,07 % *c)*
Shares Outstanding	484 107 000 *a)*	**WACC**	13,94 % *b)*
Net Debt	13 161 000 000 *a)*	**Terminal growth + inflation**	4,00 % *d)*

Year 2018+	FV	DF	DCF
1	9 011 564 368	0,88	7 908 966 740
2	12 532 143 882	0,77	9 653 048 594
3	17 428 120 565	0,68	11 781 734 608
4	24 236 825 661	0,59	14 379 837 523
5	33 705 511 500	0,52	17 550 872 946
6	46 873 362 104	0,46	21 421 183 701
7	65 185 543 169	0,40	26 144 973 674
8	90 651 808 352	0,35	31 910 451 728
9	126 067 068 832	0,31	38 947 330 457
10	175 318 133 557	0,27	47 535 978 576

Sum of DCF	227 234 378 547
Terminal Value - Perpetual growth	478 175 838 638
Total Equity Value	692 249 217 185
Reverse DCF price	1429,95
Market price	1429,95 *e)*

a) From annual report 2017
b) Calculated, see appendix B
c) Reverse-estimated through goal seek
d) Target inflation rate of 2% + long term GDP growth rate of 2%
e) Closing price 31.01.2018

Figure 3.6: Reverse-engineered DCF analysis of Amazon.

3.2 Strategic Analysis of Facebook

In this section, we will explore the internal and external factors affecting Facebook's strategic position. The section starts with a short company presentation to develop an understanding of the company's business model. Thereafter, the internal factors will be analysed in a VRIO-framework, while the PEST- and Porter's five forces-frameworks will be used to analyse the external factors of Facebook's strategic environment. The main purpose of the analysis is to determine the important strategic value drivers, which will be used later to assess Facebook's ability to deliver on the growth rate of 6,97% implied by the market. This section is concluded with a schematic illustration of the most important strategic value drivers in a SWOT diagram.

3.2.1 Company presentation

It is imperative that we understand the dynamics of Facebook's business model, and particularly how it creates value, in order to determine the important factors influencing the company's strategic position. Facebook Inc. owns four social platforms, i.e. Facebook, Messenger, WhatsApp, and Instagram, in addition to its virtual reality technology and content business, Oculus. Facebook stands out by being the broadest platform allowing users to share a wide range of data with others. The platform allows users to link with each other based on real-life relationships, as well as topical interests that are not supported by real-life relationships. The company describes the service as:

> *"(..) enabling people to connect, share, discover and communicate with each other on mobile devices and personal computers"* (Facebook Inc., 2018 p. 5).

Instagram is similar to Facebook in these respects, however, it distinguishes itself by focusing the sharing of visual stories as photos, videos and direct messages. Messenger and WhatsApp are pure messaging services that allow users to communicate one-on-one and in user-defined groups. Linkages between users in the messaging services are more personal as they are more frequently used to communicate with friends and family, and to a lesser degree actors outside the user's social sphere, e.g. celebrities and corporations. All Facebook Inc.'s platforms are free to use, however, Facebook, Instagram, and to a certain degree also Messenger have been monetised by opening up for advertisers to promote their products within the user interface, as well as third-party integration. In the assessment of the business model of Facebook Inc. we will exclude

WhatsApp (as it is not monetised), and furthermore, we will not treat the minor particularities differentiating Facebook, Instagram and Messenger as they are irrelevant for assessing Facebook Inc.'s strategic position. A generic representation of the social network business model deployed by Facebook is depicted in Figure 3.7 below.

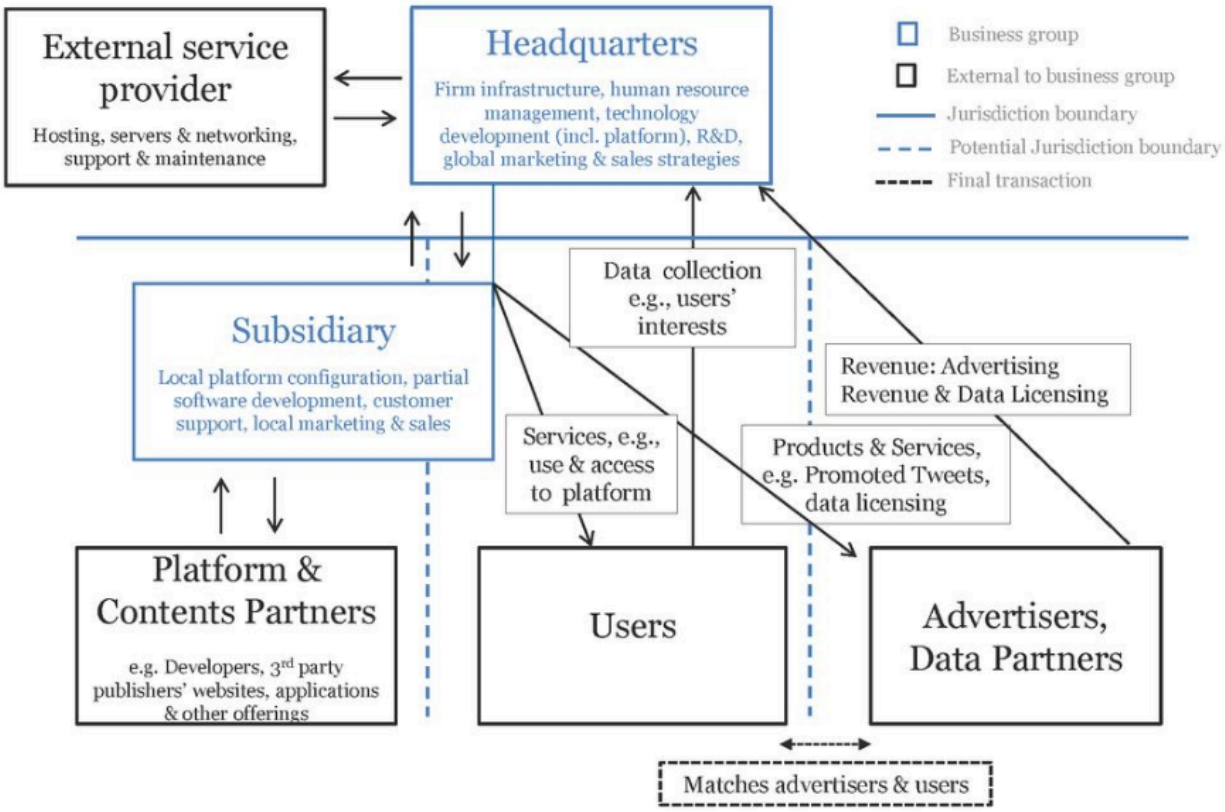


Figure 3.7: Facebook's social network business model (OECD, 2018 p. 45).

In this model, the social networks are multi-sided platforms that collect user data and provides advertising services in order to serve two markets. The first objective, on the one side of the market, aims to provide a platform for users to connect to one another and share content (OECD, 2018). Purposefully, this market can be envisioned as the market for social media services where various platforms compete with each other for the time users spend connecting with each other online. As discussed above, this side of the market has not been monetised by Facebook and hence competition evolves around building scale in order to support earnings at the other side of the market.

The second objective, on the other side of the market, is to enable marketers to implement targeted advertisement towards desired audiences, i.e. the users on the other side of the market, effectively and efficiently. This market overlaps with the traditional advertising industry, but more specifically relates to digitalisation and the increasingly important online presence of all companies across all industries, also in terms of advertisement. The social networks have a variety of possible advertising spaces, and it exceeds traditional channels in its ability to target specific audiences due to data gathered about users on the other side of the market.

The two objectives of linking users and providing advertising services are complementary as the first objective provides market research for the second (OECD, 2018). Throughout their interaction with the social network, users provide data in the form of geographic and demographic information, and behavioural data to name a few. This information is marketable. From Facebook perspective, the user communities on its social platforms are of value because they are attracting the important commercial customers of the company: advertisers and developers.

3.2.2 Internal factors

3.2.2.1 Strengths

Facebook's competitive advantages are derived from three main resources, which are illustrated in Table 3.2. Firstly, having the world's largest social media user database creates vast opportunities for the company, and it poses as Facebook's single most important resource. Secondly, the Facebook brand has grown to become one of the world's most recognised. Hence, the brand has become a defining feature of the company's success and will remain so also in the future. Finally, strong and sustainable financial performance has become a recurring characteristic and a competitive advantage for Facebook. When benchmarked against the other FAANG companies, Facebook stands out as the most profitable of them all.

	Valuable	Rare	Costly to imitate	Organized	Competitive advantage?
Social media user database	Yes	Yes	Yes	Yes	Sustainable competitive advantage
Brand image	Yes	Yes	Yes	Yes	Sustainable competitive advantage
Strong financial performance	Yes	Yes	Yes	No	Temporary competitive advantage

Table 3.2: Summary of VRIO-analysis for Facebook.

Social media user database

Having the world's largest social media user database provides Facebook with a sustainable competitive advantage, which strengthens the company's strategic position considerably. The database is crucial as it is the only resource that directly generates revenue for the company. In this perspective, the database includes both the personal information gathered on users, as well as the advanced algorithms used to organise that information to provide targeted advertisement for marketers. Substantially, the database connects the social media market and the digital advertising market, and hence allows the company to monetise their success as a social media platform.

Over the past years, Facebook has come to dominate the social media market. Facebook, which is the largest platform, has 2,1 billion monthly active users (MAUs). This makes it by far the most popular platform in the world (see Figure 3.8). However, the company's reach goes far beyond its most popular platform. In a shared third place globally, Messenger and WhatsApp, both Facebook subsidiaries, each has 1,3 billion MAUs. The final social media platform making up the incorporation, Instagram, has 800 million MAUs. As a result, Facebook's social media platforms have a staggering 5,6 billion non-unique MAUs between them, making it the undisputed market leader in social media (Statista, 2018h). These numbers are unprecedented, and the share magnitude of Facebook's database makes it stand out from its competitors. Despite the global reach, these platforms provide little value to Facebook in themselves as their use is not monetised.

Value is created not in the social media market, rather it serves as input to the services the company provides in the digital advertising market.

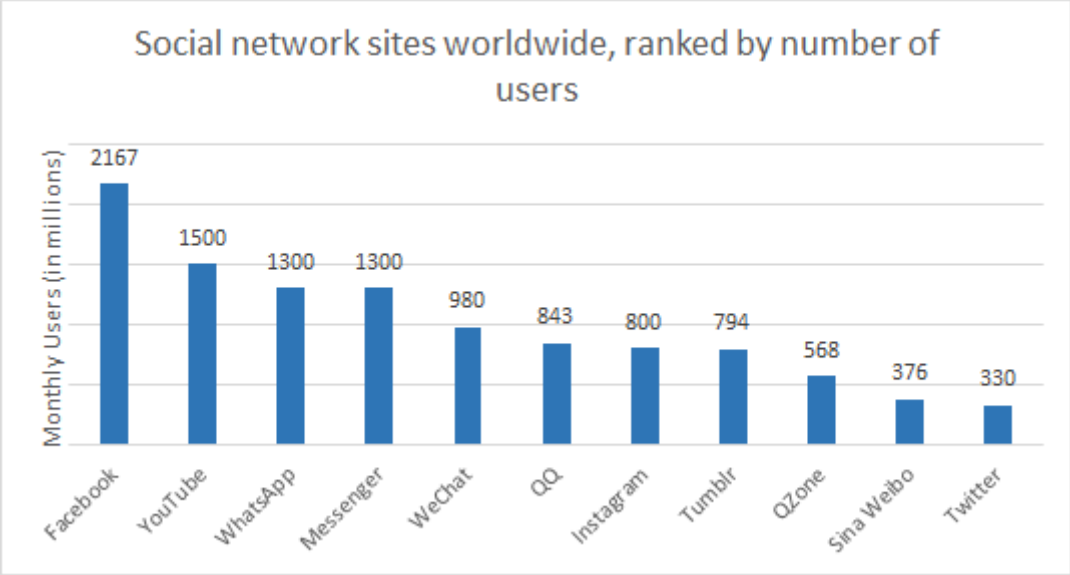


Figure 3.8: Social network sites worldwide ranked by user numbers (Statista, 2018h).

The user database is a valuable resource as it monetises social media, and because it enables Facebook to diversify its advertising services to achieve premium prices. Most obvious is the former by which Facebook is earning billions of dollars a year. The fact that the database systematically gathers and give access to personal information about 5,6 billion social media users across the globe makes it extremely attractive. Most importantly, the database has been monetised by selling digital advertising services to marketers, but also third-party software developers make use of the information. In the words of advertising director, John Matejczyk, interviewed for a BBC documentary about Facebook, *"The amount of targeting you can do on Facebook is extraordinary. There is nothing else like it"* (BBC, 2017). The way in which information is purposefully organised in order to optimise these advertising services makes the level of precision impressive. The marketing tool can be deployed to target small groups of a couple of hundreds just as easily as it targets individuals, i.e. micro and Nano targeting respectively (Barbu, 2014). As a result, Facebook is in a position where they possess an advertising product that is diversified on its degree of targeting to a degree that is unique in the market.

Indeed the database is unique, and it is also found to be rare by virtue of being the single largest social media user database in the world. There exists no similar database on social media users, and Google is the only company that comes close. While Facebook predominantly delivers display advertising facing its users, Google is less concerned with display advertisement and more preoccupied with search engine advertising (SEA). SEA includes e.g. posting ads on search result pages, good rankings on specific search results, and optimisation of placement in search engine. In a similar vein to Facebook's user database, Google leverages its search engine to provide targeted advertising services to marketers, although in a slightly different niche of the market leaving Facebook to dominate social media. This has allowed Facebook and Google to avoid facing each other head-on in competition, and instead, they have grown to become the two undisputed global leaders in digital advertising. We will return to this in more detail in the analysis of the competitive environment below. In essence, no other firm can compete with the level of targeted advertising delivered by the two companies enabled by the user database and search engine, respectively.

Furthermore, closing the gap by acquiring a similar capability to the world's largest social media user database is at best very expensive, but might be impossible. Hence, it is found that as a resource the database is costly to imitate. First of all, the share size of the database makes it expensive in terms of maintenance, development, and optimisation. However, more interestingly, it is nearly impossible to imitate as it is built on a complex social construct. Why is it that we all use Facebook? Well, a lot of people would say they do because their family, friends, and whole social network are using it. In a way it functions as economies of scale, the fact that it is so big makes it function better at increasing value to users. By social construct, the cost of switching to another social network increases for the individual user. We will come back to this point below when we discuss the competitive environment.

Finally, making the user database a sustainable competitive advantage is the fact that Facebook's organisation is set up to exploit its value. Most notably, the algorithms linking users and marketers are set up in a way that enables Facebook to extract as much value from the database as possible. When a user logs on to Facebook, there are thousands of potential posts that can appear in its news feed. In the blink of an eye, the sophisticated algorithm arranges the posts according to the likelihood that the user will interact with them (BBC, 2017). The customer is charged a higher

price in the case of more interaction, i.e. active interaction (commenting, sharing, and reacting) is more valuable than passive interaction (clicking, watching, and viewing/hovering).

Furthermore, the decentralised structure of selling advertising slots is a process that helps the company extract value . The sale of specific pieces of advertising directed at specific user groups makes targeted advertising easily accessible for all kinds of companies regardless of the size of their advertising budget (Chieruzzi, 2017)(Facebook Inc., 2018a). Facebook is able to offer an affordable solution while it explores the willingness to pay for each individual customer by taking bids for each slot. In conclusion, Facebook possesses a social media user database that satisfies the criteria for being a resource giving rise to a sustainable competitive advantage.

Brand value

Over the last decade, Facebook has become one of the world's most valuable brands, and it is now recognised all over the globe. It was named the fourth most valuable brand by Forbes Magazine in 2017 with an estimated commercial value of 73,5 billion USD (Forbes, 2017). Facebook ranked ahead of marketing giants such as Coca-Cola, Amazon and Walt Disney, and was surpassed only by Microsoft, Google and Apple according to Forbes.

The Facebook brand is both highly valuable and rare. The estimated commercial value of 73,5 billion speaks for itself. To illustrate the magnitude and put it in perspective we can compare it to a commercial juggernaut like Nike. The estimated brand value of Facebook exceeds that of Nike by a multiple greater than two (Forbes, 2017). By being so incredibly valuable, naturally, the standing of the Facebook brand is also rare. Considering Forbes' top 100 list there is not a single social media brand featured, despite Facebook, and only a single provider of digital advertisement in addition to Facebook, namely Google. Developing a brand to appear amongst the strongest in the world is inherently rare and reserved for an exclusive few companies. To do so as the only social media platform, and one of two providers of digital advertising is extraordinary.

To develop a similarly strong brand would be highly costly, if not impossible. Particularly in the short run. First of all, the Facebook brand is built on a social complexity that seems close to impossible to imitate. The way the platform is not merely a means of communication online, but has become the way in which most people build their online identity gives Facebook a strong hold

on people. Furthermore, the amount of money, time, effort, and most importantly luck that would go into achieving a similar status like Facebook enjoys today is difficult even to comprehend. As a proxy, we can imagine all the hours put in by all the employees ever to work at Facebook. In addition to this minimum time and effort, one would need a good portion of luck to develop such a brand. The most viable alternative to the seemingly impossible task of developing such a brand is to buy it, however, this would only be feasible for a huge company with deep pockets. In conclusion, we find convincing evidence to support the notion that the Facebook brand provides the company with a sustainable competitive advantage.

Financial performance

Facebook has delivered consistently strong financial performance over recent years. As a result, the company's stock has seen an incredible rise, and is currently one of the most popular stocks trading on the New York Stock Exchange (NYSE). A driving force behind the company's financial success over recent years is the outstanding rate of top-line growth. Since 2013, Facebook has delivered revenue growth at a CAGR of 38,8% (Facebook Inc., 2018b p. 32). In 2017 and 2016, revenues grew exceptionally at a rate of 54% and 47%, respectively. As a result, the company sold products for more than $40,6 billion in the financial year ending in December 2017. The main contribution to the growth in revenues has come from Facebook's advertising business as earnings grew by 57% in 2016 and 49% in 2017 (Facebook Inc., 2018b p. 43).

Over recent years, Facebook has demonstrated its ability to translate top-line growth into improvements also in bottom-line performance, which has meant that the company has become highly profitable. Net income grew by an astonishing 177% in 2016, and a solid 55,9% in 2017 (Facebook Inc., 2018b p. 42). Figure 3.9 below compares Facebook's net profit margin, i.e. net income as a percentage of revenue, to the other FAANG companies. Two developments are clear from the figure. Firstly, Facebook has hugely increased its profitability over the last couple of years. Secondly, Facebook is more profitable than its FAANG counterparts. Both conclusions are fortified when considering both the gross, and operating profit margins. The net profit margin of Facebook, Apple, and Alphabet (Google) was very similar in the period 2013-2015, hovering in close proximity to 20%. Netflix (around 5%) and Amazon (below 2%) have due to the nature of their businesses seen much smaller margins. However, while Apple has stayed close to 20% and Alphabet experienced a drop to 11,4% in 2017, Facebook on the other hand, has been able to

hugely increase its profitability. In 2017, the company was able to translate 39% of revenues to net income. Put differently, Facebook managed to grow its bottom-line as a percentage of its top-line outstandingly over the past two years. We find the exact same evidence when looking at the company's operating profit margin (Facebook Inc., 2018b p. 42).

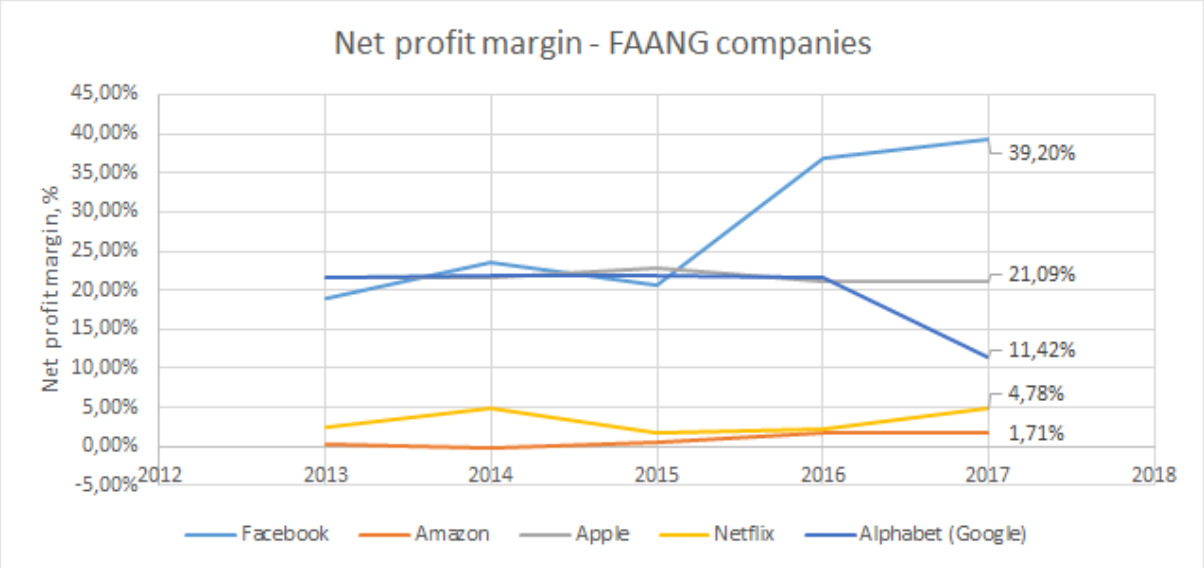


Figure 3.9: Net profit margin for the FAANG companies (self-developed based on annual reports) (Alphabet Inc., 2018; Amazon Inc., 2018; Apple Inc., 2018; Facebook Inc., 2018b; Netflix Inc., 2018)

The positive development in profitability stems from growing revenues in combination with strong cost control. This has meant that all operational costs have decreased relative to revenue (Facebook Inc., 2018b p. 42). Total costs and expenses made up 65% of revenue in 2015, however, as revenue has significantly outgrown increases in costs the number was reduced to 50% in 2017. Most importantly, R&D expenses went from 27% to 19% of revenues between 2015 and 2017. The development came despite the fact that R&D expenses were increased nominally at a high rate of 23% and 31% in 2016 and 2017, respectively. Although smaller in magnitude, similar trends are found for cost of revenue, marketing and sales, and general administrative costs. In general, Facebook's improvements in profitability is characterised by the fact that revenue has outgrown costs and expenses. Specifically, this says something very important about the business model.

The strong and sustainable financial performance of Facebook reflects the fact that the business model is highly profitable when operations are increased in scale. What this really means is that the incremental cost of serving one more customer is low. In the case of Facebook, fixed costs are relatively high compared to variable costs, hence expanding operations has meant that costs are reduced as a portion of revenues. The fixed costs of administration, R&D, and to a lesser extent marketing and sales make up a relatively large portion of revenues (31%). While the variable cost of revenue, which includes operation of data centres, server equipment depreciation, salaries to operations employees, as well as energy and bandwidth costs, is relatively low (12%). The implication is that when operations are scaled up to increase revenues, the corresponding increase in costs is relatively small in magnitude. Parts of the same dynamic is seen when looking at Facebook's return on assets (ROA). Improvements in the net profit margin in combination with a decrease over the last year in total assets made ROA skyrocket from about 6% for 2015 to 18,85% in 2017.

Strong financial performance would in most instances only constitute a competitive parity that could be imitated by competitors over time, however, Facebook's execution of the business model to become incredibly profitable is found to constitute a temporary competitive advantage. The company performs well in terms of revenues, profit margins, and returns on investment so that no matter the measure of profitability it comes out on top compared to its FAANG counterparts. Considering the fact that the other FAANGs are some of the most successful companies in recent history this says a lot about Facebook's performance. There is novelty in the extraordinary performance over the past few years and hence we find that the financial performance of Facebook is in fact hard to imitate.

3.2.2.2 Weaknesses

Stagnating user growth

Facebook has seen its user growth stagnate, which is a weakness when considering the importance of the user database for profitability. The company grew its number for daily active users (DAUs) by 3,8% in Q3 2017, before slowing to 2,18% in Q4 (Constine, 2018). Despite being a considerable slowdown, this was the lowest quarter-over-quarter DAUs growth ever recorded by Facebook. For the first time, the number of DAUs in the US and Canada, the most profitable region per user for Facebook, decreased by 1 million. DAUs growth picked up again for Q1 2018

to 3,42% and turned positive again for the US and Canada, however, the trend remains evident. Facebook is increasingly struggling to add new users to its social media platforms. The main reasons are saturated markets in developed regions and regulatory difficulties in developing regions. The latter fact is particularly evident in China where Facebook is banned, and the government enforces a blockage to its site for all Chinese residents.

The ban imposed by the Chinese government on Facebook makes it difficult for the company to maintain a high growth rate in users. As the most populous country in the world, and with the fastest growing digital advertising market globally, China stands out as the most interesting opportunity for expansion. In 2016, the annualised growth rate in online advertising revenue was 32,1%, almost three times that of global revenue growth (Statista, 2018a). Interestingly for Facebook, social media advertising spending saw even steeper growth of 44,4% in 2016 and 39,1% in 2017. Although predictions for 2018 indicates further decrease in the growth rate to 35% it remains about three times that of global growth (Statista, 2018b). The implications for value creation of entering the Chinese market is explored in detail in the discussion below. For now, it is sufficient to note that the Chinese market is significantly outgrowing the global market, hence the regulatory ban in China is the principal reason why Facebook's user growth is not exhausting the full potential of its growth trajectory.

Alarmingly, the development in Facebook's user demography in the US shows evidence of a slowing interest in the social media platform from younger age groups. According to forecasts for 2018, the user growth is expected to turn negative for the age groups 11 and younger, 12 to 17, as well as 18 to 24 at a rate of -9,3%, -5,6%, and -5,8%, respectively (Sweney, 2018). As these age groups are the foundation for revenue generation in many years to come, the trends contribute to a gloomy future for Facebook. Furthermore, the company's dependence on the US market fortifies the argument as the platform is losing hold with youth in the world's largest digital advertising market compared to the rest of the world (Statista, 2018e, 2018f). In the US, 2% of females and 1% of males in the age group 13-17 years used Facebook as of January 2018. The same numbers globally was 3% and 4% for females and males, respectively. The same pattern is found for the age group 18-24, and to a lesser extent for those aged above 24. Considering the fact that the US and Canada are by far the most profitable regions, and younger generations the single most

important demographic group, Facebook will have to turn the trend to not face a considerable negative impact on revenues.

Figure 3.10 depicts the average revenue per user across regions and reveals that the US and Canada is by far the most profitable region for Facebook. In nominal terms, North-America stands for more than twice the revenue in Europe, and three times that of the Asia-Pacific. Growth in revenues has seen an astonishingly equal distribution across all regions over the past few years at a CAGR of 9%-10%. The regions differ hugely, however, when it comes to average revenue per user (ARPU). As Figure 3.10 illustrates, Facebook earned $26,76 per user in the US and Canada, which was more than ten times higher than the $2,54 in the Asia-Pacific. In Europe, the company generated $8,86 in revenues per user, which was well above the global average although only about a third of the number in North-America.

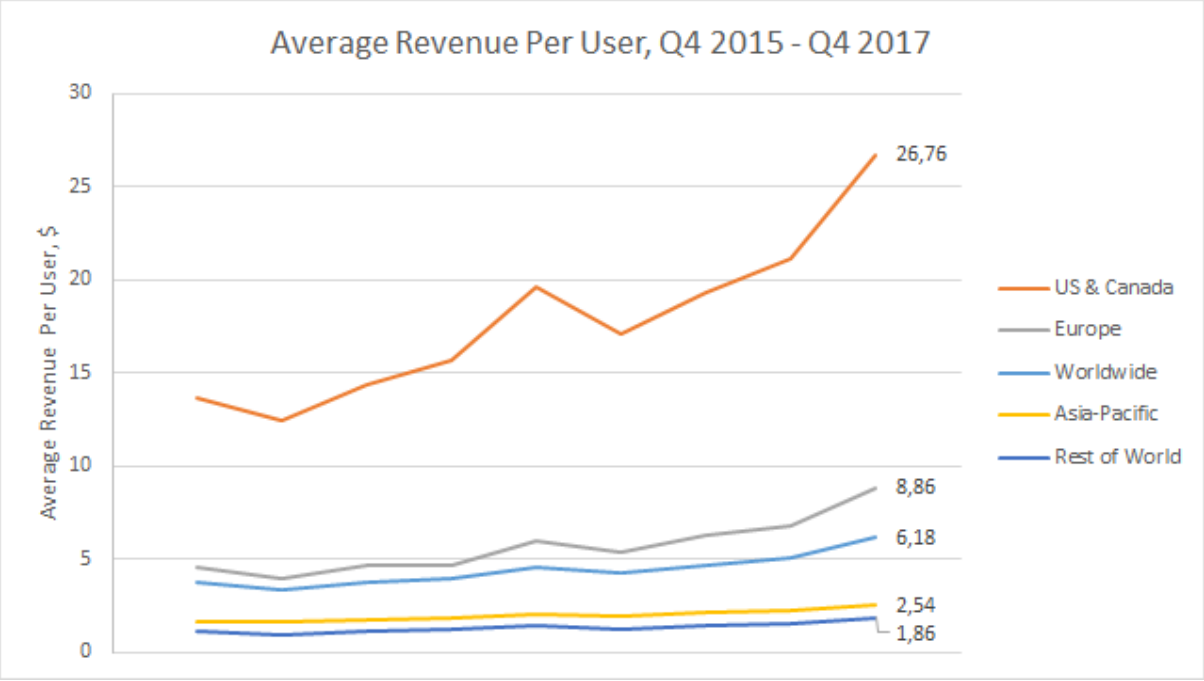


Figure 3.10: Average Revenue Per User for Facebook (Facebook Inc., 2018b p. 37).

Low diversification of business

The strong financial performance of Facebook is impressive, although, the numbers reveal that the company has become overly dependent on advertising revenue. In 2017, advertising revenues accounted for 98,2% of total revenue, and illustrates how dependent the company has become on

marketers (Facebook Inc., 2018b p. 43). Although the business model has proven strong by becoming very profitable over the past years, it has simultaneously become more one-sided than ever. As a result, Facebook finds itself in a position where it has become universally decisive for its business that it remains successful in the digital advertising market, due to its failure to diversify its business. Substantiating the argument is the fact that Facebook currently has predominantly short-term contracts with marketers, which makes the company vulnerable to changes in preference with marketers. Together these facts reveal a weakness in Facebook's strategic position.

Facebook's acquisition of virtual reality platform Oculus in 2014 for 2 billion USD can be seen as a move to diversify its business. By exploiting the growth potential of an industry that is expected to bloom in the coming years the company puts itself on a path to diversify its revenue streams. It is worth noting that Facebook envisions Oculus to become an integrated part of Facebook's mission to make the world more open and connected. Although Oculus operates in another industry, i.e. virtual and augmented reality, it still relates purposefully to Facebook by virtue of being a technology company. Currently, Oculus should be considered more like a start-up with no imminent prospect of generating much value for Facebook. Furthermore, it remains to be seen if the virtual reality market will prosper so that the platform can become a profitable business in the future. Either way, the acquisition appears to be motivated by Facebook's wish to exploit the potential of the VR market over the next years. The prospects of VR and its implications for Facebook's revenues is treated in detail in the discussion below.

3.2.3 External factors

To address external factors affecting Facebook, both a PEST- and Porter's Five Forces- analysis will be conducted. This will ensure an extensive overview of the companies' potential opportunities and threats taking both the macro and micro level into account. The PEST-framework will assist our analysis by determining the macro factors, while the Porter's Five Forces-framework takes an industry view to understanding competitiveness and profitability.

4.3.2.1 PEST

The PEST- analysis sets out to map Facebook's external environment to determine the factors impacting the company's strategic position from outside the boundaries of the firm. An exhaustive

examination of all external factors is, of course, neither purposeful nor feasible. Therefore, the most important external factors are depicted in Table 3.3 and will be analysed in turn below.

Political factors	
• Changes in data protection law • New Internet tax in the EU	(Threat) (Threat)
Economic factors	
• High growth in social media and advertising market • Expansion to unexplored markets (China)	(Opportunity) (Opportunity)
Socio-cultural factors	
• Increased scrutiny by legislators • Changes in company perception • Increasing internet usage worldwide	(Threat) (Threat) (Opportunity)
Technological factors	
• Cyber security	(Opportunity & Threat)

Table 3.3: Summary of PEST-analysis for Facebook.

Political

Data protection laws

Facebook has a global reach, and as a result, it operates within many different and complex regulatory environments, including various rules on customer data protection. The topic of data protection laws has become increasingly important to people, particularly in the wake of the Cambridge Analytica scandal. As a result, lawmakers across the world is trying to figure out how to deal with the high pace of tech giants like Facebook, in order to protect the rights of its citizens.

How data protection laws develop in the future is important to Facebook for two reasons. Most importantly, it concerns the ownership and control of its most important input, i.e. user data. Steps taken by regulators to curb Facebook's ability to gather information on users, as well as moves to make the collection process more explicitly communicated is expected to reduce its control and tilt ownership of the content towards the user. Secondly, it is important because developments in

regulation threaten to impose additional costs on the company, primarily associated with data management. Until recently Facebook has been blessed with low degrees of regulatory burden, however, the scandal surrounding Cambridge Analytica and its access to Facebook's database has made the general public aware of the current state of data protection and privacy online. Before we get to the scandal let us have a look at the current state of regulation.

The US and Europe, by far the two most important markets for Facebook, is very different when it comes to data protection laws (Coos, 2018). On the one hand, Europe has opted for an all-encompassing regulation called the General Data Protection Regulation (GDPR). On the other hand, the US has chosen to implement sector specific data protection laws and regulations including the Health Insurance Portability and Accountability Act (HIPAA), NIST 800-171, The Grahamm-Leach-Bliley Act, and the Federal Information Security Management Act (FISMA). The essential difference being that while US regulators have been concerned with the integrity of data as a commercial asset, their EU counterparts have largely put individual rights before the interest of business (Coos, 2018).

The GDPR, which will be enforced as of May 25th 2018, introduces two general developments with important implications for Facebook (EU Commission, 2018b).

1. The territorial scope is increased to include all companies processing the personal data of data subjects residing in the EU, regardless of the company's location.
2. Penalties issued to an organisation in breach of the GDPR can be set to 4% of annual global turnover or €20 Million, whichever is higher.

Clearly, the company is subject to the new GDPR regime as a result of the increase in territorial scope, and a potential failure to comply the rules will have grave consequences for profitability. Based on global revenue for 2017 Facebook could receive penalties in the region of $1,6 billion in the case of violating the new rules (Facebook Inc., 2018b). As the time of enforcement is approaching questions have been raised as to whether Facebook will be able to adapt its business to comply with the new rules. Indeed, the GDPR poses a threat to the legality of the entirety of Facebook's business model.

The risk stems from the fact that targeted advertising based on personal characteristics will become illegal under GDPR. In a recent study conducted at the Charles III University of Madrid,

researchers found that 73% of the company's European users were exposed to such targeting (Ram & Kuchler, 2018). The challenge for Facebook is that as of May 2018 the company is forbidden from processing data on race, ethnicity, political opinions, religious beliefs, trade union membership or sexual orientation without explicit consent from users. These data, until now provided with consent amid little awareness, are all important parameters applied in its algorithms in order to provide targeted advertisement services. Should the company run into issues in obtaining renewed consent from users there is a real chance that it will affect the service provided to customers, and hence also European revenues. In addition to the challenge aligning advertising practices with new regulations, the company faces potential increases in costs resulting from GDPR compliance.

Likely increases in costs are first and foremost related to the various rights for the users secured by GDPR. Quite self-explanatory these rights can be named as breach notification, right to access, right to be forgotten, data portability, and privacy by design (EU Commission, 2018b). The magnitude of running costs associated with servicing these rights for European users is unknown, however, likely to become substantial. As a result, GDPR is expected to negatively affect Facebook's margins in the EU in the short-term, and if the GDPR becomes a blueprint for reform in other countries maybe also in other markets in the long-term. In addition to the direct costs associated with providing users these rights, the company's potential failure to carry them out is likely to be sanctioned based on the level of European revenues as described above. The level of scrutiny put on the enforcement of GDPR is expected to be immense, and conversely the likeliness of Facebook getting away with an indifferent implementation of GDPR non-existent, in the wake of the Cambridge Analytica scandal.

The Cambridge Analytica scandal exposed severe deficiencies in Facebook's handling of its user's personal information. As an integrated third-party Cambridge Analytica was able to leverage consent from 270.000 Facebook users, who also gave the right to details of their friends, to gather personal information on 80 million users (Gapper, 2018). Facebook has since taken steps to limit the access to friend's private information. Nonetheless, the company's routines with handling user data have been deemed sluggish by the public. Sandy Parakilas, the former platform operations manager at Facebook responsible for policing data breaches by third-party software developers admits that with "all of the data that left Facebook servers to developers could not be

monitored by Facebook, so we had no idea what developers were doing with the data" (Kuchler, 2018; Shubber, 2018). This inconsiderate handling of personal information has left the wider public in disgrace.

As a result of discontent, the issue has received much attention, and now Facebook is facing investigations across several jurisdictions. Arguably, the most serious inquiry is the one set forth by the US Federal Trade Commission (FTC). In 2011, Facebook and the FTC settled a similar complaint by requiring the former to be upfront with users about how their data is being shared with third parties. The agreement included potential fines of up to $40.000 per violation per day, which could be applied for the 80 million users affected by the recent scandal (Shubber, 2018; Shubber & Wells, 2018). However, previous actions taken by the FTC in similar cases points to a more moderate response. Still, Facebook will have to make certain confessions as to how to improve its practices significantly.

New Internet tax in the EU

In March 2018, the European Commission made public its proposal for reforming the union's corporate tax rules. Its purpose is to tackle the issue of appropriately taxing companies in the digital economy, and the Commission emphasised that the rules were developed with the objective to tax digital business activities in a fair and growth-friendly way (Rankin, 2017). Naturally, as an inherently digital business Facebook will be covered by the new rules should they be adopted by the union.

The proposal set forth by the Commission has two components (EU Commission, 2018a). First of all, it aims to reform the corporate tax rules. The central idea is that profits are to be registered and taxed where the business has significant interaction with the user through digital channels. Importantly, this would enable the EU Member States to tax profits that are generated in their territory regardless of whether or not the company has a physical presence in the country. According to the proposed rules, a company will have a taxable "digital presence" if *one* of the following criteria are satisfied (EU Commission, 2018a):

1. The company exceeds a threshold of 7 million euros in annual revenues in a Member State.
2. The company has more than 100.000 users in a Member State in a taxable year.

3. Over 3.000 business contracts for digital services are created between the company and business users in a taxable year.

Currently, Facebook is triggering one of these thresholds in all EU Member States, and as a result, the proposed rules stands to affect the company's profitability across the whole region in the medium to long run. In the short run, it is the second component of the proposal that comes into play.

The second component of the Commission's proposal is an interim tax on certain revenue from digital activities. This is to ensure that those activities currently not taxed will start to generate tax revenues for Member States immediately. As opposed to the first component the interim tax would apply to *revenues* rather than *profits*, and revenues created from activities where users play a major role in value creation (like from selling online advertising space) is mentioned specifically (EU Commission, 2018a). If we take Facebook's total revenues of 9,7 billion USD in Europe for 2017, taxed at the proposed rate of 3%, the possible impact of the tax is around 300 million USD annually. This is nothing but a supposition, however, it gives an idea of the possible impact for Facebook. Issues of tax are complex in general, and for multinational corporations like Facebook in particular, hence we will not treat the question in great detail in this paper. Nonetheless, the importance of the European market for Facebook's profitability makes it irremissible to ignore, particularly as it stands the chance to greatly affect value creation in the European market for the foreseeable future.

Economic factors

Market development

The development of the digital advertising industry poses many opportunities for Facebook to exploit in the future. The industry is expected to deliver high revenue growth throughout 2022, and the shift towards mobile solutions puts the company in a favourable competitive position. Furthermore, particularly high growth in unexplored markets opens the opportunity for market penetration.

In 2017, total revenues in the digital advertising industry were $247 billion. The largest market was the US with $106 billion, while China and the UK came in second and third with total

revenues of $75,7 billion and $19,2 billion, respectively (Statista, 2018d). The numbers reveal the importance of the US market in digital advertising as it accounts for almost half the total revenues. Other important markets are Japan with $11,3 billion and Germany with $7,7 billion in revenues.

The digital advertising industry is expected to growth substantially over the next few years to become a $400 billion industry by 2022. In 2016, industry revenues grew by 14,5%, and the same figure was 11,9% in 2017. Growth in revenues is expected to remain steady in the coming years and the compounded annual growth rate (CAGR) until 2022 is expected to be 11,1%. As an established actor in the market, Facebook would be expected to grow together with the market at a rate slightly above 10% at a minimum. However, as one of the market leaders, with a strong presence within the fastest growing social media and mobile end of the market, we would expect considerably more from Facebook. The social media segment is expected to slightly outpace the growth of the overall market at a CAGR of 13,1% until 2022 (Statista, 2018d). The only segments to outgrow social media is video advertising at 15,8%, and includes all ads within online video players.

Interestingly, when reviewing the prospects of Facebook, most growth is expected to come from advertisement on mobile devices as opposed to personal computers (desktop). Advertisement on mobile devices, such as smartphones, tablets, etc, surpassed that of desktops for the first time in 2017. The global division of revenues was 54,9% on mobile, and 45,1% on desktop. The same division of the market is expected to become 68,8 on mobile and 32,2 on desktop by 2022, implying CAGR of 18,9% and 1,3% respectively (Statista, 2018l).

Socio-cultural factors

Reputation and attitudes towards Facebook

Facebook's reputation is currently undergoing some severe changes for the worse. In the wake of the Cambridge Analytica scandal, several business rating companies have downgraded Facebook on their measures of environmental, social, and governance issues. Sustainalytics, a ESG rating agency, have now downgraded the company to its second-lowest rating (Mooney, 2018). It did so based on the revelations that Cambridge Analytica had improperly harvested personal information on millions of Facebook users. The scandal has raised questions about Facebook's management of personal data on behalf its users, as well as its data protection practices in general. Most notably, the general public has come up with the #deletefacebook campaign, and several public figures and

companies have said they will no longer make use of Facebook's services as a result of the revelations.

Elon Musk, the well-renowned founder of Tesla and SpaceX, is one of the most prominent proponents of the campaign. After expressing his discontent with the social media juggernaut on Twitter, Mr. Musk took both his companies' pages down after suggestions from other Twitter users, saying: "Definitely. Looks lame anyway" (Waters, Bond, & Kuchler, 2018). As Mr. Musk is having a personal reach of over 20 million followers on Twitter, while Tesla and SpaceX had over 5 million "likes" on Facebook, the incident is destined to get people's attention. Although Facebook is not going to suffer severely from such an isolated incident, the risk of the campaign spreading to the wider public is of great concern.

The campaign appends to a broader change in sentiment towards Facebook, which has seen growing public distrust in the company. Partly, the development is related to the role the social media platform played in the election meddling by Russia in the US Presidential election in 2016. In its own perspective, Facebook has fallen undeservingly victim of Russian tactics, while lawmakers, on the other hand, have claimed that the company has been neglecting its social responsibilities. In any case, Facebook is facing a growing wave of discontent and mistrust from its users in general, the American people in particular, and increasingly governments across the globe. It is impossible to predict the future impact of the crisis, however, if not handled appropriately the scandal may easily become the beginning of the end of Facebook.

4.2.2.2 Porter's five forces analysis

In this section, we will look at the competitive environment surrounding Facebook as it relates both to the social media market, as well as the advertising industry. Facebook operates in an environment that is continuously altered, and hence the company is having to continuously adapt to meet these new circumstances. It is imperative that the company is able to adapt to the competitive situation in the market, and thus nurture its competitiveness for its business to be successful. In order to understand what are the competitive drivers in the environment surrounding Facebook, and how the company may take actions to overcome such competitive forces, we will deploy the Porter's Five Forces framework.

Rivalry among existing competitors

The large differences in size between competitors exerts a weak competitive force in the advertising industry. Competitors to Facebook are companies that sell advertising services, and includes both indirectly the traditional advertising agencies, as well as more directly modern technology firms. Over the past two decades, marketers have gradually shifted their budgets away from traditional media channels, e.g. TV and newspapers, towards online channels. This development has brought about consolidation amongst traditional advertising agencies, and the rise of exclusively digital actors. In a global perspective, there are four traditional advertising agencies, i.e. WPP, Publicis, Omnicom, and Interpublic Group, and five strictly digital actors, i.e. Google, Facebook, Alibaba, Baidu, and Tencent.

Currently, the global online advertising industry is dominated by Google and Facebook laying claim to 61% of total revenues (Statista, 2018i). The dominant position of Google (44%) and Facebook (18%) is considerably ahead of its nearest rivals Alibaba, Baidu, and Tencent. Within mobile ad revenues, the fastest growing segment of the market, competition is best described as a duopoly between Google (35%), and Facebook (25%). The Chinese companies follow in distance with Alibaba (11,6%), Baidu (4,8%), and Tencent (3,5%). Finally, the rest of the market (16,5%) is made up primarily of the traditional advertising agencies and small tech companies. The large discrepancy in size makes it challenging for the smaller actors to compete with the industry leaders globally. Furthermore, the competitiveness of the Chinese firms owes a lot to the regulatory support from the Chinese government blocking access for Facebook, and to a lesser extent also Google. It reveals that these companies gain their market share principally in their home market, and they do not, in fact, have a particularly strong presence globally, yet.

Furthermore, a paradigm of diversification has become an important factor exerting a weak competitive force in the industry. The way in which the advertising industry has been divided between traditional and digital actors reflects the paradigm. It is not the digital presence itself, but rather the ability to deliver targeted advertising stemming from the plurality of information online that marks the divide. The ability to target specific audiences with great precision has become the essential factor of diversification in the industry, as it greatly increases the value for marketers. It has proven immensely difficult for traditional agencies to develop similar competencies as the inherently digital actors, and as a result, the latter has gained a competitive edge (Garrahan,

Scheherazade, & Nicolaou, 2018). Put differently, the advertising products have become so different in terms of value to the customer that it exerts a weak force on competition.

Finally, high industry growth rates, as discussed above, have also contributed to reduce competition. There has been more than enough growth to go around to all firms, which implies that the competitive intensity is reduced. As growth in internet users globally have remained surprisingly persistent over the past decades, competition gravitates around penetration rates. In this regard, Facebook has been able to compete successfully by keeping its social media services free, and leveraging the size of its user database. In 2017, the company had a global penetration rate of 26,3%, with North America (72,4%), Latin America and the Caribbean (57,3%), Oceania (48,1%), and Europe (41,7%) making up the geographies with the strongest foothold. It is worth noticing that Asia (13,8%) and Africa (12,7%) constitutes the regions with the poorest penetration rates (Statista, 2018j). The fact that Facebook has the highest penetration rates in its most profitable geographies, and lower in the lesser profitable ones, demonstrates the company's competitiveness. Nonetheless, Asia is likely to become increasingly important in the coming years. Currently, the regulatory ban of Facebook in China depresses the penetration rate both in the region and globally to a large extent, hence a break-through in the country is pivotal in growing, or even maintaining, the penetration rate.

Bargaining power of buyers

High availability of substitutes and low costs associated with switching to other suppliers gives strong bargaining power to Facebook's buyers. There is a large variety of alternatives to advertisement on social media. Especially, other internet-based solutions pose as direct competition to Facebook. These alternatives come in a variety of forms, however, search engine advertisement is currently the largest and Google the main rival. Furthermore, traditional medias such as television and radio have a long history for delivering advertisement and, despite not having as intimate information about its target group, remains highly effective. The costs associated with switching from advertisement on social media to other alternatives is close to zero. The way in which Facebook provides advertisement services, which we will come back to below, makes setting up an ad campaign just as easy as closing one down. The fact that advertisement generally is financed on a project-to-project basis substantiates the argument. Facebook has close

to zero long-term advertisement contracts and operates directly with small buyers on a short-term basis.

The purchase of advertisement services on Facebook is constructed in a way that ensures small purchases by individual buyers, which exceeds a weak competitive force. All purchases are done online, and in order to get your ad campaign up and running you provide Facebook with 1) the ad campaign objective, 2) target audience, 3) ad format and location, and most importantly 4) advertising budget (Facebook Inc., 2018c). What the system does it that it pools all information from each marketer to set up actions for each advertisement space. If several marketers are in for the same spot the highest bidder will get the spot. The setup ensures that Facebook is able to interact with a diverse group of customers buying, or rather bidding for, small quantities of advertisement in a way that results in weak bargaining power on the side of buyers. In this system, Facebook sits with all the information and are able to set marketers up against each other to consistently explore their price sensitivity. As a result, the company is able to effectively mediate some of the bargaining power of suppliers.

In conclusion, the plurality of substitutes and low switching costs is intensifying competition in the online advertising industry by strengthening the bargaining power of buyers on the one side. On the other side, the way in which advertisement is sold online generally, and on Facebook specifically, is reducing the bargaining power of buyers by setting them up against each other in bidding for small quantities of advertisement. All in all the bargaining power of buyers is found to be high to medium for the online advertising industry. Facebook is currently mediating the pressure from buyers by selling its advertising services through auctions, however, their leverage on Facebook's profits remain extensive. The company should in the future consider moves to further differentiate its products and increase switching costs in order to cope with the plurality of substitutes.

Threat of new entrants

The competitive force stemming from the threat of new entrants considers how easy it is to enter the social media, and digital advertising industry. The easier it is to enter these markets, the fiercer is expected competition. Firstly, R&D spending relative to revenues suggests that the entry barriers are high for possible new competitors. Facebook spent 19% of revenues on R&D in 2017,

which was close to 8 billion USD (Facebook Inc., 2018b p. 44). Raising such cash is nearly impossible for a small start-up, hence the most imminent threat for new entrants to the market comes from bigger players. For instance, the other FAANG companies, as well as other established social media and dot-com companies poses the biggest threat. Although the level of R&D spending constitutes a barrier to entry, these large companies have the financial power to establish themselves in the social media and digital advertising markets should they wish to do so. In a situation where Facebook is set up against one of its FAANG counterparts, there are several ways to retaliate available to the company.

The most obvious way to retaliate would be to enter into a price war, trying to squeeze the new actor out of the market. The incredible revenue generation and high margins suggest that Facebook could easily lower its prices in an attempt to maintain its market share. The duopolistic competitive environment in digital advertising has meant that Google and Facebook are reaping huge benefits without having to seriously defend its positions. However, should they be forced to do so in the case of a new entrant they find themselves in a strong position to retaliate. Furthermore, the importance of brand reputation in competition increases the barrier for entry even further. Both Google and Facebook are prime examples of how important brand recognition is in social media and digital advertising, and to develop it is an overwhelming task.

Finally, as discussed above more scrutiny from society in general, and politicians in particular, have meant that the regulatory environment surrounding social media and digital advertising companies are changing fast, which put industry incumbents at an advantage and reduces competition. In general, established firms are likely to fare better when implementing, for example, new standards of handling personal information, simply because it relates closely to their current competencies. Again, as the amount of red-tape increases, it puts incumbents at an advantage relative to new entrants, thus functioning as a barrier to entry. In sum, there are evidence to support the notion that the threat of new entrants exerts a weak competitive force.

Threat of substitutes

Facebook's business faces the threat of substitutes both in the social media and digital advertising markets. First of all, the non-existent cost of changing from Facebook to another social media platform, considering that most alternatives are also available for free, makes the company

vulnerable. Secondly, the plurality of alternatives available to marketers for advertising space, both online and offline, exerts great competitive pressure on Facebook. In the current competitive situation, the company has been highly successful, as we have seen, but that is no guarantee that the will remain so in the future.

In the social media market, the threat of substitutes is likely to stem from changes in user preferences and trends in conjunction with low switching costs in the short-run, as well as the threat of disruptive innovation in the medium to long-run. Firstly, as nearly all social media platforms today are free for the user they are all highly vulnerable to changes in preferences of the user. In relation to any social media substitute, however, Facebook currently enjoys the great advantage of being the global leader. Effectively, this means that the switching costs of going from Facebook to another social media platform are relatively higher than vice versa. Although not in monetary terms, the switching cost is higher as you would be connected to a smaller number of people. After data protection laws and the influence of social media advertisement moved to the top of the political agenda, there has opened a new possibility to diversify and substitute old platforms.

A possible diversification strategy would be to charge a fee from users in exchange for an ad-free interface. If seen in conjunction with the Cambridge Analytica scandal there is definitely the possibility that a change in social perception can make such a business model profitable, however, size is expected become hugely important to do so. Therefore, Facebook finds itself in a position where it could adapt to a subscription based revenue model rather easily. The company could even consider different models across its platforms, as Facebook, WhatsApp, and Instagram addresses slightly different user segments. It is difficult to assess the user's willingness to pay for being connected as it is largely uncharted waters, however, it seems apparent that an element of exclusivity or additional premium features must be included to justify the fee.

The threat of substitutes in the advertising industry is plentiful and exerts a strong competitive pressure on Facebook. Firstly, relating to its core business, the digital advertising industry is full of alternative advertising channels. In a way, there are as many options to marketers as there are Internet-pages in existence, and the cost of switching from one to another is usually zero. The threat from offline advertising channels is lower due to reduced levels of targeted advertising,

however, they remain effective advertising tools and hence they pose as competition to Facebook. There are many substitutes to Facebook's products in the competitive environment, however, they exert only a medium competitive force on the company as its products are significantly diversified to remain attractive.

Concludingly, we find evidence to support the notion that the competitive intensity surrounding Facebook is medium based on the Porter's Five Forces analysis as summarised in Table 3.4. This is a result of the weak forces stemming from the rivalry amongst existing competitors and threat of new entrants, the medium force from the threat of substitutes, and the strong forces originating in the bargaining power of buyers. The final force, i.e. the bargaining power of suppliers, is negligible due to the that the input from the social media market is free and suppliers in the advertising industry exercising an imperceptible pressure, and hence they will not be treated.

Rivalry among existing competitors = Weak
• - Few competitors • - Large differences in size of competitors • - Diversified product • - High industry growth
Bargaining power of buyers = Strong
• + High availability of substitutes • + Low switching costs • + Predominantly short-term contracts • - Small individual buyers
Threat of new entrants = Weak
• - High R&D costs in terms of revenue • - Plurality of options for retaliation (price war) • - Changes to the regulatory environment
Threat of substitutes = Medium
• + Low switching costs • - Relatively higher switching costs for Facebook users • + Changing user preferences • + Ad-free social media platforms • + Many online and offline alternatives for marketers • - Few advertising channels with same level of targeting

Table 3.4: Summary of Porter's Five Forces for Facebook.

3.2.4 Summary of SWOT

Table 3.5 displays the most important strategic value drivers for Facebook based on the strategic analysis performed above. After investigating the strategic environment of Amazon below, the value drivers will be used to assess the likelihood of Facebook meeting the growth rate implied by the market as outlined in the implied growth analysis. Most notably, we find that stagnating user growth on its social media platforms and the fact that substantially all revenue is generated from advertising are the principal weaknesses of Facebook's business. On the other side of the coin it is shown that high market growth and possibilities for geographical expansion, primarily to China, as well as diversification into virtual reality poses as great opportunities for the company. Finally, Facebook must be aware of the threat stemming from possible changes to data protection laws, the introduction of an Internet tax in the EU, and changing social perceptions of the company.

Strengths	**Weaknesses**
● World's largest social media user database ● Fourth most valuable brand globally ● Strong and sustainable financial performance	● Stagnating user growth ● Low diversification of business ● Conflict between user experience and advertising
Opportunities	**Threats**
● High expected growth in social media and advertising markets ● Expansion to new unexplored markets ● Product diversification with virtual reality (Oculus)	● Changes in data protection law ● New Internet tax in the EU ● Increased scrutiny by legislators (litigation) ● New social paradigm negatively affecting company perception ● Cyber security ● Competition

Table 3.5: Summary of SWOT analysis of Facebook.

3.3 Strategic Analysis of Amazon

In this section, we will explore the internal and external strategic position of Amazon. The structure will be equivalent to the strategic analysis of Facebook.

3.3.1 Company Presentation

Amazon, with a 177,9 billion USD revenue, is the number one online retailer in the world (Statista.com, 2018), and the second most valuable company in the world (Levy, 2018). As of today, the company has three main business units. The company's core business is Amazon.com, accounting for 83% of revenue, and will serve as the main focus of our analysis. Also, Amazon has grown big within Cloud Computing with their Amazon Web Services unit. Last but not least, their company's unique subscription program, Amazon Prime, adds some billion USD in revenue through special offers, video/music streaming etc. Further, Amazon Prime also substantially increases traffic to Amazon.com, while Amazon Web Services helps to handle the increased traffic through their servers. In 2017, Amazon acquired the supermarket chain Whole Foods, adding a fourth important business unit to the company. Consequently, a discussion around Amazon Web Services, Amazon Prime and Whole Foods will also be conducted.

The company has shown an extraordinary ability to grow in recent years. Even though the revenue has grown rapidly, the company's heavy investments to grow further have drastically impacted the Amazon´s ability to generate cash. The focus on growth over profit is also uttered numerous times by the company's CEO, Jeff Bezos, and the stock market seems to have faith in the "Amazon Growth Project". As a result, the stock price of Amazon have increased by almost 600% the last 5 years, and as of recent, making Jeff Bezos the richest man in the world (Yahoo!Finance, 2018).

Although Amazon is a complex conglomerate, accounting for several different business units, this analysis will focus mainly on their core business, Amazon.com. Also, the synergies created with the other business units will be taken into consideration.

3.3.2 Internal factors

To analyse Amazon's internal strengths and weaknesses a broad company analysis will be conducted. First, the company's capabilities will be presented in a VRIO-diagram, to determine what kind of competitive advantage they provide to Amazon's ever-expanding areas of business.

Thereafter, Amazon's internal capabilities will be extensively discussed with focus on both strengths and weaknesses.

VRIO

	Valuable	**Rare**	**Costly to imitate**	**Organized**	Competitive advantage?
Superior logistics and cost leadership	Yes	Yes	No		Temporary
AWS - #1 cloud computing service	Yes	Yes	Yes	Yes	Sustainable
100 Million Prime users	Yes	Yes	Yes	Yes	Sustainable
Internal synergies	Yes	Yes	Yes	Yes	Sustainable
Acquisition performance	Yes	Yes	Yes	Yes	Sustainable
Brand reputation	Yes	Yes	Yes	Yes	Sustainable
#1 revenue generator within GVC	Yes	Yes	Yes	Yes	Sustainable

Table 3.6: Summary of VRIO analysis for Amazon.

3.3.2.1 Strengths

Superior logistics and cost leadership

Superior logistics and cost leadership brings a temporary competitive advantage to Amazon. The company's business model, as displayed in Figure 3.11, shows how the cost leadership, and subsequently low prices, are directly affecting the customer experience. Also, their superior logistics and easily scalable business model has made it possible to offer a wide selection of goods from a large variety of sellers to increase traffic. Moreover, low prices, superior logistics and a wide product range offer convenience for the buyer.

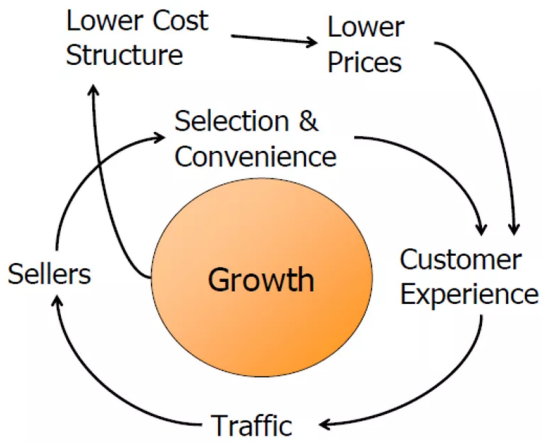


Figure 3.11: Amazon's business model (NEJO, 2016).

As of January 2017, Amazon.com offers a total of 398 040 250 products, from categories ranging from electronics, books, sports, fine art, tools and automotive parts (Amazon Inc., 2018). Further, the online structure of the company also allows them to give access to third-party sellers, who accounts for more than 40% of Amazons total unit sales (Danziger, 2018a). The third-party sellers are willing to sell their products through Amazon mainly due to the amount of traffic, but also the convenience it can offer regarding reduced order fulfilment times and shipping times.

As of today, Amazon is well known for having one of the fastest order fulfilment and shipping times, which underlines how logistics serves as one of their most important competitive advantages. The fast order fulfilment is made possible through extensive use of robots and IT-systems. At the end of 2017, Amazon had more than 100 000 advanced robots spread around their massive 230 active distribution centres in the US alone (WINGFIELD, 2017). The high technology distribution centres spread around the country let Amazon deliver their products within short notice, essential for the free 1-2-day delivery offered to the Amazon Prime customers. In comparison, the rest of the entire US retail industry has, in total, less than half the amount of distribution centres, further underlining how the logistics serve as a competitive advantage for Amazon. For the record, the company continuously invest in order to strengthen their infrastructure and value chain, both crucial in order to succeed and keep their market position in the online retail business. Although Amazon´s superior logistics are considered a competitive

advantage, it is possible to imitate by their competitors and is therefore only considered a temporary competitive advantage (Figure 1).

AWS - #1 Cloud Computing service

Amazon Web Services is considered the number one market leader within Cloud Computing, and serves as a sustainable competitive advantage for Amazon. AWS was introduced in 2006 as a strategy to profit on excess server capacity. For Amazon to achieve fast order fulfilments and good customer experiences both speed and capacity at their websites is inevitable (Gigaspaces, 2012). In order to offer sufficient speed and make sure downtime stays at a minimum at peak times such as Cyber Monday and Christmas, Amazon has invested heavy in data servers. The strategy behind AWS is to earn money by renting out excess server capacity as an on-demand, pay-as-you-go cloud storage. AWS has grown to become the number one market leader in cloud computing. Their market share of 30% is more than twice of what their closest competitor, Microsoft Azure, has, and as Matthew Ball, analyst at Canalys, says it "AWS seems to have settled into a sustainable competitive situation relative to Microsoft and Google" (Novet, 2017). This makes sure that Amazon has access to both sufficient speed and capacity when they need it, and the profit generated helps to further invest in the business.

In 2017, revenue created by AWS increased by 42,9% and reached almost 17,5 billion USD, significantly outgrowing Amazon.com. The 17,5 billion USD resulted in a 4,33 billion USD profit, single-handedly helping Amazon to deliver positive bottom line numbers. The business model of AWS is reliable and most definitely scalable, and ensures Amazon is ahead of competitors. To conclude, AWS is considered a sustainable competitive advantage for Amazon.

100 Million Prime users

Amazon's 100 million Prime users bring a sustainable competitive advantage to the company. Amazon Prime, introduced in 2005, is a paid subscription service offered by Amazon. As of today, Prime's more than 100 million subscribers pay an annual fee of 119 USD, boosting the company's revenue with approximately 12 billion USD in 2018. The subscribers get access to special offers, free one- or two-day shipping (depending on area) and unlimited music and video streaming with Prime Music and Prime Video (Amazon Inc., 2018). Even though prime is an independent

business unit, it provides synergies to Amazon.com, making sure they have a customer loyalty no other e-commerce competitor is close to.

In 2017, Amazon shipped more than 5 billion items to their prime customers, and got more new subscribers than in any previous year. Amazon Prime users are considered super users in the e-commerce world, and accounts for about 80 product purchases on average every year. Furthermore, impressively 85% of prime users say they visit Amazon.com at least once a week. In comparison, only 56% of non-prime users reported the same (Danziger, 2018a). The more than 100 billion super users most certainly are valuable for Amazon. They ensure a loyal customer base and increased traffic to Amazon.com. It is considered a sustainable competitive advantage for the company.

Synergies between Amazon.com, Prime and Amazon Web Services (AWS)

The internal synergies created by Amazon's three biggest business units serves as a sustainable competitive advantage. As discussed, both Amazon.com, AWS and Amazon Prime are individually strong business units, but the way they create internal synergies to strengthen Amazon's core business needs mentioning. The business units are all connected in a way that helps them support each other, significantly helping to improve the overall customer experience.

The internal synergies are most definitely valuable, but also fulfils the other categories of the VRIO-analysis, which makes them a sustainable competitive advantage. The 2017 Whole Foods acquisition could potentially strengthen Amazon's internal synergies further, as Amazon on previous occasions has proven their skills.

Successful acquisitions of Zappos, Twitch and Kiva systems

Amazon's acquisitions skills are considered a sustainable competitive advantage. The company has proven their M&A skills over the years by buying companies and implementing them into their core activities. Also, several of the acquisitions have been way outside of their core business, proving their willingness to disrupt other business areas.

The company spent a total of 3 billion USD by purchasing Zappos, Twitch and Kiva systems, which today serves as an essential part of Amazon's core strategy. Kiva Systems, now re-branded

as Amazon Robotics, specializes in robotic warehouse systems, and has been crucial to develop logistics into a competitive advantage. Zappos, on the other hand, was a direct online retail competitor, known for their unique customer service and company culture. The company was acquired by Amazon in 2009 for 1,2 billion USD, to implement the company's soft resources. Another successful company acquisition by Amazon is Twitch. After reaching 55 million subscribers in 2014 Amazon bought the video-streaming network. Today it is among the world's 40 most visited web-pages and is mainly known for broadcasting eSport competition. Amazon's video-streaming service is for many an important reason to become Amazon Prime subscribers, and therefore contributes to an increasingly larger user base for Amazon Prime (Desjardins, 2017).

In 2017, Amazon announced its 13,7 billion acquisition of Whole Foods, as a strategy to become a transcendent brand that is involved in every aspect of the customers daily life. The Whole Foods project is considered as a direct rival to existing physical retailers, but it could potentially also strengthen Amazon.com and Amazon Prime by increasing their product and service assortment.

Amazon has over the years demonstrated their skills as a company that acquires companies and brilliantly integrates them into their core activities. Amazon's deep pockets permit more acquisitions in the future, and their acquisition skills are considered unique for Amazon. Such a skill is clearly valuable and hard to imitate. Based on Amazon's earlier acquisition successes they are most likely organized in order to use this specific resource. Concluding, Amazon's acquisition performance is considered a sustainable competitive advantage.

#2 most reputable brand in the US

Being the second most reputable brand in the US is considered a sustainable competitive advantage. In 2017, Amazon was awarded the sixth most valuable brand in the world by Forbes. The company's value was estimated to 54,1 billion dollars, a 54% increase from 2016 (Forbes, 2018). This tremendous growth in brand value underlines the customer's perception of the company. A study found that 86% Prime-subscribers visits Amazon at least once a week, and that 56% of non-prime-subscribers reports the same. Customers say their top reasons for visiting Amazon is to compare price, and nearly half reports they always check Amazon before buying anything. Amazons closest competitors, Walmart, eBay, Alibaba and Jet is left in the dust in terms

of browsing products, comparing prices, checking availability and delivery speed (Danziger, 2018a).

An annual study of the most reputable companies in the US has awarded Amazon among top two for the last four years (Strauss, 2017). The importance of the reputation is, without doubt, immense, especially within e-commerce. The lack of contact between seller and buyer is one of the biggest problems for the industry, but a good reputation could make up for it. A report found that 86% of consumers said negative online reviews influenced their online buying decision (Rutherford, 2018). This is backed up by another study finding that for most online shoppers reputation is actually more important than price (Castleford, 2015).

Being “top of mind” among most consumers is considered both valuable, rare and costly to imitate. The way Amazon is organized to utilize their brand reputation makes it serve as a sustainable competitive advantage.

37% of revenue in a fast-growing Game Video Content market

Amazon's market position within the Game Video Content market (GVC) serves as a sustainable competitive advantage. In 2016, more than 185 million viewers visited Amazons GVC website, Twitch. Twitch is a social network for gamers where they can watch others play games, and serves as a crucial gateway for Amazon to the rapidly growing esports market. The total GVC market generated 4,6 Billion USD in revenue in 2016, and Twitch with its 16% market share managed to capture 37% of the revenue. The next three to four years, the GVC market is estimated to grow 20-21% annually.

The GVC market brings huge advertising opportunities to reach millennials. Most users are between 18 and 34 years old, roughly equal viewership between men and women, and with an average annual income over 50 000 USD. Millennials are considered hard to reach for marketers, and therefore the GVC market with its 600 million customers and more than 20% annual growth offers huge opportunities (Ballard, 2017). The platform offers possibilities to generate marketing revenue like for instance Facebook, and based on the VRIO-framework it is considered a sustainable competitive advantage.

3.3.2.2 Weaknesses

Single-minded online focus

Single-minded online focus is considered a strategic disadvantage for Amazon. The company's main focus has for years been to be the number one online retailer in the world. Many experts have stated that Amazons single-minded online focus might come in the way of expansion possibilities, both in the US, but especially in emerging markets. In most developing countries online shopping is not as widespread as in Europe, North America and some Asian countries. In developing countries, most shopping is still done through traditional, physical stores. Walmart, one of Amazon's biggest retail competitors, have the advantage that they are physical present, and their business model is therefore easily scalable into emerging markets. The online focus may have been a distraction limiting Amazons full potential, particularly in emerging markets. Not only does the online focus potentially harm Amazon's full potential in emerging markets, but it could also be the fact in developed countries. A research on US customers found that impulse sales are drastically reduced through online shopping. While 68% of the survey contestants had done impulse sales in physical stores, just about 21% had done so through online shopping (Kressmann, 2017).

Amazon has, through recent acquisitions, proved that they are aware of this potential holdback. In 2015 they opened their first physical bookstore (McCarthy, 2017). As of January 2018, they have opened another 17 bookstores and 63 pop-up stores across the US (E. Kim, 2017a). Even more interesting, Amazon proved in 2017 their willingness to cope with the problems by introducing the Amazon Go pilot project, and by that entering the physical grocery business for the first time. Amazon Go is a supermarket pilot project focusing on increasing convenience for shoppers through technological innovations. Further, the 13,8 billion USD Acquisition of the Whole Foods supermarket chain has made Amazon minimize one of their biggest weaknesses. Although the weakness is reduced, it is still considered a strategic disadvantage, even though one should keep in mind that most of Amazon's competitive advantages are online.

Weakened strategic advantage by growing too big

Growing too big will directly harm Amazon's efficiency, and is becoming a strategic disadvantage for the company. Most companies strive to benefit from economies of scale. The theory is simple; the larger you become the more you can benefit from economies of scale through reduced

marginal costs. On the other hand, if a company grows too much it can actually outgrow the benefits and gain what is called diseconomies of scale, the latter effect is displayed in Figure 3.12.

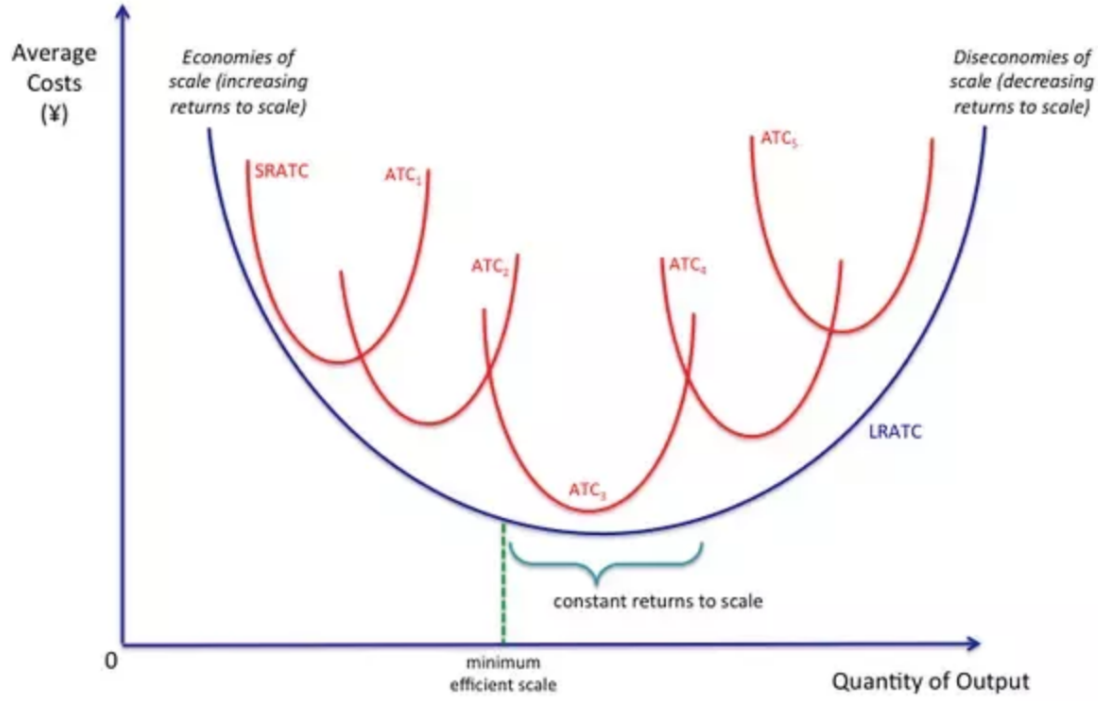


Figure 3.12: Diseconomies of scale illustration (Canback, 2004).

Studies have found that a combination of communication breakdown, reduced motivation, lack of coordination and loss of direction all helps to amplify the diseconomies of scale effect (Canback, 2004). One of Amazon's most valuable strengths relies on offering superior logistics while being cost-efficient. The result is being able to offer the largest product portfolio, at the lowest price, to the most satisfied customers. If the prices and convenience for the customers were to be negatively affected by Amazon growing too large, it would directly affect the customer satisfaction, subsequently affecting Amazons potential to grow further. Also, by continuously growing, companies tend to diversify its business way beyond their core competencies. Amazon has over the years expanded their core business from being just books, to offer almost everything online. While being superior within logistics and cost efficiency is easily translatable within the retail industry, it is not necessarily the case for other areas of business. One could suggest that both AWS and most of the Prime services are way out of Amazon's core competencies. Also, the negative international profits discussed in the next paragraph signalises that the company might

be expanding too quickly. On the contrary, the way the company is structured today utilizes the business units to improve the overall performance and growth of Amazon.com. It is reasonable to assume that Whole Foods will improve from the acquisition, utilizing Amazons traffic and superior logistics and cost leadership. Also, the fact that CEO, Jeff Bezos, is still in lead of the company helps the internal coordination and keeping the company in the right direction.

Core business running at break-even

A core business running at break-even is considered a strategic disadvantage for Amazon.

In the beginning of 2018, Amazon reported positive results for the 11 straight quarter. Also, it was the first time the company reported earnings above 1 billion USD.

Figure 3.13: Amazon's revenue and profit (Rey, 2018).

Although earnings are positive, they are alarmingly low in comparison with the company's revenue. The low margin makes Amazon vulnerable to changes in both sales prices and costs. AWS is by far amazon's most profitable business unit, with an operating margin around 25% in

Q4 2017. Amazon's core retail business, on the other hand, runs at break-even due to negative operating margin in the international market, acquisitions and heavy investments, both in infrastructure and R&D (Rey, 2018). The fact that Amazon.com is currently running at break-even can potentially be very bad for the company. Small changes in cost could cause huge losses for the company.

Many, including Donald Trump, have expressed their opinion on Amazon taking advantage of the US Post office. If the US Post Office were to increase their charge, it could be fatal for Amazon's already low profits, especially since the Amazon Prime free two-day shipping is essential for many of Amazons users. Donald Trump has also uttered his desire to increase taxes for America's internet giants, but this will be further elaborated under external factors. Both increased freight cost and increased taxes could lead to huge negative quarterly and yearly numbers for Amazon, and in order to reduce this risk the company needs to increase their profit margin. As for now, the low profit margin of Amazon.com serves as a strategic disadvantage.

Total liabilities tripled in 5 years

Amazon's increasing liabilities is considered a weakness for Amazon. The company's remarkable revenue growth is largely a result of significant infrastructure investments. As a result, the liabilities have increased accordingly. Amazon's liabilities exceeded 100 Billion USD in 2017 and have more than tripled since 2013. Comparingly, their debt to equity ratio is way above the general retail competitors and consumer services (Stock-analysis.net, 2018).

The large 2017 increase in liabilities is especially due to the 13,8 billion whole foods acquisition, but the increasing liabilities has been a trend for years. The trend indicates that Amazons liabilities grows somewhat proportionally with the company's revenue, and that the company might need to keep investing heavily to grow further. As Amazon continues to expand, both organic and through acquisitions, it could be a potential weakness for the company if they cannot grow without increasing debt, especially if interest rates continue to increase in the future.

Counterfeit sales

The amount of counterfeit sales on Amazon serves as a weakness. Even though the company has a zero-tolerance policy, a large number of counterfeit products are sold by third-party sellers

through their sites. The result has been both dissatisfied customers and negative publicity. For instance, Amazon was sued by Apple after finding that 90% of the chargers sold through Amazon was fake (Vincent, 2016). Apple Engineers said the chargers were not only fakes, but dangerous with the potential to catch fire or electrocute customers. Some labels have also stopped selling their products through Amazon, as the website clearly has problems keeping counterfeit sellers away.

The problem with counterfeit sales escalated significantly after Amazon actively targeted Chinese sellers in 2015. Amazon wanted to make it easier for the Chinese sellers and streamlined the shipping process from China to the US, Canada and Europe. Dissatisfied customers due to counterfeit and potentially dangerous products could directly harm one of the company's most valuable sustainable competitive advantages, their brand reputation. The amount of counterfeit sales is therefore considered a weakness.

Product flops and weak R&D capabilities

Even though Amazon is considered among the most reputable and successful brands in the world, the company has also had its downs. Amazon has experienced several product flops, and together with their weak R&D capabilities it is considered a weakness for the company. One of the company's biggest failures is considered to be the Fire Phone. It was released in 2014 but was soon pulled back after it did not even sell at a price of 99 cents. Amazon eventually had to bookkeep a 170 million USD loss from the Fire Phone initiative. Another failure was Amazons 2017 initiative to enter the travel booking industry. They released Destinations as a direct competitor to existing travel agencies etc, but it was shut down after less than 7 months. The list goes on with launches of both online payment-systems, coupon marketplaces etc, and shows that the company makes a lot of costly mistakes.

To cope with the failed business launches, Amazon has substantially increased their R&D spending the last couple of years. Today, Amazon outspends the likes of Apple, Samsung, Microsoft and Alphabet. In 2017, Amazon spent an enormous 16,1 Billion USD on R&D, which usually results in a huge patent portfolio. Surprisingly, Amazon creates by far the least patents among the mentioned companies, implying that Amazon does not get well paid for the money they invest in R&D (U.S Patent and Trademark Office, 2016). Although one has to keep in mind

the nature of Amazon's industry compared to the others discussed. For Amazon to keep their competitive advantage when it comes to cost leadership and logistics, as well as entering into new business areas to boost their revenue, they need to perform better within R&D and significantly strengthen their R&D portfolio.

3.3.3 External Factors:

Similar to the strategic analysis of Facebook, both a PEST- and a Porter's Five Forces- analysis will be conducted to address external factors affecting Amazon.

3.3.3.1 PEST

The PEST- analysis focuses on Amazon's external environment. It is used to determine the external factors impacting the company's strategic position. The PEST-analysis will focus on the most important factors affecting Amazon's core business, Amazon.com, in the long term. Our findings are depicted in Table 3.7 and will be analysed in turn below.

Political factors	
• Trump administration's trade protectionism	(Threat)
• Internet taxes	(Threat)
• Brexit	(Opportunity)
• Governmental e-commerce support	(Opportunity)
Economic factors	
• Economic stability and increasing disposable income	(Opportunity)
• Increasing disposable income	(Opportunity)
Socio-cultural factors	
• Increasing internet usage	(Opportunity)
• Increased physical presence of Amazon	(Opportunity)
• Further expansion of product portfolio	(Opportunity)
• Increased health and environmental focus	(Opportunity & Threat)
Technological factors	
• Rapid technological obsolescence	(Opportunity & Threat)
• Cyber security	(Threat)
• New ways of using amazon webstore	(Opportunity)

Table 3.7: Summary of PEST analysis for Amazon.

Political factors

Based in the US, Amazon is highly influenced by US politics. Given the size and scope of the company, it is also bound to influence politics abroad. As Amazon has grown larger, both in the US and abroad, the number of political issues has increased. To cope with the increased political issues, Amazon hired former White House spokesman Jay Carney in 2015 to be responsible for Worldwide Corporate Affairs (Kusek, 2015). Although Amazon takes the potential political issues seriously, many things are out of their control and cannot easily be solved by lobbying. Hence, Amazon is highly dependent on political stability in order to grow their business. Political factors do not necessarily have to be negative for Amazon, as several of them offers great opportunities for the company. The following political factors have been addressed as important for Amazon the be aware of:

- Trade protectionism
- Increased internet taxes
- Brexit
- Increased governmental support for e-commerce

Trump administration's trade protectionism and possible Chinese vengeance (Threat)

The Trump administration's trade protectionism serves as a threat to Amazon. Since Trump was elected president in 2017, one of his political cornerstones has been to strengthen the competitiveness of American companies in order to create more jobs. The Trump administration have signalized that they want to do this by introducing fees on imported products. For Amazon, importing a lot of their products from overseas, such an action to bolster domestic companies could hurt their business severely. In the annual report of 2016 Amazon states that "government regulation is evolving and unfavourable changes could harm our business" , and especially their effort to succeed in China could be harmed (Dastin, 2017).

China, with about 500 billion USD of sales in 2017, is the world's biggest e-commerce market (Statista, 2018g). With a 35 % annual growth, it is also one of the fastest growing e-commerce markets in the world (Edquid, 2017) , with e-commerce accounting for about 15,9% of total retail sales. The market is dominated by two large companies, Alibaba and JD.com, accounting for 47%

and 20% of the market share, respectively. Amazon, which for years have tried to succeed in the Chinese market, holds about 1,3% of the Chinese e-commerce market. Several factors are of importance for their struggle to succeed, but the most important is the tough competition. Alibaba and JD offset Amazon's competitive advantage with Amazon Prime´s free shipping, and due to Chinese government censorship, Amazon cannot offer Amazon Prime in China (Keyes, 2017).

Alibaba and JD.com are performing top of the line in most areas, but one factor that has caused reputational problems for them is the extensive number of counterfeit products being sold through their platforms. This is a problem familiar to Amazon, as discussed under the company's weaknesses. That said, it could potentially be an opportunity for them in the Chinese market as they have not yet gotten related to counterfeit products in that market. Increased control over what is sold through Amazon's platform and a significant reduction of counterfeit products will strengthen the company's brand. Amazon could potentially try to exploit the Chinese competitor's reputational problem by positioning themselves as an e-commerce retailer for authentic western products. On the other hand, political disputes could make it difficult as it would directly affect the import/export relationship between China and the US.

A vast majority of products sold through Amazon are Chinese, and more than 25% of the sellers at Amazon are based in China (Ecommerce News, 2017a). Import fees and regulations will significantly reduce the competitiveness of the Chinese manufacturers, and further increase the American customer's prices. Increased prices will further impair Amazon's reputation. In all probability, such taxes will lead to fewer Chinese products sold through Amazon, quite likely causing Chinese government reactions. Such Chinese reactions will most certainly affect Amazons effort to succeed in the Chinese e-commerce market, and a Chinese backlash of the US trade protectionism needs to be monitored carefully.

Internet taxes (Threat)

Increased internet taxes in the future is considered a threat to Amazon. The main reason for the Trump administration's desire to increase American companies' competitiveness through trade protectionism is to strengthen the overall state of the American economy and "*Making American Great Again*" (Amadeo, 2018). To achieve this, President Donald Trump has stated that the practice for internet taxes needs to be changed, especially for companies like Amazon using third

party sellers. As of today, Amazon does not collect state sales taxes for its third-party platform sellers, resulting in lack of tax income for the states (T. Kim, 2018). A similar problem has also occurred outside of US borders. For instance, EU has announced they are working on finding ways to make Google, Facebook and Amazon pay more tax, as discussed in the analysis of Facebook.

These companies may have no offices, shops or other physical presence in a country, and a report said that these technology companies paid less than half the tax of physical businesses. For Amazon´s sake, another report proved that Amazons corporation tax bill in the UK was actually 11 times smaller than that of British bookstores. Now, the EU, with support from both Germany, France, Spain, Italy and more, has said they are working on a new taxation model to increase the tax income from such companies (Rankin, 2017). This is likely to have a direct effect on Amazon's bottom line.

Brexit (Opportunity)

United Kingdom breaking out of the EU opens the possibility for the US and UK to make their own trade agreement and serves as an opportunity for Amazon. The UK e-commerce market is the third largest in the world with almost 100 billion USD of online sales. For years, UK has been included in the EU trade agreement, ensuring free flow of goods within the EU and taxes on imports from outside of the EU. In 2016, a UK referendum decided that UK should leave the EU and make their own trade agreements. Although the BREXIT in itself is not considered positive for Amazon, as it would result in more markets to deal with, a potential new trade agreement between the US and UK could open up the trade borders further. Today, Amazon accounts for 16 %, about 16 billion USD, of the market in the UK , but a new trade agreement could significantly increase this and increase Amazons revenue with several billion USD (Ecommerce News, 2017b).

Governmental support for e-commerce (Opportunity)

Increased governmental e-commerce support serves as an opportunity for Amazon. In developed economies, most customers recognize e-commerce as safe. Both national and international consumer rights are of importance for this, but not every market has fully functional e-commerce consumer rights. Amazon's strive to become a world-wide market leader suffers from this. In many developed countries, consumers are afraid of purchasing goods online because weak

regulations leave customers vulnerable to financial losses. Over the years, governmental support for e-commerce has increased worldwide, and further strengthening of the consumer rights worldwide offers a great opportunity for Amazon.

Even though developed countries have strong consumer rights to avoid customers being exposed to financial losses, there are still problems. As more personal information makes it way online, the importance of cyber-security is increasing. For AWS, offering online storage to its customers, strict cyber security is of great importance. Increasing governmental support for e-commerce and efforts on cyber-security offers an opportunity for Amazon, as it will help them improve the overall security of their services.

Economic factors

Doing business all over the world, Amazon is highly affected by the worlds macroeconomic standing. Economic stability, disposable income and currency fluctuations all affect Amazon's growth ambitions.

Economic stability and increasing disposable income (Opportunity)

A stable world economy and steadily growing disposable income around the world is considered an opportunity for Amazon. Since the 2008 financial crisis, there has been economic stability in most developed markets. Stock indices both in the US, Europe and developed Asian countries have risen to all-time highs the last couple of years. Together with low interest rate, stable and low inflation, and falling unemployment rates the overall world economy is considered stable, which serves as an opportunity for Amazon. A stable world economy also influences the customer’s disposable income, which in most markets have risen significantly recent years.

In the US, disposable personal income was about 11 000 Billion USD in 2010. 8 years later, the disposable personal income is estimated at almost 15 000 Billion USD. Further growth is estimated, and serves as an opportunity for Amazon (Trading Economics, 2018). Although the disposable income growth in the US has been advantageous, it cannot be compared with the growth in Asian markets, as displayed in Figure 3.14.

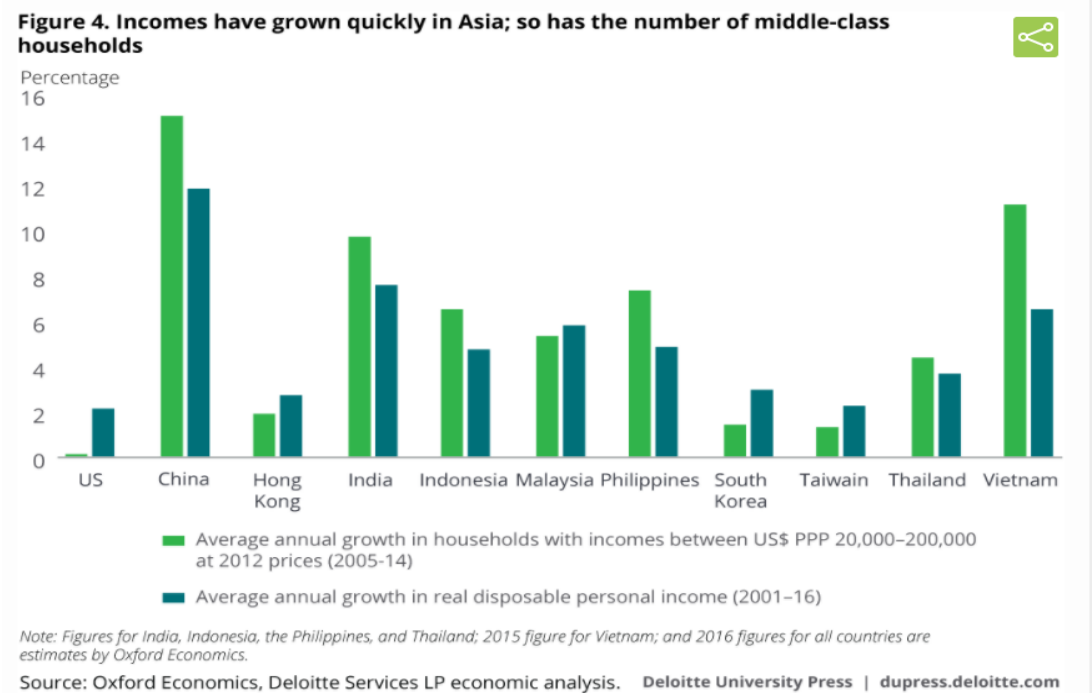


Figure 3.14: Growth in household and disposable income by region (Barua, 2017).

Important Asian economies have experienced rapid growth, both in real disposable personal income, but also in households entering the middle class with incomes between 20 000 - 200 000 USD (Barua, 2017). There is a strong connection between retail sales and disposable income, and further growth would suggest Amazon could actually win customers in Asia without even winning customers from their competitors.

Socio-cultural factors

Amazon is highly affected by social and environmental factors from all the countries they are conducting their business, and changes in customers habits must be monitored closely. The following factors are considered opportunities or threats for Amazon.

Increasing internet usage

Increasing internet usage around the world serves as an opportunity for Amazon. Most of their net revenue comes from their online business, therefore the amount of internet users is of great importance. In 2017, 46,8% of the global population accessed the internet, and estimates says it will reach 53,7% in 2021. As the world population increases as well, this potential growth in

internet users could possibly open up for more than 700 million new customers (Statista, 2018m, 2018c).

Looking at the e-commerce market specifically, the 46,8% of global internet users made up a total retail e-commerce sale of 2304 billion USD in 2017. In 2021 this market is expected to have doubled, reaching 4878 billion USD worldwide (Statista, 2018k). Looking at the increasing amount of internet users and the expected growth rates of the e-commerce industry it is easy to conclude that it serves as an opportunity for Amazon.

Increased physical presence of Amazon (Opportunity)

As single-minded online focus serves as a weakness for Amazon, increased physical presence represents an opportunity. Amazon has already started penetrating the physical market, both by starting up book shops and Amazon Go, but also through the major Whole Foods acquisition. By further developing the physical presence of the business, together with Amazon's one of a kind cost-leadership and logistics skills, this could improve their already strong brand value. Research has shown that physical stores, when compared to online stores, has a higher degree of repeat purchases and a higher loyal customer base (July Systems, 2017). Amazon, with their outstanding customer loyalty within e-commerce, could further improve this area through the physical market. Physical presence will also help Amazon to expand their global footprint. Gained experience from opening physical stores in the US will help Amazon to penetrate into emerging markets.

Further expansion of product portfolio (Opportunity)

The acquisition of Whole foods and the Amazon Go pilot project once again proves Amazon's willingness to disrupt new businesses, and further expansion of product portfolio serves as an opportunity for Amazon. Entering the grocery market opens up for a lot of doors for Amazon. One of the problems with online shopping is the lack of impulse sales. Through Whole foods and Amazon Go, the number of impulse sales will increase significantly. Second, it opens up a whole new opportunity within online grocery sales. Online grocery sales are expected to boom the next couple of years, reaching 100 billion USD in 2025 (Danziger, 2018b).

The business model of Amazon, allowing third-party sellers to enter the website, also opens up to further increase the product portfolio. Not only can Amazon increase the number of products they

offer themselves, but they could also increase the number of products offered by other without having to do significant investments. One huge advantage for Amazon is that they possess enormous information on what customers want. By going through search and shopping statistics they can at any point in time check what the customers want, and possibly start to produce these products themselves (Pamela N. Danziger, 2017). As of today, about 40% of the products sold through Amazon are by third-party resellers. This leaves about 60% of the products sold by Amazon. By backward integration to production, Amazon could start making more private label goods, and by that, both increase their margin as well as lower the customer's price.

Increased health and environmental focus by consumers (Opportunity & Threat)

Amazons many warehouses, fast shipping and superior infrastructure is a direct factor to their success. As health and environmental focus by consumers increases increased focus on sustainability could serve as an opportunity, but it could also backlash and become a reputational threat.

Amazon's warehouses, data centers and delivery trucks sum up to one of US biggest energy users. Although Amazon claims its e-commerce and cloud storage are less polluting than the activities they are replacing, lack of environmental impact transparency makes those claims difficult to verify (Ryan, 2017). Furthermore, their home delivery service accounts for a huge environmental impact. As the number of home deliveries increases significantly, the environmental impact of the deliveries increases accordingly. Freight traffic entering neighbourhoods are creating noise problems, congestion, infrastructure damage and greenhouse emissions.

Greenpeace has a tradition of ranking companies over their environmental practices every year. The ranking ranges from A to F, where Amazon was one of only four companies receiving the lowest ranking. Greenpeace accuses Amazon of being opaque when discussing its environmental practices, due to Amazon offering only the information required by law (Fingas, 2017). According to an Accenture article, inaction on environmental issues is a direct threat to brand value, due to rising interest in business sustainability (Accenture, 2017). As of today, the environmental regulations are not that strict, but this could change in the future. Subsequently, Amazon's weak environmental performance, and the media attention it causes, is considered a threat.

Disregarding the above discussion, increased health- and environmental focus could also be a great opportunity for Amazon. As Amazon claims, most of their services are less polluting than the existing alternatives. Even though freight of products is causing environmental issues, the alternative would be for the customer to go to the store themselves, probably causing an even higher environmental impact. Furthermore, Amazon is also investing heavily in technology for using aerial delivery drones, which according to researchers could cut greenhouse gas emissions further. For instance, they found that in California drones could reduce the emissions of greenhouse gases by up to 59% (Shankland, 2018). When it comes to reducing packaging waste and offering environmentally friendly packing, Amazon has worked hard and have managed to convince many customers their services are eco-friendly (Platt, 2018).

Amazon Web Services has helped many companies and private customers to reduce their need for in-house server capacity. Companies like Netflix, Airbnb and Nasa all uses Amazon's advanced cloud computing for their services. In 2016, more than 40% of Amazons energy usage came from renewable energy. The goal for 2017 is 50%, and the long-term goal is said to be 100%. On the contrary, the efficiency of Amazon's servers is considered at least as important as the power mix when it comes to reducing carbon impact. By using fewer servers and powering them more efficiently, Amazon claims their customers are served using less than 25% the number of servers as they would if they had them in-house. Additionally, on-premises data centers are 29% less efficient in their power usage, which sums up to an 84 % reduction in the amount of power required (Amazon, 2018). Furthermore, Amazon informs that their power mix with 40% renewable energy, is 28% less carbon intensive than the global average.

Also, Amazon has set a goal to build solar energy systems at 50 fulfilment network buildings by 2020. They also announced Amazon Wind Farm Texas in 2016, a wind farm generating 1 megawatt hours. In 2016, they also joined Apple, Google and Microsoft in filing a legal brief to support the implementation of the US environmental protection agency's clean power plan (EcoWatch, 2016). The possibility of further decreasing the company's environmental footprint, as well as being more transparent in the future is considered an opportunity as the environmental focus among consumers increases.

Technological factors

Rapid technological obsolescence (Threat & Opportunity)

As Amazon's R&D performance is considered weak, rapid technological obsolescence is a direct threat to the company. On the contrary, their deep pockets and acquisition skills could offset the threat and serve as an opportunity.

As technological development has sparked momentum in recent decades, technologies rapidly become obsolescence. To keep up with the development, Amazon is dependent on being adaptable and innovative. Today, one of Amazon's competitive advantages is their superior logistics. Keeping a competitive advantage is challenging, and it requires that Amazon are at least as innovative as their competitors. To achieve this, Amazon either has to be innovative themselves or acquire someone that is.

When it comes to Amazon's R&D and acquisition capabilities, it has already been discussed under strengths and weaknesses. Their R&D performance is considered weak compared to their competitors. Therefore, it is a direct threat that their competitors are performing stronger within R&D, and this certainly needs to be an area of focus in the future. Regarding Amazon's acquisition skills, they are considered strong. Amazon has already proved their skills with acquiring companies and integrating them to become a part of the company's core competency. It was discussed under Amazon's strengths and will most definitely be an opportunity also in the future. Amazon has deep pockets and could easily acquire any up and coming e-commerce competitor to decrease competition level and strengthen their own competitive advantage.

New ways of using Amazon Webstore (Opportunity)

New technology can lead to new ways reaching customers, serving as an opportunity for Amazon. As of today, all of Amazon's e-commerce sales take place through Amazon.com. Also, Amazon can reach the traditional retail customers through the newly acquired supermarket chain Whole Foods and their Amazon Go supermarket pilot project. Amazon go´s competitive advantage is a technology noticing whenever a customer picks a product from the shelves and automatically charges for it when the customer leaves the store. If the pilot project proves successful, it is reasonable to assume the technology will be continued to the Whole Foods supermarkets. Potentially, this can help boost Whole Foods market share.

Also, Amazon is investing heavily in their Amazon Alexa technology. Amazon Alexa uses artificial intelligence to serve as a virtual assistant, providing you with all sorts of information. As of today, one can play music, get weather forecasts, search Google/Wikipedia etc. by just speaking to the device. The long-term goal of the technology is to serve as a full-time assistant, helping to buy goods through Amazon.com or Whole foods by speaking to it from the other side of the room (Clark, 2017). The technology is far from fully developed, and it will take many years for customers to fully embrace the Amazon Alexa. Despite the fact, it is considered an opportunity within the next couple of years.

3.3.3.2 Porter's Five Forces

This part of the paper will focus on the competitive environment surrounding Amazon.com in the e-commerce industry. The fast-growing industry is characterized by high rivalry and medium to high buyer power, increasing the importance of continuously adapting to meet new circumstances. The Porter's five forces framework helps to understand the competitive drivers, and how to take action to overcome them.

Rivalry among existing competitors

The rivalry among e-commerce companies is considered high. Amazon serves as the market leader with its 37% market share in the US, but competes directly against the Chinese giants, Alibaba and JD.com. Also, Wal-Mart's increasing online investments intensifies the rivalry. Walmart expects to grow its ecommerce business by 40% in 2019. If they succeed, it is a direct threat to Amazon, as Walmart will have to win customers from others in order to reach its goal. Furthermore, thousands of smaller e-commerce retailers both in the US and globally are competing for the customers. A study revealed that more than 26 000 American ecommerce retailers generated at least 100 000 USD in 2013. The number was a 13,6% increase from the previous year, and an increasing number of medium sized ecommerce retailers servers as direct competition to Amazon (Thomas, 2018).

The customer loyalty among e-commerce shoppers is considered very low, and further increases the rivalry. Luckily, as discussed in the VRIO-analysis, Amazon's Prime subscription program makes them the e-commerce retailer with the highest customer loyalty. Amazon's astounding

customer loyalty helps to offset the threat the general customer loyalty brings. Furthermore, the American e-commerce market is expected to grow with a two-digit number the next years, proving that the competitors not necessarily have to steal customers from each other in order to grow/survive. The expected growth helps to decrease the rivalry among existing competitors, but the number of competitors still makes sure the rivalry is considered high.

Bargaining power of buyers

The customers bargaining power over Amazon is considered medium to high. For Amazon, one of their most important competitive advantages is the customers brand perception. High customer satisfaction is therefore crucial in order to keep the competitive advantage. As of today, Amazon are considered among the top two most reputable brands in the US and has a value of more than 50 billion USD. Sudden changes in the customers perception of the company would directly harm its opportunities to grow and win market shares. Due to a large number of e-commerce competitors, the buyers switching cost is also considered low.

On the contrary, Amazon has managed to increase the switching cost for most of their super users by offering the Amazon Prime subscriptions. As discussed in the VRIO-analysis, Amazon Prime serves as the single most important factor for Amazon's astounding customer loyalty. Moreover, Amazons product portfolio is largely diversified, offering more than 370 million different products, further decreasing the bargaining power of customers (Scrape Hero, 2017). Concludingly, the many competitors and strong competition, together with Amazons efforts to increase switching cost, leaves bargaining power at medium to high.

Threat of new entrants

Threat of new entrants is considered medium/low. New entrants to the e-commerce industry could put pressure on the profitability, and therefore needs to be considered. Although entering e-commerce does not necessarily have to be difficult, winning market shares and challenging Amazon would require significant investments, time and efforts. One of Amazon’s competitive advantages in the US are their more than 230 distribution centres and 100 000 advanced robots. In order for someone to challenge Amazon directly, they would have to offset this advantage by enormous investments or revolutionary technology. Today, Amazon's biggest e-commerce competitor is considered to be Alibaba, but within the retail industry, several other retailers hold

large market shares. Wal-Mart, the by far largest retailer in the world regarding revenue, serves as a direct threat to the company. Wal-Mart has yet to succeed online, but have invested heavy lately in order to close amazons gap in e-commerce (Bose, 2018).

As discussed in the PEST-analysis, Amazon has put a lot of effort into their Alexa-platform, which is thought to notably affect the future of e-commerce. Also, Apple and Google bet hard on their AI home systems, and it is not unlikely that they will enter the e-commerce market, by for instance acquiring an established e-commerce or physical retailer. Being two of the biggest companies in the world, their pockets are deep enough to finance such an investment, and their technological skills could make it easy to offset Amazon's logistics. Also, the brand loyalty within the e-commerce industry is low, making it easier to win market shares (Danziger, 2018a). On the contrary, Amazon has an enormous advantage with their Prime subscribers, making sure they have the highest customer loyalty within in the business. The prime subscribers are, as earlier discussed, super e-commerce users, and for them a potential change of e-commerce provider will be of a higher cost. Another potential threat is forward integration for manufacturers, or backward integration by for instance the US Post Service, but as more and more third-party retailers are joining Amazon, this threat is not considered significant.

Even though some companies may have the opportunity to challenge Amazon when it comes to investments in warehousing, logistics, distribution, marketing etc., factors like established brand reputation can hardly be bought and would require years of work. The threat of new entrants is therefore considered low to medium.

Threat of substitutes

Substitute products are considered to offer a medium threat for Amazon. As of today, only physical stores are offering a direct threat to Amazon in its online competitors. Although the physical stores struggle with higher costs and weaker product range they have the possibility to offer the customers something personal and a physical presentation of the products being bought. Even though physical stores tend to be more expensive, the substation threat is still present and therefore considered medium.

Bargaining power of suppliers

Even though Amazon is highly dependent on their suppliers to produce products, their bargaining power is considered low. Amazon's has two main types of suppliers, the around 5 million third-party sellers that sells their products through Amazon.com, and the manufacturers and suppliers selling directly to Amazon (Smale, 2017). As Amazon's dominance continues to grow, suppliers are forced to play by its rules. The visibility and ability to drive sales for suppliers instantly, makes them a tough negotiator. Being the link between companies and customers, Amazon also has the possibility to limit companies access to customer data, making the companies even more dependent on Amazon (E. Kim, 2017b).

Due to amazons strong standing in the e-commerce business, forward integration from any of their suppliers are not considered a threat. When it comes to supplier switching cost for Amazon, it is almost negligible, leaving the suppliers far away from a position where they can influence Amazon. The number of suppliers supplying Amazon is also high, further weakening their bargaining power

Rivalry among existing competitors = High
● + Number of competitors ● - Low customer loyalty ● - e-commerce growth
Bargaining power of buyers = Medium / High
● + Brand perception one of Amazon's most important competitive advantages ● + Many competitors ● + Low switching cost ● + Price sensitive customers ● - Amazon Prime ● - Diversified product portfolio
Threat of new entrants = Low/Medium
● - Requires significant investments ● - Amazon Prime subscribers ● - Amazon's reputation ● + Low brand loyalty ● + Possible entrants deep pockets

Threat of substitutes = Medium
● + Regular stores
Bargaining power of suppliers = Low
● - Amazon's ability to drive sales ● - Amazon's amount of customer data ● - Amazon's market position reduces willingness for forward/backward integration ● - Amount of suppliers

Table 3.8: Summary of Porter's Five Forces analysis for Amazon.

3.3.4 Summary of SWOT

Based on the strategic analysis above, the most important value drivers for Amazon is summarised in Figure 3.9. The following value drives will be used to assess the likelihood of Amazon meeting the implied growth rate as presented in part 4.1. Noteworthy is the expected growth rate of the e-commerce market, and the customers perception of Amazon which serves as an enormous opportunity. On the contrary, low margins, increasing liabilities, possible tax increases and trade protectionisms serves as threats for Amazon's ability to grow.

Strengths	**Weaknesses**
● Superior logistics ● AWS - #1 cloud computing service ● Internal Synergies created by Amazon.com, AWS and Prime ● #2 most reputable brand in the US	● Single minded online focus ● Weakened strategic advantage by growing too big ● Low margins ● Rapidly increasing liabilities
Opportunities	**Threats**
● Increasing internet usage ● Increased physical presence ● Brexit ● Further expansion of product portfolio ● New ways of using Amazon.com	● Trump administration's trade protectionism ● Internet taxes ● Medium/high buyer power ● Rivalry in the market

Table 3.9: Summary of SWOT analysis for Amazon.

4.0 Discussion

The following part will discuss the strategic analysis in context with the implied growth rate. For the sake of this, the most important findings from the strategic analysis will be pinpointed and its relevance for the specific company's future FCFF will be examined by developing scenarios.

4.1 Facebook Discussion

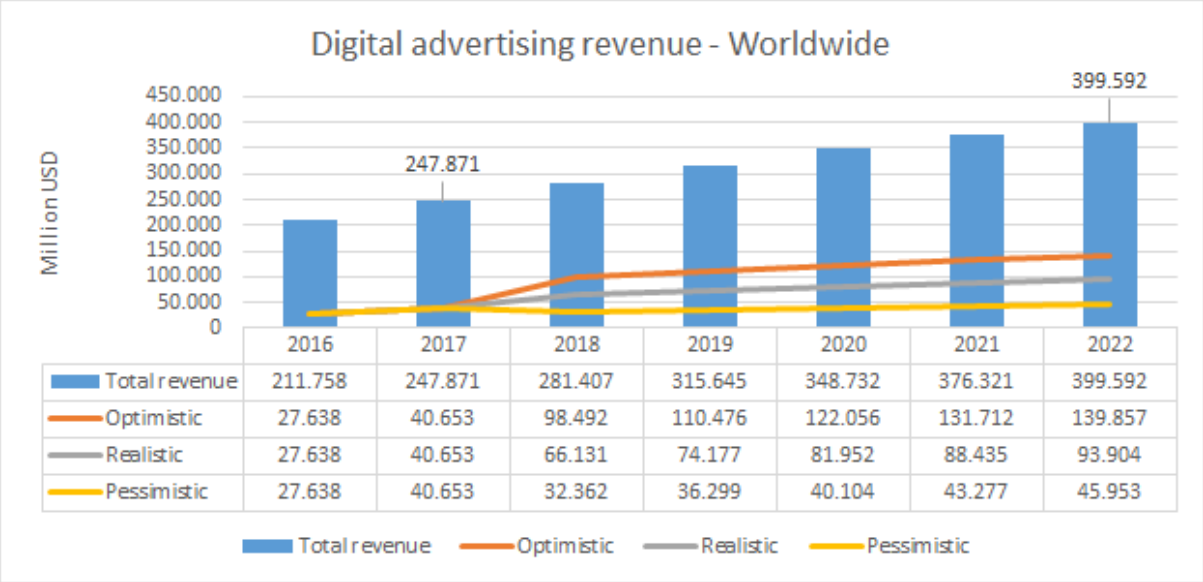
The reverse-engineered DCF analysis of Facebook backed out the growth rate implied by the current stock price, and the analysis revealed that the market expects the company to grow its FCFF at a rate of 6,97% annually over the next ten years. Facebook had a FCFF of 17,5 billion USD in 2017, hence the market expects that the figure could possibly reach 34,3 billion USD in 2027. Subsequently, we explored the strategic environment surrounding the company that forms the playing field on which Facebook must succeed in order to deliver on the markets growth expectations. In the discussion below we set out to connect the two parts of the analysis by developing scenarios of the potential impact of the strategic value drivers on growth. The discussion enables us to broadly conclude whether Facebook will be able to deliver a growth rate of 6,97% in FCFF as implied by the current stock price. We find evidence to support the notion that Facebook is well-positioned to meet the market expectations, with the implication that as of 31. January 2018 the stock showed indications of being underpriced.

4.1.1 Revenue growth

In order for Facebook to deliver on the implied growth rate in FCFF of 6,97% annually over the next ten years, the company will certainly have to grow its revenues. Top-line growth is essential for value creation, and held together with the profit margin it is likely to be one of the most important determinants for delivering consistently high growth rates in FCFF. Departing from the strategic analysis, the following discussion on Facebook’s future revenue growth will evolve around the prospects of the digital advertising industry, Facebook’s possible expansion to China, and the company’s growing efforts to diversify its business to include virtual reality products. We start by looking at the global digital advertising industry.

The digital advertising industry

The digital advertising industry is the single most important determinant of revenue growth for Facebook over the coming years. Both the fact that digital advertisement makes up 99% of current revenues, as well as the fact that the growth rates for the industry are expected to be high over the coming years makes it hard to overstate its importance. In the company's own words: *"We generate substantially all of our revenue from advertising"* (Facebook Inc., 2018b p. 41). Projections show that the 250 billion USD digital advertising market is expected to grow at a CAGR of 10% to become a 400 billion USD industry in 2022. As it is difficult to pinpoint Facebook's performance in an industry that is changing fast the discussion will revolve around the scenarios illustrated in Figure 4.1.



	2016	2017	2018	2019	2020	2021	2022
Total revenue	211.758	247.871	281.407	315.645	348.732	376.321	399.592
Optimistic	27.638	40.653	98.492	110.476	122.056	131.712	139.857
Realistic	27.638	40.653	66.131	74.177	81.952	88.435	93.904
Pessimistic	27.638	40.653	32.362	36.299	40.104	43.277	45.953

Figure 4.1: Revenue scenarios for Facebook in digital advertising.

All else equal, Figure 4.1 illustrates three scenarios for Facebook's revenue potential in the digital advertising industry. It is worth noticing that this is not an attempt to forecast revenues, rather it should be seen as a way to determine the trends and levels as such. The *"realistic"* scenario stipulates a path where Facebook will grow its digital advertising revenues from 40,6 billion as recorded for 2017 to 93,9 billion in 2022. This scenario builds on the assumption that the company retains its position in the industry to have a global market share of 23,5%. The analysis of Facebook's competitive environment largely supports this assumption. It revealed that the competitive intensity of the industry is medium, hence the likelihood that Facebook can defend

its market share seems obvious. Most notably, the weak competitive force exerted by the threat of new entrants, as well as the modest force stemming from the rivalry among existing firms supports the notion that Facebook is in a good position to retain its position in the industry. By virtue of a well-established brand, the high levels of capital and R&D expenditure needed to compete in the industry, and various options for retaliation at its disposal, Facebook enjoys a strong competitive position as industry incumbent. The large differences in size between competitors, as well as high industry growth, fortifies the argument creating a picture where it seems likely that Facebook can defend its market share. Nonetheless, it remains both opportunities and threats that gives rise to an *"optimistic"* and a *"pessimistic"* scenario, respectively.

In the pessimistic scenario, revenues are affected by a negative shock in the short run, before it stabilises at a lower level and then grows together with the market until 2022. The scenario is based on a situation where Facebook fails to adapt to new data protection laws, and a new social paradigm negatively affects Facebook's brand reputation. We will not take it on us to attempt to quantify the effect of such developments on revenues precisely, however, we will argue that they may lead to a permanent decrease in the level of Facebook's market share in digital advertising. The pessimistic scenario illustrates how important threats in the strategic environment may negatively affect Facebook's revenue growth. In addition, imminent litigation from governments around the globe can potentially have an even greater impact on revenues. It was shown in the strategic analysis that the recent scandal including Cambridge Analytica has already made governments grow impatient, and some users are altering their preferences for sharing personal data with the company. In a situation where a larger portion of Facebook users follow suit, it would quickly impact the quality of the company's targeted advertising services, which certainly will translate into a reduction in revenue. Although not necessarily a matter of life and death for the company as a whole, the development would severely hurt its chances of delivering on the growth expectations implied by the market.

In the optimistic scenario, revenues take a more expansive trajectory reaching about 140 billion by 2022. The premise for such a development is that Facebook manages to increase its global market share to equal the industry leader Google. At 35%, the optimistic scenario assumes a significant increase in Facebook's market share, albeit such advances are not completely fictional.

It seems apparent that the key to achieve, or even surpass, such levels of revenue is entering the Chinese market, and successfully diversify business to include a profitable virtual reality business.

The Chinese market

The digital advertising market in China have the possibility to significantly impact Facebook's revenue growth. The strategic analysis found no immediate sign of regulatory appeasement from the Chinese government, however, this is not due to a lack of effort on the side of Facebook. A charm offensive over several years from CEO Mark Zuckerberg has made the way into the Chinese market shorter. The motivation behind the campaign seems obvious when looking at the potential impact of such a fast-growing market. At a CAGR of 15%, the expected growth rate of the Chinese digital advertising market is expected to significantly outpace global growth. As a result, China is expected to become the second largest market in the world by 2022, marginally smaller than that of the US. If Facebook is able to lay claim to a market share growing from 5% in 2018 to 25% in 2022, it stands the prospects of generating revenues in the region of 30 billion a year in China (see Figure 4.2).

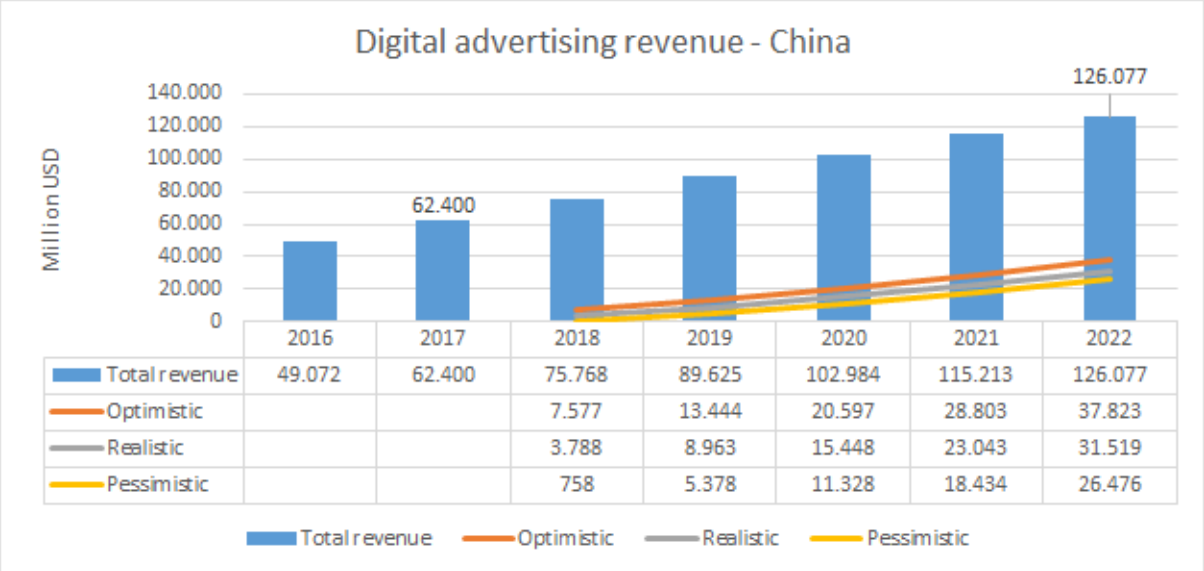


Figure 4.2: Revenue scenarios for Facebook in the Chinese digital advertising market.

Virtual reality

Similarly, the virtual reality market displays evidence of having a huge potential upside that could greatly impact Facebook's revenue growth in the future. Although there is severe uncertainty

associated with expected revenues when considering a product that is in the early stages of the life cycle, the forecasts for virtual and augmented reality looks highly promising (see Figure 4.3). The scenarios presented have been developed along two dimensions. Firstly, the degree of adoption of these new technologies, and secondly, Oculus' future market share. The optimistic and pessimistic scenarios assume that the adoption of these new technologies is going to be high or low, respectively. In the realistic scenario, we assume an adoption rate as seen in today's market. Arguably, this is a strict assumption as the product is expected to enter the high growth period of its life cycle over the next two years. However, we find it reasonable to curb our enthusiasm as Oculus' profitability remains both unproven and uncertain. Furthermore, the optimistic and pessimistic scenarios assume changes to Oculus' current market share to 40% and 5% globally. The realistic scenario assumes a similar market share as today at 20%. The analysis finds that Oculus is well-positioned to extract tens of billions in revenue over the coming years, although the explosive growth and infancy of the industry makes for high uncertainty.

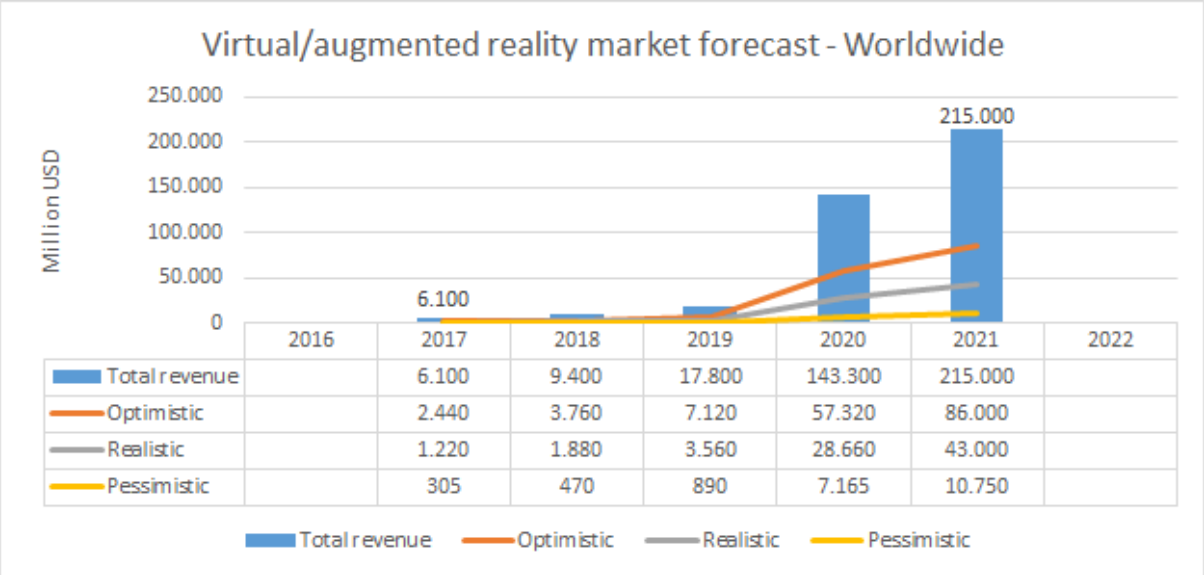


Figure 4.3: Revenue scenarios for Facebook in VR/AR market.

In conclusion, there are good prospects for Facebook to retain a high level of revenue growth over the next five years. These prospects are driven mainly by the digital advertising industry where revenues are expected to grow at a CAGR of 10% until 2022. As Facebook currently enjoys a strong position in the market it is argued that realistically the company will grow its revenues with the market to become about 94 billion USD annually in 2022. The upside-, and downside scenarios

put revenues at 46 billion and 140 billion USD, respectively, depending on the handling of the perception crisis and the company's ability to increase global market share. In addition, the unexplored market in China, as well as the high growth virtual reality market has the possibility to generate billions of dollars in revenues annually within the next five years. However, such revenue streams are associated with high uncertainty. China, which is expected to become the second largest digital advertising market, is found to have a revenue potential in the range of 26-38 billion USD in 2022. The virtual reality market is unproven, but the upside remains big as revenues can potentially be in the range of 10-80 billion USD annually by 2022.

4.1.2 Net profit margin

In addition to top-line growth in revenues, bottom-line growth in net income will be pivotal for Facebook to meet the growth expectations in FCFF implied by the market. The two growth measures are connected, and this relationship can be explored by investigating the company's net profit margin which indicates its ability to translate revenue into net income. As seen in the strategic analysis Facebook have been able to significantly improve its margins to become highly profitable over the last couple of years. However, this comes with the implication that further improvements in the future will be very difficult to achieve. Considering the challenges of treating future margins the discussion is assisted by developing three scenarios that outline a broad development path for Facebook's bottom-line.

In the realistic scenario, we assume that Facebook will be unable to maintain its exceptional net profit margin of 39,2%, which implies that net income will grow at a lower trajectory than revenues. Figure 4.4 displays this scenario, which is backed by the strategic analysis of Facebook. As the analysis revealed there are several factors threatening to put pressure on margins. Most notably, changes to the regulatory environment are expected to put an upward pressure on Facebook's costs in two ways. Firstly, the rules for handling personal information on behalf of users is bound to change in a way that will incur more expenses. The GDPR entering into force in the EU is likely to become the blueprint for reforming data protection laws across the globe, and thus increase the leverage of social media users relative to Facebook. The company is currently developing a range of new processes and services with the purpose of attending to the rights of users established by such rules. Adhering to these will cost money without bringing in any incremental revenue. Secondly, the period of unchecked information sharing is coming to an

end, and it is certain that in order to rebuild and maintain trust with governments, as well as the general public, Facebook must start to police its platform to face the growing challenge of misuse. Essentially, this will make the company look more like traditional publishers, and keeping track with the content posted by users will mean that the level of expenditures will increase. The picture is not just dark, however, and in spite of these developments, we expect Facebook to remain among the most profitable software Internet companies.

Facebook's unique position in the market leads us to believe that the company will remain substantially more profitable than the industry average. For the realistic scenario, it is assumed that the company can deliver a net profit margin averaging 36% in the next five years. In comparison, New York University Stern School of Business estimates that for software Internet companies in the US, the average net profit margin is 23,8% currently. Figure 4.4 shows the relationship between revenues and net income in the realistic scenario.

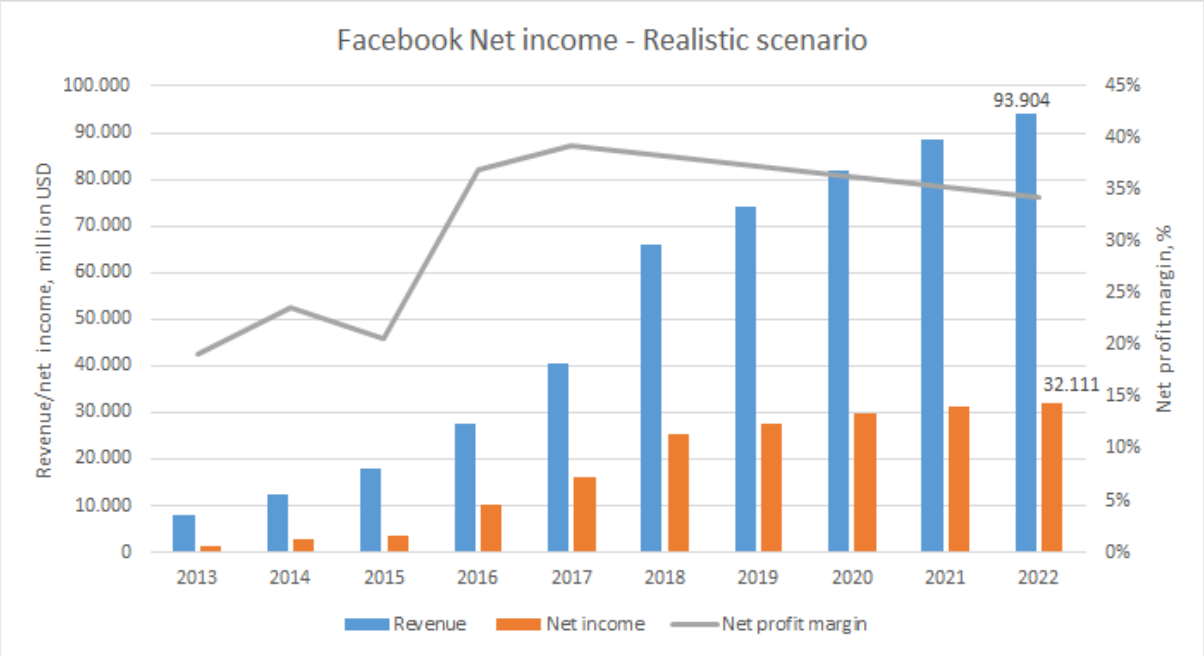


Figure 4.4: Realistic net income scenario for Facebook.

The most important takeaway is that growth projections in net income are sensitive to the assumption concerning margins, and the negative development erodes most of the effect of growing revenues on net income. As a result, the decrease in net margin negatively impacts the

company's ability to meet the growth implied by the market. In comparison, the optimistic scenario where the net profit margin is assumed to stay at 39% displays higher growth in net income, which is growing proportionally to revenues. Conversely, the pessimistic scenario assumes that Facebook's margins converge to the industry average at 23,8% over the next five years. At a considerably lower level than both the realistic and optimistic scenarios, a convergence to the industry average would imply a fall in net income for Facebook in the period 2018-2022. In conclusion, the level of net income is expected to be in the range of 22-36 billion USD. These results are not accurate to a degree where they provide the basis for informed decision-making, however, they give a good indication of the range and level of growth potential.

4.1.3 Summary of Facebook discussion

The discussion stipulating scenarios for Facebook's revenues, net margin, and their impact on net income suggests that the company is in a strong position to deliver on the growth rate implied by the current stock price. First of all, revenues in excess of 90 billion and net income above 30 billion adds up to the growth trajectory in FCFF suggested by DCF analysis above. Secondly, when considering the implied growth rate of 6,97% in conjunction with the strategic environment in general it seems underwhelming. As a result, the analysis finds evidence to support the idea that the Facebook stock is undervalued.

The notion that the Facebook stock is undervalued finds its strongest support in the fact that the trajectory for revenue and net income is ahead of that of FCFF in the DCF model. The model indicates that FCFF is expected to be just below 25 billion USD in 2022, while the discussion above revealed that it is realistic that net income for the same year will be in the region of 22-36 billion. As supported by the strategic environment, and all else equal, such performance would make the implied growth rate attainable. Large changes to depreciation and amortisation, interest payments, long-term investments, or working capital may distort the picture, however, we find no evidence in the strategic analysis indicating that such extraordinary changes are imminent.

4.2 Amazon discussion

In 2017, Amazon experienced a FCFF of 6,48 billion USD. Based on the reverse-engineered DCF calculations, the market's pricing of the stock implies that the FCFF will grow at a rate of 40,95% for the next ten years, reaching 200,572 billion USD in 2027. The following discussion will focus

on assessing whether it is realistic to achieve growth numbers as implied by the stock price as of 31. January 2018.

4.3.1 Revenue growth

As with Facebook, top-line and profit margin growth is essential for value creation and is likely to be of importance for delivering consistently high growth rates in FCFF. Considering revenue, Amazon.com represents the, by far, biggest business unit of Amazon with 84% (see Figure 4.5). It is, therefore, reasonable to assume that it has the highest potential to generate FCFF growth. On the other hand, AWS with 9% of revenue contributes the most to the company's positive profit margin and therefore needs attention too. Concludingly, assessing the growth potential of Amazon.com and Amazon Web Services will be of great importance in order to understand whether Amazon can grow at the rate implied by current stock price. Also, a brief discussion around the growth potential for Whole Foods and Amazon Prime will be made, due to their future potential discussed in the strategic analysis.

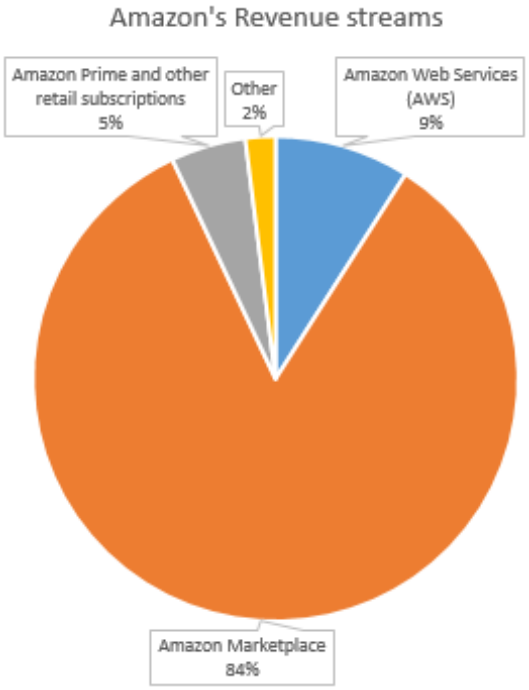


Figure 4.5: Amazon's revenue streams (Self-made based on Dignan, 2018).

Growth potential of Amazon.com

As presented in the strategic analysis, the internet usage is expected to increase for the next years. Estimations say there will be 700 million more internet users in 2021. A direct consequence of more people being online is an increased number of potential customers for e-commerce retailers like Amazon. Combined with growing technological consumer behaviour, the increasing amount of internet users is a direct consequence of the e-commerce market expecting to grow significantly in coming years. Total e-commerce sales reached 2304 billion USD in 2017, and in 2021 the same number is expected to be 4878 billion USD. In the US, the retail e-commerce market accounted for 452,76 billion USD in 2017. By 2021 it is expected to grow 72%, reaching 779,53 billion USD. Additionally, Amazon's market share is expected to improve from 37% to around 50% of total US e-commerce in 2021 (Krauth, 2017). Assuming that Amazon either 1) keeps their market share, 2) wins market shares or 3) loses market shares, the markets growth potential still is impressively high. Also, Amazon's unfulfilled potential in Asia makes room for even more growth optimism.

Of Amazon's 177,9 billion revenue, about 151,41 billion stems from the e-commerce business, while the rest stems from AWS, Amazon Prime. Based on scenarios we have calculated three possible outcomes for Amazon's e-commerce revenue by 2027. The realistic scenario takes a 45% market share into consideration, slightly above today's market share. This indicates that Amazon manages to grow with the market, slightly winning market shares. The optimistic scenario takes a 55% market share into consideration and assumes that Amazon manages to use its brand reputation to win market shares. In order to achieve this, they will have to continue being market leaders when it comes to order fulfilment and shipping times. Another factor possibly increasing Amazon.com market share is the number of Prime users. If Amazon Prime continue to grow their users, it will directly affect the number of sales through Amazon.com and help to gain the company's market share to 55%. Also, an improved trade agreement with Great Britain due to the Brexit and increased market shares in China could help increase the revenue. If Amazon manages to win market shares in China from Alibaba and JD.com their revenue could potentially increase drastically. As of today, Amazon's market share in China is 1,3%, mostly caused by the fact that the Chinese competitors offset most of Amazon's competitive advantages and that they cannot offer Prime due to Chinese regulations. As a result of the lack of competitive advantages compared

to their Chinese competitors, we do not find it very likely that Amazon can increase their market share in China with significant numbers. Therefore, the optimistic scenario is set to 55%.

Furthermore, a reduction in Prime users could negatively affect Amazon's market share, and this is among the factors displayed with the pessimistic scenario. The pessimistic scenario takes a 35% market share into consideration. Also, Walmart's strive to succeed online could affect Amazon's market share. If Wal-Mart manages to win market shares, it would directly harm Amazon's ability to gain market shares. Although, Walmart does not have the same internal synergies created through Amazon.com, Prime and AWS. Nor have they the same brand reputation, and it is less likely they will win significant market shares from Amazon. Regardless, this factor is also taken into consideration in the pessimistic scenario. The results are presented in Figure 4.6.

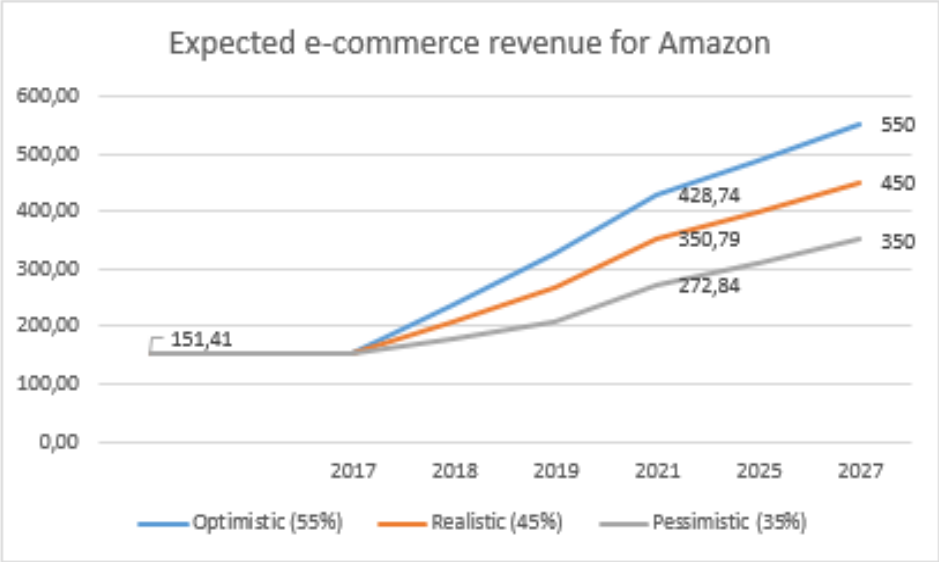


Figure 4.6: Revenue scenarios for Amazon in the e-commerce market.

Today, about 33% of Amazon's revenue comes from international sales, but due to expected growth in international sales the number is expected to increase to 36% by the end of 2018 (Keyes, 2018). In other words, the market expects a higher growth in international than domestic sales, not exclusively positive for Amazon due to their weak international profit margin. This will be further discussed under net income. As seen in Table 4.6, all of the scenarios represent an impressive growth in e-commerce revenue. The three scenarios show significant e-commerce revenue growth from around 200 to 400 billion USD by 2027.

Furthermore, the 2017 acquisition of Whole Foods could add some extra upside potential for Amazon. Whole Foods is expected to strengthen Amazon's internal synergies, supplying Amazon.com with groceries, but also serve as an independent physical business unit. For years, the company had an impressive growth, but since 2016 the company has struggled to grow (Appendix C).

Whole Foods will most likely benefit from being part of Amazon, as they can utilize Amazon's competitive advantages when it comes to logistics and the internal synergies created through Amazon.com, Amazon Web Services and Amazon Prime. Our opinion is that it will boost sales and help Whole Foods start growing again. As Whole Foods will be operating in several markets, both online and physical, it is hard to estimate a specific growth rate of the overall market. What we can do is to forecast Whole Foods growth rate for the next 10 years. As displayed in Figure 4.7, a three-scenario test is conducted, showing scenarios from 2 to 6% annual growth. The result is an added 19-29 billion USD in Revenues. The next part of the discussion will look into the growth potential of Amazon Web Services.

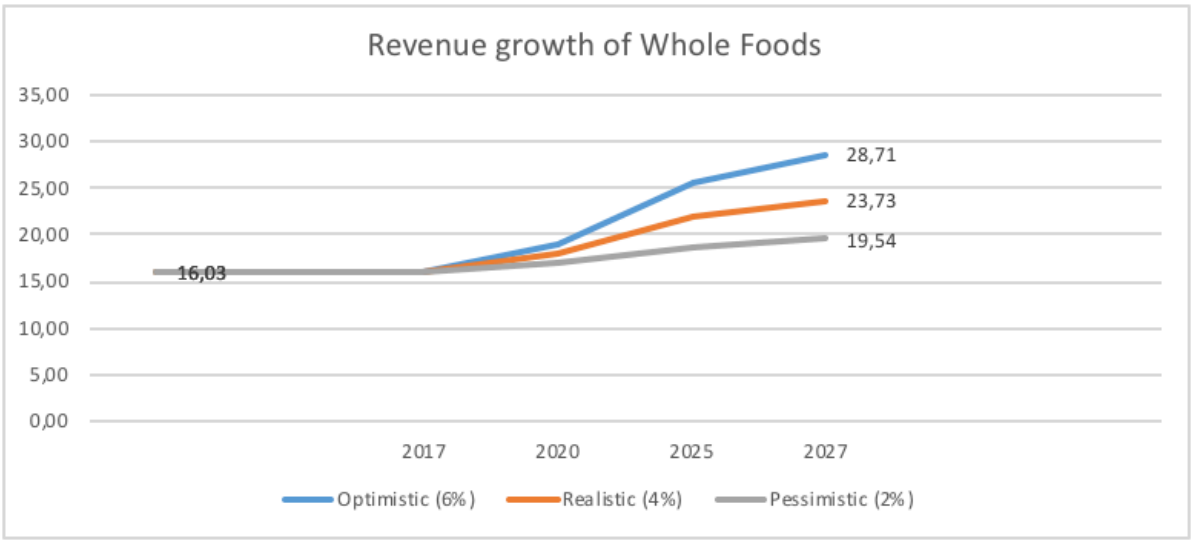


Figure 4.7: Revenue scenarios for Amazon from Whole Foods business unit.

Growth potential of Amazon Web Services (AWS)

AWS, the number one market leader in cloud computing, serves as Amazon's cash cow. The business unit accounts for only 10% of total revenue, but its high margins make it the company's profit engine. In 2017, AWS delivered a revenue of 17,46 billion USD and a margin close to 25%. Amazon's total net income for 2017 was 3 billion USD, proving that substantially all their profit came from AWS.

AWS holds a 30% market share within the SaaS (Software as a Service) market, which is expected to grow more than 15% annually within the next years. A three-way scenario test presents the possible revenue AWS can generate if they 1) Increase their market share 2) keep their market share or 3) decrease their market share. The scenario test uses the assumption that the market will continue to grow 15% annually all the way to 2022, before more moderately growing 7,5% until 2027. This is done to graphically display the trend in the market and is displayed in Figure 4.8.

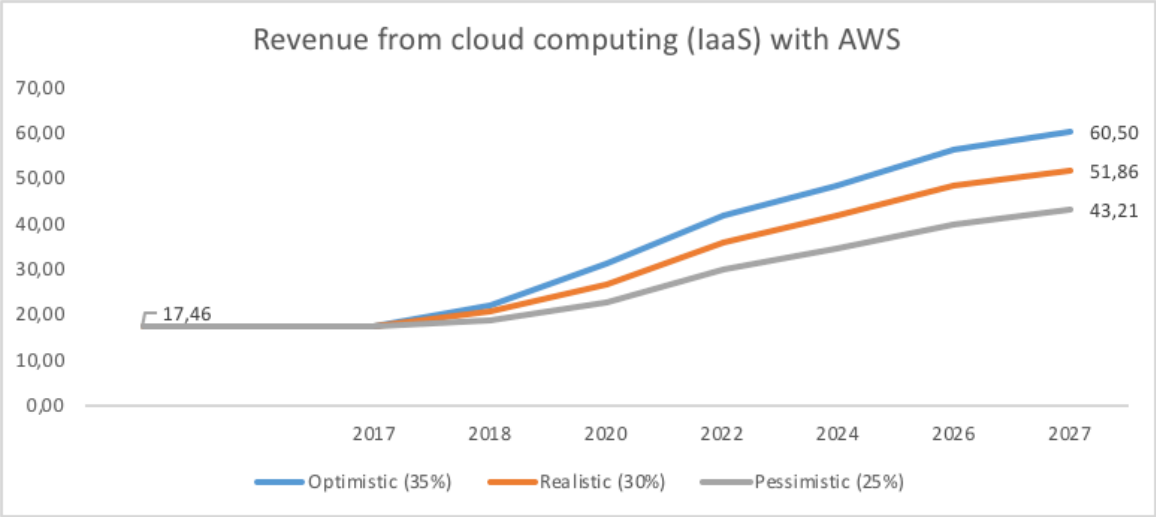


Figure 4.8: Revenue scenarios for Amazon from cloud computing.

Being the number one market leader, generating a lot of profit to Amazon, it is reasonable to assume Amazon will continue to invest in the division. The investments will be done in order to keep or increase their market share within SaaS, but also to make sure Amazon.com runs on the best hardware and software possible. The realistic scenario represents such a plot. The optimistic scenario is based on AWS being able to gain from internal synergies with Prime and Amazon.com,

hence increasing their market share by 5%. The pessimistic scenario represents a situation where Microsoft and/or Google manages to win market shares from AWS, reducing Amazon's market share to 25%.

As can be seen, all three scenarios result in significant revenue growth, from today's 17,46 billion USD to somewhere between 43 and 60 billion USD. Given AWS strong profit margin, this could potentially generate a lot of FCFF. This will be further discussed after assessing the growth potential of Amazon Prime and Whole Foods.

Growth potential of Amazon Prime

The number of Amazon Prime subscribers reached 100 million in 2018. Furthermore, the yearly subscription price increased from 99 USD to 119 USD. By 2020 Prime is expected to potentially add 18 billion USD to Amazon's top line (TrefisTeam, 2018). Given the assumption that the recent price increase stays constant throughout 2020, this would imply gaining another 50 million prime users by the end of 2020. Further revenue growth of Amazon Prime is very difficult to assess, but as pinpointed in the strategic analysis; it is the internal synergies that serve as the strategic advantage for Amazon. The fact that Amazon Prime is expected to further increase their number of subscribers, increases the possibility of Amazon.com to win market shares.

Amazon Prime offers both music and video streaming among other services, but one area where they invest a lot of time and effort, is the Game Video Content (GVC) market. As of today, Amazon Prime accounts for 37% of the revenue in the 4,6 Billion USD GVC market. Further, the market is expected to grow more than 20% annually the next 3-4 years. Given the expected market growth, three possible scenarios are presented, in which Amazon either 1) improve their revenue share, 2) slightly loses market share, or 3) significantly loses market share. As can be seen, all of the presented scenarios represent significant growth, but compared to the revenues of Amazon's other business units, the level of these revenues are rather modest.

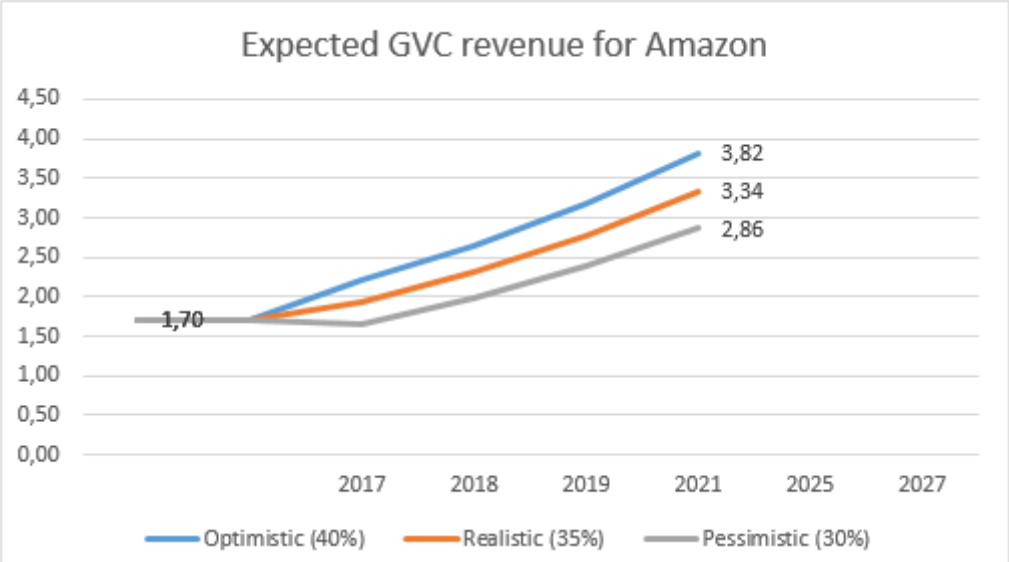


Figure 4.9: Revenue scenarios for Amazon from GVC business unit.

One point that also needs mentioning when assessing the revenue potential of Amazon, is the fact that they could disrupt other business areas in the future. The company's history proves they are willing to take opportunities as they arrive, and many things point to the fact that Amazon is not done expanding their business to other areas. Obviously, assessing such growth is beyond our abilities.

4.3.2 Margins

As discussed above, there is no doubt Amazon will increase their revenue the next ten years. Both Amazon.com and AWS are market leaders in rapidly growing markets, and together with Amazon Prime, they complete each other in a very beneficial way. Figure 4.10 displays a summary of the optimistic, realistic and pessimistic scenarios as discussed previously.

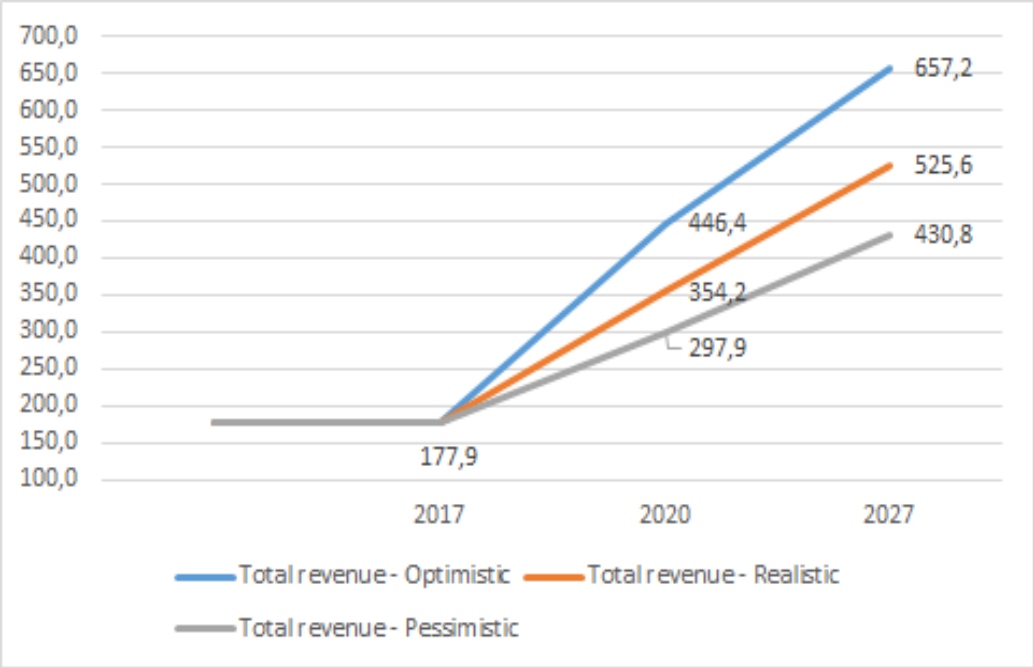


Figure 4.10: Total revenue scenarios for Amazon.

Although all three revenue growth scenarios seem rather impressive, they do not necessarily translate into FCFF growth. As of today, Amazon's biggest problem is lack of profits from their core business, and the only part of Amazon making profits is AWS, accounting for less than 10% of the revenue. What's more, it seems Amazons liabilities grows somewhat proportionally with the company's revenue, and that the company might need to keep investing heavily to grow further. As interest rates keeps rising, this could put further pressure on Amazon's alarmingly low margins. Amazon's 3,033 Billion USD net income implies a margin of 1,7%. If Amazon does not manage to increase their margin, they would require a revenue of 10 000 billion USD in order to deliver a net income close to the implied FCFF of 175 billion USD. This falls way beyond the realistic scenario and leaves one possibility for delivering on the implied growth; improved margins. Table 4.1 presents the margin necessary to deliver a profit equal to the implied FCFF for the three scenarios, as well as the revenue necessary for today's margin.

Scenario	Optimistic	Realistic	Pessimistic
Revenue ($)	657 200 000 000	525 600 000 000	430 800 000 000
Profit ($)	175 318 133 557	175 318 133 557	175 318 133 557
Margin (%)	**26,68**	**33,36**	**40,70**

Table 4.1: Required margin based on revenue.

In order to come somewhat close to the implied FCFF of 175 billion USD in 2027, Amazon's margin would have to be between 26,7 and 40,7% for the three scenarios respectively. As of today, AWS delivers a margin around 25%. Amazon.com, on the other hand, struggles with a negative margin of 0,14%. The negative margin is caused by a margin of -5,64% on goods shipped internationally, while the North-American market delivers a margin of 2,67%, which is far from sufficient. Based on 61 different e-commerce retailers, an average margin of 3,72 % was found (Damodaran, 2018). Accordingly, we find it very unlikely that Amazon possibly can achieve margins close to 26,68%.

4.3.3 Summary of Amazon Discussion

In summary, we do not find evidence to support the notion that Amazon can deliver on the growth rate implied by its stock price as of 31. January 2018. Firstly, the projected revenues are far from what is implied in the FCFF growth, especially due to the company's low margin and the inferior potential of increasing them substantially. Moreover, the implied growth rate seems remarkably high compared to the strategic environment. Subsequently, the analysis supports the idea of the Amazon stock being overvalued.

The impression of Amazon being overvalued finds support in the enormous FCFF implied in 2027. Amazon will not be able to increase their margins to the required level to deliver a FCFF of 175 Billion USD in 2027. A more realistic scenario would be for Amazon to achieve margins close to, or maybe slightly above, the industry average of 3,72%, far from the 26,68-40,70% they need in order to deliver the growth implied by the stock price. Concludingly, we find Amazon overpriced. Similar to Facebook, significant changes in Amazon's depreciation, amortization, interest payments, long-term investments, or working capital may distort the picture. Nonetheless, we find no evidence in the strategic analysis indicating that such changes.

5.0 Conclusion

The reverse-engineered DCF model indicated that as of January 31st, 2018, the stock market implied widely different levels of growth in FCFF for the FAANG companies, illustrated in Figure 5.1. Apple and Google (Alphabet) was found to have the lowest implied growth rates with the stock market expecting annual growth in FCFF of 5,92% and 6,09%, respectively, over the next ten years. Facebook was found to have a slightly higher implied growth rate of 6,97%, while Amazon had by far the highest growth implied in its stock price at 39,07%. Due to its negative FCFF as of January 31st, 2018, and unwieldy sensitivity to the assumptions imposed by us as researchers, Netflix was excluded from the analysis. The exclusion of Netflix was found to be unfortunate as it showed evidence of being priced with considerable growth over the coming years, however, the results remained invalid and hence the exclusion necessary.

Implied growth rates			
Facebook	Amazon	Apple	Google
6,97 %	39,07 %	5,92 %	6,09 %

Table 5.1: Implied growth rates derived from the reverse-engineered DCF model.

Subsequently, the strategic analysis of Facebook revealed that the company finds itself in a strong strategic position. Firstly, when considering the internal strategic factors, the company possesses sustainable competitive advantages by virtue of having the world's largest social media user database, and the world's fourth most valuable brand. Furthermore, its strong and sustainable financial performance, most notably as a result of exceptional margins not seen by any comparable firms, was found to provide the company with a temporary competitive advantage. These competencies pose as strengths that will enable Facebook to attain growth in the future. However, the analysis also found an internal strategic factor posing as weakness in the company's strategic position. Substantially, all of Facebook's revenue is earned in the same market, i.e. the digital advertising market, which exposes the company one-sidedly to conditions in this market. Despite the low degree of diversification of its business, Facebook was found to be in a strong strategic position when considering the internal factors of its environment. A similar positive picture was found when looking at the external factors.

The analysis of the external factors affecting Facebook's strategic position revealed political and socio-cultural threats, economic opportunities, and a modest competitive intensity surrounding the company. In terms of the political threats, the apparent changes in data protection laws in the EU with the implementation of the GDPR, and the proposed tax on revenue of Internet companies was found to be the most pressing challenges for Facebook. The GDPR stand to become the blueprint for reforming data protections laws across the world and seen together with the recent Cambridge Analytica scandal and Russian meddling in the US election speculations it is expected to influence Facebook greatly going forward. These disputes have become inflamed to the point that we argue that it will affect the company's margins as a result of increased red tape and oversight by governments across the globe. On a more positive note, the opportunities of the untapped Chinese market for digital advertisement, as well as the undeveloped virtual reality market stands to become important revenue streams for Facebook. Seen in conjunction with the modest competitive intensity found for the social media and advertising industries, the company stands to become one of the undisputed winners of the high expected growth in coming years. In summary, the internal and external factors indicate that although there are certain weaknesses and threats to the strategic position of Facebook they are exceeded by the strengths and opportunities which are more predominant.

This forms the basis for our conclusion that Facebook's implied growth rate of FCFF by 6,97% annually is underwhelming compared to the potential of the business. The implication being that we find evidence that Facebook is undervalued. Facebook had a FCFF of 17,5 billion USD in 2017, hence the market expects that the figure could possibly reach 46,2 billion USD in 2027. The digital advertising industry is expected to grow at a CAGR of 10% the next years, reaching 400 billion USD in 2022. Today, Facebook holds a market share of 23,5%, and the strategic analysis of Facebook's competitive environment largely supports the assumption that the company can defend its market share and grow its revenues to about 94 billion USD annually in 2022. In addition, the unexplored market in China, as well as the high growth virtual reality market has the possibility to generate revenues in the future. Facebook's unique position in the market leads us to believe that the company can keep delivering a profit margin of 36%, and by that remain substantially more profitable than the industry average of 23,8%. Considering the implied growth rate of 6,97% in conjunction with the strategic environment in general, the growth rate seems

underwhelming. Furthermore, a potential net income above 30 billion USD, is significantly ahead of that of FCFF implied in the DCF model. Hence, our analysis finds evidence to support the notion that the Facebook stock is undervalued.

When it comes to Amazon, they also find themselves in a strong strategic position. Regarding internal factors, they possess several sustainable competitive advantages. The unique synergies between Amazon.com, Amazon Web Services and Amazon Prime serves as one of the most important factors for Amazon's dominance in the e-commerce market. Further, their superior logistics and many distribution centres affect the customer's perception of Amazon and is a direct cause of Amazon being the second most reputable brand in the US. These competencies pose sustainable competitive advantages and will enable Amazon to grow in the future. On the contrary, Amazon is struggling with low margins and rapidly increasing debt, which could directly harm Amazon's ability to grow. Also, the fact that the company might soon grow too big and suffer from diseconomies of scale could potentially harm future growth. Despite the low margins and growing debt, Amazon is considered to be in a strong strategic position regarding internal factors. With regards to the external factors, a similarly positive picture was found.

The external factors affecting Amazon offers both opportunities and threats. First and foremost, sociocultural and technological factors offer great opportunities for Amazon. The increasing amount of internet users and expected e-commerce growth serves as the single most important factors in order for Amazon to grow. In conjunction, technological development lets Amazon explore new ways of reaching out and sell products to their customers, for instance through Amazon Alexa. Furthermore, increased physical presence through the pilot project Amazon Go and their 2017 acquisition of Whole Foods opens up an entirely new market for the company to exploit. On the contrary, political factors could harm Amazon's abilities to grow. First, the Trump administration's trade protectionism serves as a direct threat to Amazon, most importantly, as it could complicate import from China. Moreover, increased internet taxes both in the US, as well as in the EU poses as a direct threat to Amazon's alarmingly low margins. Also, the level of rivalry and power of buyers in the retail industry challenges the company and greatly affects the external position of Amazon. In summary, the internal and external factors indicate that Amazon will be able to grow significantly in the coming years. However, the company's internal weaknesses and external threats will curb Amazon's ability to growth to some extent. As a result, it is expected

that the company's low profit margin will remain so, thus making it difficult to grow the FCFF as abruptly as implied by the stock price.

To conclude, Amazon's implied growth rate of FCFF by 39,07% seems overwhelming compared to the potential of the business, and we consider Amazon to be overvalued. Amazon's FCFF was 6,48 billion USD in 2017, and the market expects it to reach 175 billion USD in 2027. Our analysis has revealed a potential of increasing e-commerce revenue from 151,41 to 550 billion USD in 2027. Although the growth is impressive, looking at the company's 1,7% margin it is not close to justify the implied FCFF of 175 billion USD. Furthermore, the growth potential of Amazon Web Services and Amazon prime needs mentioning. Although the business units can expect some years with great growth numbers, they are also far from justifying the implied FCFF. Hence, our analysis finds evidence to support the notion that the Amazon stock is overvalued.

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7.0 Appendices

Appendix A

Implied growth rate of Facebook			
Free Cash Flow	17 480 000 000 *a)*	**(E)10 year growth**	6,97 % *c)*
Shares Outstanding	2 395 922 000 *a)*	**WACC**	9,31 % *b)*
Net Debt	-41 711 000 000 *a)*	**Terminal growth + inflation**	4,00 % *d)*

Year 2018+	FV	DF	DCF
1	18 698 744 396	0,91	17 106 591 213
2	20 002 462 357	0,84	16 741 159 206
3	21 397 078 427	0,77	16 383 533 580
4	22 888 930 225	0,70	16 033 547 573
5	24 484 797 241	0,64	15 691 037 987
6	26 191 931 648	0,59	15 355 845 112
7	28 018 091 255	0,54	15 027 812 646
8	29 971 574 762	0,49	14 706 787 629
9	32 061 259 475	0,45	14 392 620 368
10	34 296 641 644	0,41	14 085 164 366

Sum of DCF	155 524 099 680
Terminal Value - Perpetual growth	265 394 786 194
Total Equity Value	462 629 885 874
Reverse DCF price	193,09
Market price	193,09 *e)*

a) From annual report 2017
b) Calculated, see appendix B
c) Reverse-estimated through goal seek
d) Target inflation rate of 2% + long term GDP growth rate of 2%
e) Closing price 31.01.2018

Implied growth rate of Amazon			
Free Cash Flow	6 480 000 000 *a)*	**(E)10 year growth**	39,07 % *c)*
Shares Outstanding	484 107 000 *a)*	**WACC**	13,94 % *b)*
Net Debt	13 161 000 000 *a)*	**Terminal growth + inflation**	4,00 % *d)*

Year 2018+	FV	DF	DCF
1	9 011 564 368	0,88	7 908 966 740
2	12 532 143 882	0,77	9 653 048 594
3	17 428 120 565	0,68	11 781 734 608
4	24 236 825 661	0,59	14 379 837 523
5	33 705 511 500	0,52	17 550 872 946
6	46 873 362 104	0,46	21 421 183 701
7	65 185 543 169	0,40	26 144 973 674
8	90 651 808 352	0,35	31 910 451 728
9	126 067 068 832	0,31	38 947 330 457
10	175 318 133 557	0,27	47 535 978 576

Sum of DCF	227 234 378 547
Terminal Value - Perpetual growth	478 175 838 638
Total Equity Value	692 249 217 185
Reverse DCF price	1429,95
Market price	1429,95 *e)*

a) From annual report 2017
b) Calculated, see appendix B
c) Reverse-estimated through goal seek
d) Target inflation rate of 2% + long term GDP growth rate of 2%
e) Closing price 31.01.2018

Implied growth rate of Apple			
Free Cash Flow	51 150 000 000 *a)*	**(E)10 year growth**	5,92 % *c)*
Shares Outstanding	5 074 013 000 *a)*	**WACC**	10,97 % *b)*
Net Debt	45 247 000 000 *a)*	**Terminal growth + inflation**	4,00 % *d)*

Year 2018+	FV	DF	DCF
1	54 177 439 448	0,90	48 820 412 887
2	57 384 065 398	0,81	46 596 925 015
3	60 780 483 448	0,73	44 474 704 174
4	64 377 926 913	0,66	42 449 138 237
5	68 188 293 980	0,59	40 515 825 131
6	72 224 187 060	0,54	38 670 563 272
7	76 498 954 469	0,48	36 909 342 435
8	81 026 734 576	0,43	35 228 335 036
9	85 822 502 564	0,39	33 623 887 816
10	90 902 119 959	0,35	32 092 513 901

Sum of DCF	399 381 647 905
Terminal Value - Perpetual growth	460 244 743 638
Total Equity Value	814 379 391 543
Reverse DCF price	160,50
Market price	160,50 *e)*

a) From annual report 2017
b) Calculated, see appendix B
c) Reverse-estimated through goal seek
d) Target inflation rate of 2% + long term GDP growth rate of 2%
e) Closing price 31.01.2018

Implied growth rate of Google (Alphabet)			
Free Cash Flow	23 910 000 000 *a)*	**(E)10 year growth**	6,09 % *c)*
Shares Outstanding	349 844 000 *a)*	**WACC**	13,66 % *b)*
Net Debt	-97 982 000 000 *a)*	**Terminal growth + inflation**	4,00 % *d)*

Year 2018+	FV	DF	DCF
1	25 365 342 983	0,88	22 316 497 870
2	26 909 269 119	0,77	20 829 196 035
3	28 547 170 247	0,68	19 441 016 685
4	30 284 766 395	0,60	18 145 353 720
5	32 128 125 753	0,53	16 936 041 307
6	34 083 685 869	0,46	15 807 324 540
7	36 158 276 126	0,41	14 753 832 055
8	38 359 141 598	0,36	13 770 550 466
9	40 693 968 346	0,32	12 852 800 508
10	43 170 910 265	0,28	11 996 214 770

Sum of DCF	166 848 827 957
Terminal Value - Perpetual growth	124 160 717 575
Total Equity Value	388 991 545 532
Reverse DCF price	1111,90
Market price	1111,90 *e)*

a) From annual report 2017
b) Calculated, see appendix B
c) Reverse-estimated through goal seek
d) Target inflation rate of 2% + long term GDP growth rate of 2%
e) Closing price 31.01.2018

Appendix B

Estimation of WACC

$$WACC = \frac{NIBD}{NIBD+Equity} * rd * (1\text{-}tax) + \frac{Equity}{NIBD+Equity} * re$$

	Facebook	Amazon	Apple	Google (Alphabet)	Source:
NIBD (Billion USD)	-41,71	13,16	45,25	-97,98	* Annual Reports
Equity (Billion USD)	462,629	692,249	814,379	388,992	* Annual Reports
Tax	27 %	27 %	27 %	27 %	
Rd	0,00 %	4,32 %	2,47 %	0,00 %	* Annual Reports
Re	0,085	0,141	0,115	0,102	* See calculations underneath
WACC	**9,31 %**	**13,94 %**	**10,97 %**	**13,66 %**	

Estimation of Re (Required return on equity)

	Facebook	Amazon	Apple	Google (Alphabet)	Source:
Rf	2,79 %	2,79 %	2,79 %	2,79 %	(U.S. Department of the Treasury, 2018)
Be	0,81	1,62	1,24	1,06	(Thomson One, 2018)
Rm	9,80 %	9,80 %	9,80 %	9,80 %	(Santoli, M. 2017)
MRP	7,01 %	7,01 %	7,01 %	7,01 %	* Rm-Rf
Re	**8,47 %**	**14,15 %**	**11,48 %**	**10,22 %**	

Appendix C

Revenue and growth for Whole Foods