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NÁZEV BAKALÁŘSKÉ PRÁCE/TITLE OF THESIS
Start-ups' IPOs: When is the right time and what may go wrong

TERMÍN UKONČENÍ STUDIA A OBHAJOBA (MĚSÍC/ROK)
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Rád bych tímto poděkoval vedoucímu bakalářské práce za metodické vedení a odborné konzultace, které mi poskytl při zpracování mé bakalářské práce.

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SOUHRN

1. Cíl práce:

Cílem této práce bylo vytvořit sadu instrukcí a zásad, které mohou pomoci start-upům a jejich zakladatelům a investorům v rozhodování, zda-li je pro jejich společnost vstup na veřejně obchodovaný trh, neboli IPO, ten optimální další krok a případně v jaké chvíli (co se týká nastavení klíčových ukazatelů) a v jakém stádiu společnosti či start-upu je vhodné o této možnosti uvažovat a co jsou možné body úrazu během tohoto procesu.

2. Výzkumné metody:

Jako výzkumná metoda byla použita analýza jak vývoje cen akcií jednotlivých veřejně obchodovaných společností, tak jejich finančních a operativních ukazatelů. Analýza byla provedena i s použitím kvantitativního Excel modelu. Analyzováno bylo 13 společností a data byla sbírána z databází veřejně obchodovaných společností, z odborné literatury a článků a z výročních zpráv daných společností.

3. Výsledky výzkumu/práce:

Vstup start-upů na akciový trh je ideálním způsobem, jak získat další kapitál na rozvoj společnosti, monetizovat předchozí investice zakladatelů, venture capital a ostatních investorů a také zvýšit veřejné povědomí a společnosti. Jeho načasování je klíčové a je zde množství faktorů a ukazatelů, jak kvantitativních (finančních) tak těch operativních, kterými se start-upy mohou řídit a které mohou použít jak na určení správného okamžiku tak na to, aby svoje fungování přizpůsobili a upravili tak, aby byl jejich vstup na trh co nejefektivnější a přinesl co nejznatelnější výsledky.

4. Závěry a doporučení:

Hlavním faktorem, který ovlivňuje úspěch společnosti nebo start-upu na akciovém trhu je schopnost společnosti generovat růst. Ten nemusí nutně spočívat pouze ve velikosti tržeb nebo zisku, ale například růstu počtu zákazníků nebo uživatelů. Důležitá je také konzistence tohoto růstu nebo dosahování ziskovosti, které významně ovlivňuje budoucí úspěch firmy a vývoj ceny jejich akcií po IPO. Dalšími faktory jsou například ohodnocení společnosti či regulatorní riziko. Mezi hlavní rizika IPO spadá ztráta kontroly nad společností či problémy s regulatorikou. Co se týká dlouhodobých výsledků a dlouhodobého úspěchu společností a jejich akcií, klíčovým faktorem zde je schopnost společnosti dodržovat předem určené plány a cíle. To dává investorům pocit kontroly a limituje tak volatilitu akcií těchto společností.

KLÍČOVÁ SLOVA

Akciový trh, veřejně obchodovaná společnost, start-up, investice, akcie

SUMMARY

1. Main objective:

The main objective of this thesis is to define and outline a set of guidelines that start-ups and their founders and investors can use when deciding whether entering the public market, or IPO, is the optimal next step for their business and if so then when is the right time to do it (in terms of key indicators set-up), what is the optimal approach and what could be the possible pitfalls of such course of action.

2. Research methods:

Analysis was used as the main research method for this thesis. 13 companies and their stocks performance were analyzed both from their quantitative (financial) and operational standpoints. A quantitative Excel model was created to support the analysis. Stock performance databases and annual reports of the examined companies were used for most of quantitative data gathering and technical literature as well as articles for the qualitative part.

3. Result of research:

Entering the public market and becoming a publicly traded company is a great way how to obtain additional capital, how to monetize the founders and investors initial investments into the start-up and how to increase the public awareness about the business and its products or services. However, the timing of an IPO is crucial and there are also many, both quantitative and qualitative factors and indicators which need to be followed in order to succeed in this process and maximize its effectivity and results.

4. Conclusions and recommendation:

The main factor, which decides whether an IPO will be a success or not is the ability of the start-up to generate sustainable growth, not only in form of revenue or profit growth but also a track record of customer or user acquisition. The ability to generate profit has significant positive impact on the future performance of the business and its stock price. Other important factors include objective valuation of the company or regulatory risks. When it comes down to long term success of the company (and its stock price), the key is to prove to the investors that the business will stick to its forecasted plans. Most significant potential pitfalls are mostly represented by loss of management control or problems with regulation compliance. The ability to do some increases the investor's confidence and reduces the volatility of the stock.

KEYWORDS

Stock market, Publicly traded company, Start-up, Investment, stocks

JEL CLASSIFICATION

G2 – Financial Institutions and services
G3 – Corporate finance and Governance

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BACHELOR THESIS ASSIGNMENT

Name and surname:	Jakub Ječmínek
Study program:	Economics and management
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Title of the thesis:	Startups' IPOs: When is the right time and what may go wrong.
Content of the thesis:	1. Introduction 2. Theoretical part focused on understanding of startups and their key financial indicators, IPOs and pre-IPO processes and key indicators of company's readiness for an IPO 3. Methodological part 4. Analytical part focusing on defining KPIs that startups should achieve to be considered ready for an IPO and outlining key areas of possible threads which may occure prior or during an IPO 5. Conclusion summarizing key finding and reccomendations for startups considering an IPO
References: (at least 4 sources)	• GREGORIOU, G. *Initial Public Offerings: An International Perspective of IPOs*. United States: Butterworth-Heinemann, 2006. ISBN 9780750679756. • HARBOUR, J. *Agglomerate*: *From Idea to IPO in 12 Month*. United States: Rethik Press Limited, 2016. ISBN 1781332096. • MACADAM, D. *Startup to IPO: How to Build and Finance a Technology Company*. United States: Xlibris, 2004. ISBN 1413438911. • THIEL, P. a MASTERS, B. *Zero to One: Notes on Startups, or How to Build the Future*. United States: Crown Business, 2014. ISBN 9780804139298.
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Content

1 Introduction

With the rise of technology, and with it venture capital as an industry, there are ever more companies which once started at zero and grew into multi-billion dollar valuations within years. However, all of these valuations are only driven by venture capital fund betting on a specific and unique features which are driving the traction of these companies and helping them out-race their competition. A lot of these companies grew by the rule "get big fast and figure out how to monetize later". Most of these valuations are therefore only measured by growth in number of customers, users or subscriptions, rather that financial indicators normally used in when evaluating businesses. Kiska (2016), mentions that the biggest challenge for venture capital industry in the years to come will be to transfer these stellar and multi-billion dollars valuations of its portfolio companies into capital gains, so to say to "book the profits". In principal, there are mostly only two exit options for these big venture capital companies, which are either an acquisition of the portfolio company by an industry leader or to take the company public. The first option is the one, which is for obvious reasons preferred by the investors, mostly since it is much faster and more easily predictable solution in terms of valuation. However, for numerous reason, this option might not always be available, or at least not at the current stage of the start-up. Taking the company public, in other words initial public offering or IPO, is the more complicated type of exit which is also much less predictable in terms of valuation, and that is both vulnerable to failure but also has no ceiling or cap in maximal gains.

From the perspective of start-up founders, the pros and cons do not differ much from the once previously mentioned for investors, other than one, quite important variation – in case of acquisition by a big corporate market leader, the founders will most likely no longer have control over their company and its destiny and it will become a part or a subsidy of the investor. In the case of an IPO however, the owners will most likely have to report to a board of directors consisting of the most important investors with the largest equity shares, but will still remain in executive positions with the ability to steer the company and its destiny into a direction they had in their mind from the beginning. This can represent a very crucial differentiating point for a lot of founders, especially when the company is gaining traction and momentum and the goals become more achievable. As Thiel claims (2014) one upside of public offering, which is true for both the founders and the venture capital investors is that the possible value of their share is unlimited both in its maximum and its minimum. Unlike a corporate acquisition, the value of the company and therefore the stake of its founders and investors will keep growing as long as the company will keep succeeding. Buy out represent a secure pay check without bearing the possibility of potential loss of value in the future, however, both the investors and the founders will be restrained from all the possible further gains the company will make in the future.

Together, these facts demonstrate that in certain situations, IPOs can represent an ideal option for both founders and investors exit. Processes leading to IPO are however far from simple and therefore require proper preparation and involve number of experts and advisors. Implicitly, this preparation is time consuming and timing of the IPO becomes one of the keystones to success. This thesis focuses on understanding when is the right time for start-up to start think about an IPO, how to time the preparation and what can be the possible pitfalls which start-ups should be aware of.

The goal of this thesis is to create and outline guidelines, both quantitative (in terms of basic financial KPIs) and qualitative which could help start-ups to better aim their focus when thinking about and preparing for an IPO. To do so, this thesis is divided into two main part, theoretical and analytical, where the theoretical part focuses on providing the reader with detailed information about both start-ups and IPOs and helping the reader in understanding the dependencies of them on each other. Also it focuses on introducing the reader into the world of

IPO preparation, how are the concrete plants designed and what all needs to be done in order to successfully prepare a company for entering the public market. The analytical part aims at defining a set of KPIs, both financial and non-financial and guidelines within these KPIs which could be used by start-ups to determine, whether a public offering is ideal the way for them to raise capital and if so that when is the right time to do it and how is a company supposed to set up these indicators in advance to the IPO. In addition, it should also provide some understanding on what are the most common pitfall and how to avoid them. It points out the fact that no matter how well financial indicators are set up to convince potential future investors, the non-financial performance of the company, such as its ability to continuously grow customer acquisition and retention as well as its reputation or the quality of its top management always plays the key role in the post-IPO success of the company, mostly measured in the growth or fall of stock price. This part of the preparation also takes the most time to achieve and the less time to lose. The conclusions of both of the quantitative model and the "soft" indicators analysis should therefore provide the reader with a comprehensive understanding of what are the key guidelines to stick to when thinking of or preparing for going public.

2 Theoretical and methodological part

Since this thesis focuses on start-ups‘ IPO and how to tell, whether it is the right choice for a particular start-up and if so than when, the theoretical part of this thesis aims at describing what a start-up actually is, how does a start-up’s life journey look like and what stages it need to go through as well as on introducing what are all venture capital investors and therefore, how does a typical start-up equity structure looks like and who are the investors seeking future monetization of their investments.

The theoretical part focuses on the other side of the equation, which is an initial public offering. Here, the goal is to help the reader understand what an IPO is and how do the processes and preparations for such an event looks like. This part of the theoretical section also outlines all other funding options that businesses and start-ups have in order to put initial public offering into perspective.

2.1 Start-ups and its phases

The first chapter of this essay focuses on describing what exactly is a start-up, how it is defined, what stages it goes through and how can it be funded. It is important to understand this before getting into the analytical part, since there are some major differences between start-ups and mature companies like most of the once that are publicly traded.

2.1.1 What is a start-up

Firstly, we need to understand what the term start-up actually means and how does it differentiate from other, everyday companies. Definitions of what a start-up is vary and there are many of them. As Kiska (2016, p.9) says, start-up is also "*a company that makes an explicit commitment to grow fast. Such a commitment makes a huge difference in how founders approach building and managing their company*". Kiska also talks about defining start-up more from mindset point of view, rather than from a factual point of view. Also, start-ups usually tend to offer a product that is unique – meaning that either no one else on the market is selling this product or that the specific characteristics of the product make it unique and one of its kind. In venture capital terminology, this is often referred to as "unique value proposition" or USP in short.

There are several phases which start-ups go through and each of this stages is the right one for different types of findings and since some of the stages are riskier than others, each of them also fits different investors.

2.1.2 Stages of start-ups

As described by Bartlett (1999) and Gompers with Lerner (2004), most of the start-ups follow a similar path, which is predicated on mainly on funding, where each round, seed, growth, A round etc., always push the start-ups through these stages. In other words, different stages require different types of investors due to their increasing size and complexity. After successfully engaging in all these phases and acquiring financing from all the different growth investors, the ultimate exit and monetization option is an IPO.

Different start-up can go through these phases at different phase, slower and more rapidly – a lot of different variables play a key role in pushing the start-ups through each phase. Even though that, as mentioned, funding is probably the most significant accelerator of a start-up’s journey, since, as written later in this chapter, there are key milestones that move a start-up form one phase to another like, other variables like the country or geography of origination

might be close second, since different milestones are easier accessible and attainable in more developed countries like the US, South Asia, Western Europe. One geography than probably does not come to mind as an ideal environment for growing and building a technical start-up is Israel, where driven its diverse historical background, technical start-ups grow at a second fastest phase in the world, right behind the US. Other variables that can move start-ups between phases faster even when given the exact same unique selling proposition and skills can be political situation, founders' network and connections, timing of the market entry, customer readiness or also simply – luck. Harbour (2016) and Bartlett (1999) mention several different phases each start-up goes through, including the following.

Seed stage

At this stage, the whole value of a start-up lies in the idea and the people. The start-up is mostly pre-sales, meaning they have not yet sold any product or service. This stage is also where first prototype of the product is develop and tested, in order to get feedback and create so called most viable product or MVP for short. Sometimes, patenting the core idea can happen at this stage. The seed stage is also the phase where start-ups are the most vulnerable, since its foundation is not yet strongly established. Key decisions, which can and most likely will shape the start-up in the future are made here. These are decision such as hiring, or at this stage, more accurately, partnering.

Hiring is one of the most important and future-shaping activity in the whole life of a start-up or business. On one side, this is a pre-revenue stage and no funding is yet secured, on the other side, the key talent that will drive the company's growth and innovations is acquired at this stage. Due to the lack of capital, certain share in the company is mostly offered to these key people. It is essential to hire the right people at this stage, not only from the perspective of skills or talent but also from the perspective of loyalty and dignity. All future investors from venture capital funds to potential IPOs will look at the ownership structure and will challenge it. It is important that all key shareholders share the same vision for the business and are aligned on the future plans, including taking in investors' money. Any turbulences in the ownership structure can cause doubts of the potential investors regarding the stability of the business as well as the value of the investment. Same rule goes not only to business partners but also other shareholders – the investors. Inviting a wrong angel investor can also shake up the stability of the start-up in the future.

Growth stage

Here, start-ups are starting to generate revenues, however, this might be far from making actual profit. Attracting new customers is what usually keeps the founders up at night at this stage together with growing the core team and hiring new, highly skilled employees but growing the labor costs as little as possible at the same time. Certain initial funding might already have been obtained at this stage. It is crucial for the start-up to use this funding wisely and effectively, since all future investors will look at past funding round and how the money were used – in other words, return on past invested capital is often used by investors in the decision making process. Start-ups at this stage should be able to prove that they can grow sales disproportionally faster than funding, not linearly to it. Keeping the run rate, which is the timeframe for which a certain amount of capital is sufficient for company's operations, as low as possible proves to investors that their money will be used to its fullest potential to generate revenues and maximize returns on investment.

Growth stage is also the time to push branding as much as possible and in the direction that is aligned with future plans. Most of the branding in the growth stage cannot be designed,

since there is just initial funding, insufficient for proper marketing, therefore most of the band awareness and recognition is created through positive (or negative) experience. The kind of brand that is created at this stage will most likely stuck to it for a long time. When investors come to invest in start-ups that are going through the growth phase, they always look at past customers of the business and examine what was their experience with the product or service. The presentation to investors is always a de-facto market material and investors want to see real stories of happy and satisfied customers to strengthen their trust in their investment into the start-ups and its offering.

Expansion stage

At expansion stage, start-ups mostly focus on competition and start thinking about growing the business into other geographical locations. Most of the times, the core executive team running the business consists of more than just the founding members. Revenue growth should be stable and cash flow of the business should be close to breaking even and making a profit. Start-ups at this stage can usually benefit the most from having more senior people who have experiences running large businesses – these advisors are often part of a venture capital funds and are called "entrepreneurs in the residence". This is the stage where start-ups should start focusing fully on future IPO, if that is something that the founders want. In order to ensure IPO readiness, start-ups need to operate as a fully grown company long before entering the public market to even out the opportunity with other public companies that are established for many years. Performance history plays a major role in investment decision making not only for institutional investors but also for banks and retail investors, who will play key role when and after going public. Start-ups need to do their homework here and understand what are the key characteristics of successful public companies – the key attributes and KPIs are listed further in the thesis. Since the expansion stage is transferring the business to the final stage of its life, in case of thinking about an IPO, business should start building a back log of orders to prove financial stability and robustness of its earning. There are many areas where investors and banks look when a company goes public, but there are two major points of focus, which are:

1) Financial stability and quality of earnings – this point might come natural to most readers, however it is being outlined again given its essentiality. The size of the sales or earning does not matter near as much as the quality of it its future stability
2) Regulatory and compliance – since failing in this can retract future customers and discourage them from buying, regulatory and compliance goes hand in hand with financial stability and quality of earnings. It is also an area when established public companies, which will be or already are the key competition have the most advantage in, given the years of experience and public awareness

The expansion stage is a good opportunity to focus on streamlining both of them when not yet being directly in the spotlight and to prepare for the mature stage.

Mature stage

After start-ups successfully navigate through all the previous phases, this is the phase of one more final decision. Start-ups, or at this stage, grown companies can decide to peruse further expansion or sell off to a major player. At this stage, revenues, as well as profits, should have stable growth record, the business should have recurring customers and stable business model together with a well working executive team. Since the value of the business is much larger, listing the company on a stock exchange or so called initial public offering mostly represents the only way to attain enough capital for further expansion. Other, and more common option,

is to sell the company to a large player from the industry. In case the start-up decides that an IPO is the right future step for the business, the mature stage is the right time to focus on getting al processes streamlined and automatic. This is also the key stage to organize regulatory issues and to hire a compliance officer or even a team to prepare the company and its employees for all the regulatory restrains and media attention they will have to face in the IPO process. As much as this might not seem relevant for start-ups, it is a key part of mature public companies and every business considering going public needs to be fully aligned in this area to withhold the pressure in the process to come.

2.2 How start-ups are funded and how investors monetize their gains

This chapter mostly focuses on providing an outlining how start-ups can be funded – who are the growth investors – to understand how does an equity structure of a start-up look prior to an IPO and who are all the involved parties aiming to monetize their past investments. This is essential to understand since the organizational structure of the company plays such an important role for future decision making of potential investors. Also, start-ups and its founders should bear in mind that the type of investor they are inviting in their company, thus giving him quite significant share of their business, is and will be a part of the future decision making process when it comes down to talks about going public.

Each investor has different preferences in terms of how they want to monetize their investment after the investment period. The larger the investor is, the more he can support the initial public offering process, due to the network and experience he or she has, however the bigger the investment, the more complicated process is required after going public in order to monetize the profits.

Because the stock market is based on supply and demand principle, a larger moves – buy or sell – trigger moves in prices of the stock. Therefore, it is complicated for a large fond to sell out all its holdings in a start-up that just went public. Rather than, shares are mostly sold out in blocks to prevent rapid and unexpected changes in the stock price and unwanted volatility. Combined with investors' preferred investment period, different investors preferred different monetization options. For example, monetizing an investment throughout acquisition of the start-up by a big company or a market leader, who will pay the price in cash and the investor will immediately monetize the investment, comes as number 1 preference in most of the times and for most of the bigger investors. Given the burdening fees connected with the initial public offering process, investors might prefer sell of via acquisition instead of going public even in the ultimate potential of the public listing is slightly larger, especially in their investment period is soon to come to an end.

2.2.1 Types of venture investors

Kiska (2016) and Macadam (2004) also outline several key types of growth funding or investors Most of the time, more of these types occur throughout the life of a start-up, either as the start-up reaches different phases or sometimes even simultaneously. Also, each of these types brings certain different changes to the business going forward and affect the structure of the business in the future, therefore its attractiveness to potential future investors or employees. It is essential for the founders to understand all of these types, their characteristics, timelines of the processes and overall pros and cons to correctly choose the right one, according to the stage their business is currently in. Each chapter of a start-up's life is typically connected with certain types of financial investors.

In the beginning, start-ups mostly focus on getting the momentum going by acquiring their first outside financing and start production or service distribution. As they grow through the separate stages, start-ups tend to focus more on using the investors to acquire value in terms knowledge, experience and connection, rather than only financing.

Start-up accelerator

Probably the first type of an investor that takes place in the venture funding value chain are the start-up accelerators. By far not all start-ups decide to go there, since these institution can demand couple of percent of the business in exchange of limited value, but there are accelerators that are worth giving a share – at least in some cases. One type of such an institution is Y Combinator, a start-up accelerator founded by Paul Graham with Sam Altman, founder of OpenAI as CEO. This accelerator invests rather smaller amounts of capital into larger amount of start-ups. Y Combinator does not provide any experience or direct value in most of the cases, but what it does is that it combines start-ups across the globe and across industries they think have significant potential – therefore creating initial networking and providing the founders with their first network. Also, given the CEOs public awareness and reputation, being part of the Y Combinator gives start-ups a certain badge of quality and significance they can use when approaching new investors. The most prominent start-ups are often passed to the bigger venture capitals, since they are part of the accelerators and the key executives of these venture capital funds often sit on the board of directors in Y Combinator together with past successful start-up founders, who have built businesses from seed stage to global enterprises and who managed to exit their start-ups either via a sell off to an even larger corporation or who have led their business to a successful IPO.

Angel investors

This type of investor is ideal for seed stage. Anger investors are mostly successful founders who have exited their own companies or other wealthy individuals with extensive knowledge of the field they invest in. They can offer less capital than a venture capital fund, however they offer it at a very early stage, at which larger funds would not yet be interested, therefore bearing more risk. Since the risk of failure is much greater at this early stage, angel investors mostly target larger share of equity that a venture capital fund would for the same size of funding. In exchange, angel investors are mostly very hands on in the business and provide a lot of personal time and value. None of the less, angel investors mostly supply the first bigger and more significant deals throughout their extensive network and connections. Network is something that start-up founders are missing the most when they are starting. They might have an amazing idea, but without having someone to sell and the money for marketing to promote it, it is worthless. Especially nowadays, when there are ever more start-ups offering B2B solutions and "as a service" products to large corporations, having the right person to call can make or break the business. Angel investors also work as some level of "guarantee" for the larger investors to come, since they give the start-up a sense of relevancy.

The due diligence process of for example venture capital fund is much faster if there is an angel investor present and therefore, these larger funds might be initial interested even if they are still not sure and would normally pass on the opportunity, because it does not cause them much trouble and work. As a bonus, angel investors and offer those who propose the business and the investment opportunity to the larger funds in the first place since they are mostly part of their network.

Venture capital

Venture capital or venture capitalists are investors, who back start-up founders both with financial funding's and with knowledge and expertise. In return, they mostly obtain certain portion of the company. Size of venture capital funds vary from low millions of Euros to multiple billion euro funds. Therefore, it is also the one type of investor who can back all phases of a start-up from seed stage sometimes all the way to mature states. Commonly, multiple venture capital funds work together on one investment deal. This type of investor is, as the name suggests, the most common for venture capital and growth funding. Each venture capital fund varies in its shape and size and there is a fund for almost every type and size of business. Successful angel investors sometimes use their history with funding start-ups that have later became a lucrative investment to start their own venture capital. Each such an investor have their own investment requirements, like any other investment organization, that restricts them to what they can invest into. These requirements mostly consists of:

1) Type of business
2) Type of product and offering
3) Industry
4) Size
5) Geography

The main difference between a venture capital fund and an angel investor is that venture capital funds use external capital that is committed to them by their limited partners. These are people who are not involved in the tech industry but who are looking for some alternative investment and new ways to get returns on their capital. Most of the time, the management of the venture capital fund will call a meeting to present the investment opportunity and if the limited partners are interested, they will conduct a capital call, stating how much outside capital they need and the limited partners commit the capital as per their initial investment agreement.

Technical enterprises

A not so typical investor into tech companies are current large enterprises such as Microsoft, Cisco or IBM. These companies are experts in their field, making it easy for them to understand start-ups and products or services within their segment. Therefore, they are able to quickly evaluate the potential of the start-up as well as the necessary steps it will need to face in the future. These companies can mostly invest into these start-ups using an approach called convertible note, which has a structure of a loan with the option to convert the loan into equity if desired by the investor at a specific terms & condition and price. These investors mostly let the business and its founders manage the business without any changes, providing them with experience, guidance and network, sometimes even positioning themselves as their first major customers. Assumption is, that at a certain time in the future, the enterprise will convert its investment into equity for much better conditions due to the convertible notes agreement. Sometimes, these enterprises buy out the founders and integrate the business as its subsidy, de-facto acquiring the business for a below market price.

Crowd funding

Especially for start-ups with easily understandable product for retail customers, crowd funding can represent an interesting option of obtaining capital. During this process, companies offer wide population to get try their new product first and for discounted price in exchange to paying in advance. The company collects pre-orders and use the collected money to both produce and

deliver the products as well as to grow the business. The biggest upside of this type of funding is they the company is not giving up any equity. In terms of the role of this type of funding in the overall structure of acquiring capital prior to going public, crowd funding, however, only plays a minor role, since given its characteristic, it is mostly suitable for start-ups, that create retail products that can be distributed amongst the investors who participate in the crowd funding project and who ideally have fairly low manufacturing cost of these products. Given the fact that vast majority of current start-ups are in the field of either free (or freemium) services or in B2B sector and very rarely in the retail product sector, these start-ups do not have much to offer to the potential investors. Crowd funding are therefore used by rather smaller companies who produce interesting products and want to scale production – these later very rarely achieve IPO ready size, in fact, there have never been a company going public that would have history of being funded by a crowd funding project.

Initial coin offering

As described by ICO Watch List (2018) a special form of distributing shares is via an ICO. Initial coin offering is a relatively new method of raising capital, which has emerged with the rise of crypto currency. Initial coin offering is in many ways similar to initial public offering, however, investors participating in ICOs do not obtain shares but tokens. The advantages of this fundraising method include raising capital without diluting shares of the company, since by distributing tokens companies do not distribute equity shares, little to no regulation, simple and fast fundraising process and are opened to every one (not just selected investors). Main disadvantage of an ICO is that because it is a quite simple way of raising money, there are a lot more start-ups and companies trying obtain financing using this method than there is investors looking to invest money into such a start-ups. Also for the lack of regulations in crypto technologies, ICOs are one of the most risky investments on the market and with every ICO failure or scam, the amount of investors interested into investing this way decreases, which makes it harder for companies to stand out and tract investors' attention. There are three main types of tokens which companies rising capital via an ICO can distribute. ICO Watch List also defines several types of tokens:

A) Utility tokens

First type of tokens companies can issue via an ICO is a utility token. By buying this token, investors get the chance to get the first look on the product, a lot of times having first samples or being able to try beta versions of certain software. These tokens do not have any face value, they only represent a VIP status of the investor. Also, these investors mostly get the final product in the value in which they have purchased the tokes (or with a discount), once the finished product goes on the market. Even though utility tokens are designed to function only as a coupon, they are also tradable and therefore their price fluctuates as with stocks or bonds.

B) Security tokens

This type of token mirrors the value, or certain share of the value, of the company which has issued it. It is a tradable asset and has to be compliant with federal regulations for securities. Not all security tokens, however, represent a share of the company (as equity tokes) – they are only used to help start-ups raise capital. The number of issued tokens is limited and since their value derives from the value of the issuing start-up, investors can purchase them for a relatively low value in the beginning and later trade them for high multiples in case the company is growing. This method is similar to derivatives investing.

C) Equity tokens

Equity tokens represent a subcategory of security tokens. Via issuing equity tokens, companies can substitute the both the IPO process and the bond issuing process, since the equity token can represent share of the issuing company debt as well as equity. There have been a lot of controversial about equity shares ICOs and the Security Exchange Commission (SEC) has stated that equity tokens fall under the federal securities regulation and therefore there comply with these regulations, making it more difficult and more costly for start-ups to issue them and therefore taking away a lot of its initial potential. This method is similar to venture capital funding, with the exception of being available to wide audience of retail investors.

Not all of authors however agree on the feasibility of raising capital via an ICO and its positive impact on start-ups. As Kiska mentions, the role of an investor in the success of a start-ups is crucial. The first investors in a start-up are basically a part of its unofficial "board" or top management and their help and mentorship is necessary for the successful start of the business and the set-up of its operations. These ICOs distribute this role amongst many public investors who cannot participate on the business operations of the start-ups and cannot provide any mentorship to the founders. Kiska also points at the importance of having the founders' back, which is not the case in ICOs as well as on the fact that only the cash support does not make a successful start-up. Also, BlockX Labs (2018) point out several other threads represented by deciding to raise capital via an ICO, including hacking possibility, fraud or crazy expectations of the "backers".

2.3 Types of funding of mature businesses and their advantages & disadvantages

In order to understand when is the right time for initial public offering, start-ups first need to understand in great depth and detail all the other options of financing they have when becoming a mature company and the pros and cons of each, since going public represent the ultimate choice and is the most difficult, complex and capital heavy solution. All of these different types of funding are based on certain requirements, therefore not accessible for all start-ups and at across different stages, however, most of the businesses will eventually need to go to most of these types of funding prior to going public and the set up and proportion of these individual types of funding amongst the overall capital structure of the company can play an important role when going public, since the investment banks are the institution that are responsible for the process and taking companies public and they are bonded by regulations to only allow certain capital structures in the public markets. Therefore, part of the process of preparing for an initial public offering, or even just part of the agenda as a mature business, is to hire the right people responsible for the capital structure of the business, to prevent future delays and regulatory issues. There are four main options when it comes to funding a company, each of them suitable for different business stages and needs. Gladstone and Gladstone (2002) and Macadam (2004), describes the following types of funding.

2.3.1 Organic growth

First and the implicitly most frequently used method of funding amongst start-ups, especially in very early stages, is via an organic growth. This means that start-ups are financing their growth using their own cash flow. This is the easiest method to use if you are generating enough cash flow to cover you growth requirements. Biggest advantage of growing a business organically is that that all the shares remain within the company and there is no need to divest them amongst external investors. The main disadvantage of this type of funding on the other

hand is that the capital raised is very limited, only to the free cash flow produced by the operations and investments of the business and therefore, it is hard to fund a rapid growth only using capital from this type of funding. Another aspect to consider in the cost of capital and that includes the cost of equity. This term described by Patterson (1995) as the cost of own capital put in the business by its founders. Sometimes, and not too rarely, can the cost of equity be greater than the cost of borrowed capital. In such a case, it is worth it for the company to keep taking on loans and invest the capital elsewhere or just create some cash pillow. This depends mostly on the stage than the start-up is in, since the bigger the business gets and the more it is able to prove financial stability, the cheaper external capital gets and the more of it can the business obtain. Especially for smaller or young businesses, organic growth is a good path, even though it might slow down the growth compared to if the company was to take on some expensive (in terms of costs or interest) loan and external bank financing, because the proven ability to grow organically, that is to use self-generated cash flow to finance future growth is a big benefit and positive sign a lot of investors are looking for and it might be something that pushed investors into considering this start-up despite its lower attractiveness that other start-ups, that are however only financed via acquiring easy-to-obtain and expensive loans.

2.3.2 Loans and credit

Bank loan are probably the most common method of financing a company. In such a case, a lander or a creditor (mostly a bank) will issue a bill of exchange, loaning the business a certain amount of capital per given time period. As a collateral, the bank will usually use some of the asset the business owns and will charge a fee and an interest on the principal for providing this service and taking on certain risk. Main advantage of loans and credits is that it is quite easy and time efficient way for businesses to obtain capital. Key disadvantages of this type of funding are excessive expenses in terms of interest payments and limits and restrictions on the maximum amount of money borrower can obtain. As already mentioned previously in the thesis, the capital structure of a business or start-up meters and potential future investors will examine it. With that being said, loaned and credit falls into the capital structure of a company and therefore should be carefully considered. Cluttering the balance sheet with too much debt raises a warning light to all investors that the business is unable or too comfortable to use its own generated cash-flow effectively and requires a too high proportion of external capital to produce results. This also suggests that the investors' money will not be used effectively as well and therefore will produce lover return on invested capital, which is something no investor wants to see.

2.3.3 Bonds

Issuing bonds or so called tradable loans, is yet another way how to secure funding for a company. Bonds are debt instruments, issued for a certain time frame and with a given interest rate. Initial value of a bond is called the face value and represent the amount of money that was landed to the issuer of the bond, which can be government, institution or corporate. At the maturity date, the face value of the bond is payed back together with the interest (or the interest is payed periodically throughout the duration of the bond) these bonds can be later traded and therefore increase or decrease in value. The advantages of bonds are similar to advantages of loans and other credits, which is relatively simple process of issuing them and distributing them, however, the demand for the bonds can be limited, which is also main disadvantage. Issuing bonds requires the business to be in a stable positions as well as to put a lot of efforts and some capital behind such an idea, which is definitely more complex and complicated that simply obtaining a load or credit from a bank. The company that wants to issue bonds needs to be able to prove to the issuing bank as well as to the future bond investors that it has a solid and concrete

plan of how to scale up and reach the point where it will be able to repay the principal as well as the promised interest. The company also need to have all proper filings and other documentation for the bank as well as for public. This gives it more credibility than a bank loan and predicated and proves healthier capital structure. Also, this might be a good try out of the start-up for future regulatory filing and overall formal and legal readiness for an initial public offering process, even though the process of issuing bonds is not near as complicated and long term as filing for a IPO.

2.3.4 Shares

The ultimate form of funding a company is issuing shares. As Macadam claims (2004), there are many ways in which shares can be later distributed to both public and institutional investors. First option is a private distribution of share (privately held company), where investors can only purchase share throughout buying them out from other investors who own them. Within this type of funding, private companies or privately distributed shares in the more common option of the two. The other option is public making the shares available to public. This can be done via a public offering, where there are also two main options how to approach the offering. Business that want to offer these shares to public can either do so via an initial public offering (IPO for short) or using a direct public offering (or DPO). IPO requires an underwriter, which is mostly an investment bank, to create tradable notes. The amount of share the company decides to distribute amongst public is sold to institutional investors like pension funds or big insurance companies by the investment bank, for a presaged price per share, guaranteed by the investment bank. This is called a primary market and requires a complex procedure for with the investment bank than charges a fee, usually in percentage of the funding's raised. The shares are later sold by the institutional investors to smaller or retail investors at a stock exchange, which is called a secondary market. A direct public offering is very similar to the initial public offering, however skipping the investment bank as a middle man and offering the share directly to public retail investors, thus saving the fees for their services. This is however a much more complicated process and can be, but does not have to be, even more expensive that an IPO. Next chapter will be directly devoted to describing public offering processes in more detail.

2.4 Public listing process and its types

IPO or initial public offering, sometimes also referred to as a stock market launch, as described by Harbour (2016) and Gregoriou (2006), is a procedure where shares on a certain company are sold to both retail and institutional investors. Standard IPO has several "underwriters", such as investment banks to issue the stock certificates. Stocks of this company can be purchased on one or several stock exchanges such as the New York Stock Exchange (NYSE) in the US or London Stock Exchange (LSE) in Europe. Stock of such a company can from that moment be traded freely (known as floating) and offers additional capital and monetization of previous investments.

Primary market – first time shares are sold to public at IPO. Secondary market is where public can buy in at a stock exchange. First, shares are bought by institutional investors and funds.

Another way how to enter the public market is a direct public offering or a DPO, which is a method the music sharing platform Spotify wants to use to become public. This method gets rid of the investment banks and does not provide the stack only to institutional investors but directly to public and retail investors. Given the absence of the investment banks, this method does not have any underwrites or anyone who would buy the stocks in case the price does not reach the

desired number, which represents more risk in terms of lower valuation but also a certain upside in terms of saved fees, which can in a classic IPO amount to a couple of percent.

Generally speaking, there are several reasons for a company to consider public listing, which are:

1) The start-up growth so much it will become too hard to find a private investment deals
2) IPOs drive attention – ringing the bell on wall street or any other major stock exchange is an event which the whole world will see and that, at least for technological start-ups, is a major advantage and a "free" marketing is a way they would hardly get any other way
3) It provides higher valuation compared to private deals and investments since especially technological stock and the hype around them gets over valued all the time
4) It can become even more lucrative target for international technological enterprises since they can just buy out share with much simpler due diligence, both technical and financial, because that all have been done it the initial public offering preparation process. Also, buying a publicly shared company gets these tech giants more attention that private, mostly confidential deals

The attractiveness and reasonability of entering the public market also depends on the selection of the stock exchange. It needs to consider required fees from the stock exchange as well as the value provided by the exchange. For example NYSE, LSE or NASDAQ, the three most commonly known stock exchange houses are only for the biggest and most prepared companies, since they forgive no mistakes due to all the attention of public as well as press that is concentrated of the business going public on their watch. For most start-ups, smaller and more local stocks exchange houses in Germany, UK, Japan, Singapore, Honk Kong etc. might be a more suitable options saving up on listing fees but still exposing the start-ups to and interesting level of publicity and attention.

2.5 Preparation leading to an IPO

EYs guide to going public (2018) differentiates between three main stages and several sub stages when approaching an IPO. First part focuses on planning the process and timing the market entry, second part outlines the most crucial segment which is execution of the plan and last part looks at the actual realization of a public offering. In case that a start-up finally decides to go public, the preparation to the final bell ringing is essential and can propel the start-up to the space as well as send it to insolvency. Only start-ups that have gone through the mature phase of life for at least a year should consider such a move, dependent on how prepared they are. Choosing the right partners in terms of financial advisors, tax consultants, legal representation or regulatory and compliance advisors can help a lot, since the preparation takes several from months up couple of years and that is all on top of the regular work and responsibilities of keeping the business growing, which especially at this phase prior to IPO becomes increasingly important.

Part of being a publicly traded company is also financial filing requirements reported to SEC (or local equivalent), where businesses are required to file updated financial statements every quarter, half year and annually. This implies significant workflow on the finance team, which project in increasing workload for the recruiting and people team as well as tax and so on. This means that internal people changes prior and during the preparation process will be necessary. Implicitly from this point, key roles need to be established to prevent unclear responsibilities amongst employees. There are several phases that the start-up founders, key

management and investors with the help of advisors need to go through. These steps and phases include:

2.5.1 Planning of an IPO

As the analytical part of the thesis will later confirm, taking enough time to plan ahead all the necessary steps can prevent many mistakes as well as prepare the founders, managements and the investors to what is coming. Especially for start-ups, this part plays a key role, since they have mostly been focused on growing and gaining momentum and increasing customer base rather than on proper accounting, management, business model planning or creating the right corporate environment. As it is also mentioned in the EY guide to going public, companies must learn how to act like a public traded business even though they are not yet one – this same applies, in even bigger scale, to start-ups. In this phase, it is the right time to:

a) Clearly define business plan and strategy
b) Get accounting in in order
c) Figure out desired valuation
d) Develop a an equity story
e) Put together a support team of advisors and consultants
f) Designing marketing plan
g) Define clear communication plan
h) Set timeline and deadline
i) Attached responsibilities and roles to executive management

Also, it is time to again and thoroughly weight all other finding options mentioned in the previous chapter of this thesis to ensure that an IPO is really the optimal way forward for the founders, the investors and the business. This phase should take place ideally sooner that 12 month prior an IPO date, depending on the size of the business and the stock exchange (some exchanges might have more strict deadline that other as well as regulatory environment in every country requires different steps of the process to be filed at different times and with different deadlines)

2.5.2 Executing on your plans

If IPO seems to be the right path for a specific business to follow, it is time to build the right management and hire appropriate advisors and investment banks. An ideal team of advisors consists of one, or ideally multiple, investment banks, who are also taking the role of stock underwriters, team of accountant, team of legal representatives and PR and marketing professionals. For each of these advisors, there are usually teams who specialize in taking companies public, which is also an optimal choice since they already walked the road and have concrete experiences with things that could go wrong and how to prevent them.

With this experienced team of advisors and management, it is time to start optimizing all key KPIs, both financial and non-financial. Also it is the right time to let the market know about a planned IPO and to present the equity story of the business, outlining the uniqueness of its product or service and why investors should put their money into the stocks. The goal of this phase is to set up all processes in a way publicly traded companies do it so there is no need to do so after, when it is too late. This phase can take place in anything between a year or couple month prior the IPO and leads all the way until the listing day.

This is a stage where the stock exchange commissioners as well as the regulatory organizations like SEC and similar local organization get involved in the process. The monitoring of all the steps stars taking place and the business becomes responsible form this

moment on. How demanding the execution of the plan will be depends mostly on the quality of the plans made prior to the actual project, therefore it is work it to take the time necessary to avoid additional delays caused by the authorities.

In terms of the investors, this in mostly out of their reach and the local management need to do all the lifting. The major value than larger investors can add at this point are connections with the investment banks, scheduling meeting and even negotiating terms & conditions of the collaboration, since the bargaining power of the start-ups are not on yet on the same level.

Overall, this is the key part of the whole start-ups life time. Very few start-ups can make it to this part successfully, however also few of the start-ups who do are finally able to execute on their initial public offering plans effectively and ensure their readiness for day 1 as a publicly listed company.

2.5.3 After an IPO

The after-IPO phase is equally important to both of the prior once. Now, start-ups must manage the transition from a relatively small group of excited and bold start-up founders with an idea to a much bigger and more sophisticated company with a responsibility to thousands of investors, both institutional and retail, concrete goals and detailed business plan and operations. Given the big valuations created by venture capital funding, successful initial day might be much easier than keeping the stock price growing as a mature company. Also, all of the sudden, a company with a relatively low previous funding compared to big corporates now has to utilize a big sum of money raised from IPO proceeds. Key success factor in this phase is definitely and most importantly keeping up with pre-IPO promises and proper PR and communication. There is nothing that can tank a stock price more that when a business communicated an unrealistic growth and performance plan and later struggles to deliver on it.

Probably the most important activity that management need to focus at this stage onwards, except of actually driving the business and its growth, is transparency and communication. Most of the publicly listed companies, especially the young start-ups with little to no experience tend to be over focused on development of the product, rather than on keeping up with the promised plan, driving the business and sales and communicating everything with the public and with media. The biggest losses in stock valuation are mostly obtained not due to the actual failures or shortcomings, but rather by uncertainty on the stock market caused by the failure to communicate these mistakes clearly and with proper plan and responsibilities on how to make up for it.

Another important part of the after-IPO process is one that might seem to come naturally but one that is often overlooked by the start-ups, too busy with all the new processes and responsibilities, which is innovation. Not only start-ups, but also grown and mature companies sometimes struggle with not being able to keep their focus on running the business in terms of day-to-day operation, driving sales and revenue growth according to pre-planned predictions and forecasts to ensure continuous growth in stock price and innovation on their product. This can later lead to the inability to keep growing sales caused by lack of innovative solution.

There will always be a pressure on the top management from the side of the investors from this point on, which they need to prepare for as part of the overall process of preparation described previously. This should not affect their decision in any way since most of this pressure is usually created from the arbitragers or the opportunity investors, who are trying to manipulate the price of the stock in way direction or the other, depending whether they hold long positions on the stock or shorting it (betting against it). Also, attention should be paid on the long game

rather than the short one. This means that from this point of, management is reporting the results of the business performance every quarter (3 moths) rather than on long term bases. This also drives the performance of the stock more than anything else, which usually also drives the management salaries (most of the time, the top management of start-ups can still be its founders or fort employees who either hold a piece of the pie from day one or who have been given shares of the company as a motivation or as part of the salary to ensure they will stay for the long run). This means that the post IPO era can motivate the management to focus on always reporting the best numbers they possibly can for each 3 month period rather than focusing on how do these short term gains affect the business in general. These two might be, as a lot of times are, aligned with each other, however there has been proved techniques of how to artificially (yet still legally) improve the financial statements and performance of this business such as reallocating costs or revenue to different periods or maximizing earning per share, which can later hurt the business in the years to come.

All in all, there are many tasks and areas, each equally important, that businesses need to keep their eye on after going public. The pre-IPO plan needs to address this issue and solve the question who will be responsible for which are as well as to set up a reporting system and approach for executives and board of directors with key investors, so they can easily track the progress, spot warning lights and possible issues and address them to ensure smooth sailing even in the waters of the biggest and best players on the market. In the past, companies has been going public after tens of years in business and with extensive experience and knowledge as well as capital to do so, where nowadays, more and more companies are thinking about IPO just a couple year after opening for business. This put even more pressure on the IPO plan to be as precise and robust as possible as well as complex and addressing all the possible scenarios to ensure the highest efficiency in terms of time as well as capital (with some of these companies making losses, which are later even larger due to the significant fees of the whole process).

2.6 Methodological part

For the analytical part of this thesis, multiple analyses were used as the main method for this thesis. Data regarding the past financial and operational performance of these companies were research and gathered, mostly using the "S-1" filing required for all companies entering the public market by the SEC (Stock Exchange Commission). This source of data was used mostly due to its standardized format and calculations, which ensures the same approach to calculating all of the key financial and operational indicators and therefore provides consistency throughout the analysis and the model. In the second part of the quantitative section, stock performance of these 13 publicly traded companies (start-ups) has been gathered from individual stock exchange houses and their databases, where these businesses are listed (mainly NASDAQ).

These data was summarized in an excel model and analyzed further using various approaches and calculations to better understand the interdependencies between the key performance indicators and the future development of the price of the particular share in time. Each of the 13 companies (start-ups) was later given a ranging according to the performance of the stock in 3 different time frames as well as their volatility. Start-ups ranking in the top 4 the most times, as well as start-ups ranking amongst the 4 worst performing once, were matched with their financial performance according to the data summarized from the S-1 filing as well the qualitative data.

As for the qualitative section of the analytical part of this thesis, articles by authors and companies specializing in this topic were used to understand and analyze these companies' operational performance both before and after their initial public offering.

These 13 companies included both larger and smaller start-ups which shared similar features with the rest of the start-up scene to ensure consistency and relevance. These start-ups entry to the public market ranged from one year to over a decade to understand, whether and how this affects the overall model.

An additional analysis was performed regarding 4 (of the 13 in total) start-ups which had just recently entered the market or announced their plans to do so. The same financial indicators were gathered for this business as well and based on the conclusions from the model, the possible future development of their stock price was assessed. The purpose of this exercise was to put the model that was created is use and to provide an opportunity for the validation of the drawn conclusions in the future. This is however only an experimental assessment which purpose is only to further validate this model or explore its inefficiencies, rather than to draw prediction and is not meant to be relied upon.

3 Analytical part

When it comes down to start-ups going public, past IPO performances differ from steep growth to rapid fall in the value of the shares. This same difference in results occurs across industries as well as sizes of start-ups. If the biggest start-ups like technological sand storage space giant Drobox, notorious subscription TV provider Netflix or the go-to search engine Google go public and their shares soar every day higher and higher, how is it that another technological giants like Twitter, Facebook or Snap cannot replicate the same success? If shares of quite unknown software company Mule Soft can get bough up from the public market by Salesforce for USD 6.5 billion representing a 36% premium over market capitalization, how can it be that such a well-known peer-to-peer transportation provider like Uber is forced to pull out from IPO preparations and postpone it?

This chapter focuses on analyzing what were the main reasons for past IPO successes of start-ups as well as on understanding what were the key roadblocks, which have caused some other start-ups with similar potential to lose the wave and decrease in value over time. The goal of this chapter is to present the most significant KPIs that seem to be responsible for how start-ups did on the public market together with outlining recommendation of ideal setup of these KPIs for successful pubic market entry.

As we will see further in the chapter, similar stories are told over and over again about what makes a start-up successful as well as what will most likely lead to failure. These are some global guidelines towards going public that should be considered as well, since even though they are not the same, classic public companies and start-ups are similar when it comes down to IPOs.

There are two part of the analytical part of the thesis, one focusing creating and presenting a quantitative model, which assess the key financial indicators of the start-ups mentioned in this thesis in different times of the company's life (3 years prior to going public as well as 1 year prior to IPO) and later compares these indicators with the post-IPO performance of these start-ups, measured by the developments of the stock from the first week it hits the public market all the way to an "all time" development of the stock and several important time frames in between, such as 1 or 3 year after going public. This analysis should create a group of outliers, both exceptionally successful and the least successful and later match these start-ups with their past financial performance to understand which indicators play a key role in the future success on an IPO and how can a company planning on going public prepare their P&L and balance sheet for this event.

The second part focuses on more "soft" part of the key indicators analysis. It focuses on the non-financial indicators such as ability to acquire and retain customers or the reputation of the company and looks at past IPOs of start-ups and the past development of their non-financial background and how it affected the post-IPO performance of the company.

This two parts of the analytical section of this thesis should outline several guidelines, both financial and non-financial, for star-ups and its founders to keep in mind when going public and help them focus their efforts on what was proved to be the most crucial aspect of the business readiness for an IPO.

3.1 Quantitative section

This first section of the analytical part of this theses aims at gathering consistent data for all presented start-ups, putting them in a simple excel model and looking at interdependencies amongst them. This section will be followed by a qualitative section, which looks at the more

abstract part of the performance of each of these business. As mentioned later, this model sometimes falls short and its outcomes and conclusions either don't work as expected or get delayed or postponed to different time frame. Therefore, the next section in presented to draw the full picture the past performance (financial and non-financial) of these business and to link this performance to the future development of the price of their stock, which is a representation (yet not complete one, however the most accurately quantifiable) of a company's success on the market.

3.1.1 Quantitative model

As per the quantitative segment of the analytical part of this thesis, a model was prepared in order to assess how each key financial indicator affects the success of an IPO of a technology start-ups. The first part of the model looks at 8 key financial indicators, such as

1. Revenues
2. Gross profit
3. Gross margin
4. Gross profit growth (CAGR)
5. Net profit (or loss)
6. Net profit margin
7. Net profit growth (CAGR)
8. Revenues per full time employee

With inspiration from Carver (2012) and Camp (2002), each of these main financial indicators were analyzed for the year prior to going public (to ensure full year-end data) and 3 years prior to going public to understand the underlying trend as the company approach the IPO year (i.e. In case of IPO in 2015, financial data were analyzed for 2014 and 2012).

The second part of the analytical model focuses on understanding the performance of the business after going public. This part of the quantitative analysis mostly looks at the performance of the listed stock within several time frames as well as its volatility. In particular, this part of the model includes:

- Stock price on IPO date
- Stock price 1 week from IPO
- 1 week price growth
- Stock price 1 year from IPO
- 1 year price growth
- Stock price 3 years from IPO
- Years price CAGR

Stock price on 4.1.2019 (Last trading day of the first week of 2019)

"All-time" CAGR (stock price development of the business during its participation on the market – price on the IPO day until first week of 2019)

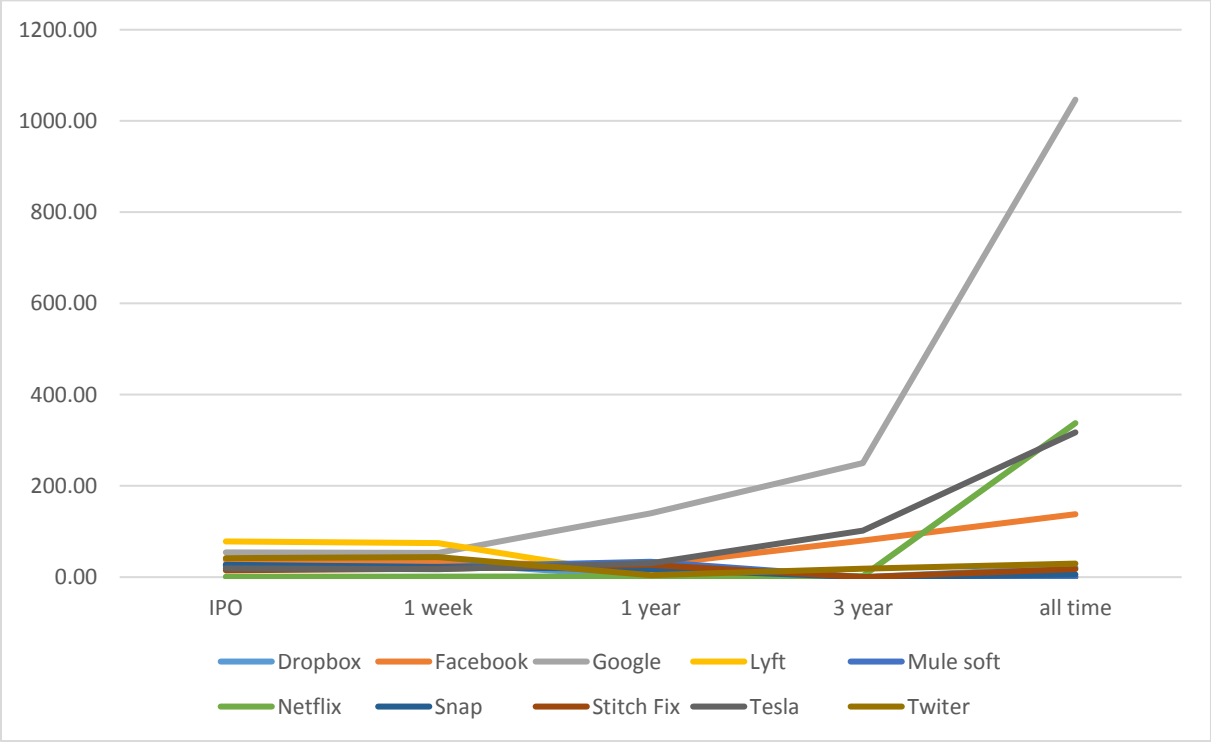
Not all of this data could be analyzed for each of the start-up in the model, given some of them are younger than 3 years (entered the public market just recently), which proposes the opportunity to look at the data retrospectively in the future and analyze the validity and accuracy of the finding and opens space for potential adjustments. 1 week post-IPO stock price was analyzed the impacts of the company's financial health (analyzed in part one of the model) on the "peak" in stock value generated by the IPO itself and the buzz around it. (Connect with non-financial finding where peaks were significant and where they did not occur) Post-IPO

performance of the business was measured via the development (CAGR) of stock price in 1 year as well as 3 years. Additional, long term, performance measurement was added by looking at the growth rate (CAGR) of the stock price during its whole time on the market (until the end of first trading week of 2019) (compare new young public start-ups with likes of Netflix or Google – i.e. 1 year CAGR of 2018 IPOs and 1year CAGR of 200x IPOs) In addition to analyzing the performance of the listed business through its stock price, volatility was also added to the model by looking at the 52-week low and 52-week high (highest and lowest value of the stock in the past 52 weeks).

The first part of the model generally focuses of understanding the key financial indicators of the business and the overall financial health of the start-up, where the second part looks at how "successful" these businesses were on the public market. By combining these two part, a conclusion can be drawn of what is the optimal financial performance of the best performing start-ups going public.

All of the data required for this matrix was obtained from the S-1 filing, which is required by the SEC (Security Exchange Commission) before going public. This ensures all data are looked at the same way and represent the same information and approach to their calculations.

Graph 1 Development of stock prices of each addressed start-up over time



Source: Own elaboration

By looking at the real data produced by the model, several trends are apparent. Following are the 3 most significant trends described by the calculation.

First week peak in generally negatively affected by net loss, and positively affected by making net profits

Since most of the regular investors do not follow the IPO market on day-to-day basis, they often get to know about a company going public from the news or web portals, which is usually just before the IPO happens. This is mostly why the model shows, that the first couple of weeks of trading are more volatile and usually negatively affected, in the cases where he business is making a loss rather than profits. Retail investors usually do a quick research of the stock when they see and IPO (potential new investment opportunity) before deciding whether to participate or not. Often, they are also more inclined to believe what the particular news source had to say about the stock, which is not positive in most of the cases where the business is making a loss. Also, start-up IPOs tend to be looked at more critically that other companies, mostly given by the unexperienced management and lack of public understanding of the underlying technology. It is also only recently that companies with net loss are going public and therefore, due to the lack of precedent, investors are cautious of making such an investment.

Continuity of profit or loss making

Especially in cases where the company is making a loss making, future investors like to see profitability trend towards break even and making net profits. Long run of loss making suggest not only insufficiently optimistic future for the company but also lack of cash for future potential pay-outs of dividends and therefore lack of ability to gain additional profits from investments other than via selling the position. The IPO of Lyft, which net loss was USD 1.8b and which is examined in the model as well as the IPO of Lyft main rival Uber, also a ride hailing app, currently ranked as number 1 in the market, which net loss is over USD 3b might set this precedent in case of a successful post-IPO performance, as these are the front runners, the first companies going public with such a significant net loss (on such a significant revenue and past funding)

Decline in net profits (especially further decline in loss making) negatively impacts the development of stock price in the same period

In ideal case, whether a company is booking a net loss or not profits, the trend as the business approaches is public offering date should indicate positive future development, meaning increasing profit margin. In case a company fails to prove so, even though net gains are significant and positive, it has to present a supporting story for why this is an intentional and current or short time stage, and a plan for when and how there are going to reverse this trend.

There are also more trends that can be noticed when pairing past financial indicators of a company with its future, after IPO performance. The performance of each key indicator can be quite accurately compared to the future performance of the company, simply because the pool of investors who can invest in a public company is quite limited in the first few days after IPO (mostly large, institutional funds or banks) and gets wider as the shares are resold from these investors to public, individual investors. As mentioned in the methodological part of this thesis, generally, there are two types of investors on the market: 1) long term investors looking for companies with long term growth potential and stable performance and 2) speculative or opportunistic investors, who look at inefficiencies in the market or stock price and for arbitrage opportunities. Majority of the investors of the market however consists of long term value investors, who mostly look at similar data in a similar way. Following is an assessment how each financial indicator influences decision-making for long term value investors.

Gross margin

Gross margin, which represents the cost efficiency of a company's production (revenues – cost of goods sold), is the first indicators that investors looks at when evaluating a company. It only happens rarely that a company planning to go public would not be able to cover the costs of its own products or services without making a loss. This can mostly happen to companies providing a service, where the cost of goods sold or COGS for short also includes the labor cost, which is not the case for manufacturing companies or generally for business producing physical products. The only company to book a negative gross profit margin in our model is Snap, with a gross loss of USD 124m 3 years prior to IPO and even though it has significant gross profit CAGR of 38% and managed to take of almost USD 80m of loss, ending up at a gross loss of USD 47m the year prior to IPO, it has still ended up as the worst performing stock in the model and lost over half of its stock price since going public (also loosing almost 20% of its stock price just within the first week of trading). This shows that being able to prove that a company is able to make profit beyond its cost of production or services is essential for the future investors trust. As more and more service start-ups like Uber or Lyft (these however only book net loss and achieve gross profits) with huge net losses are going public, cases with gross losses can become more common, however needing to have a solid argument behind why this is happening (mostly push for rocket growth) and a robust business plan with concrete breakeven point, how to get there and a timeline where this should happen. Also, companies can have a second scenario calculated in the business plan assessing how would the company perform and grow in case they did not push scale and focused on gross (and net) profits to justify their decision.

Net margin

As mentioned in the previous sub-chapter, there are more are more, mostly service or "as-a-service" start-ups going public even though making significant losses. This is mostly given the strengthening economic environment and stronger believe of investors. Also, venture capital funds, and venture capital investors in general, have invested billions of dollars into such companies and IPO is in most of the cases, their only way how to monetize on this investment, since these start-ups have grown too large, at least by paper valuation base on past funding rounds, that no other company has the acquisition capital and financing to buy them. Also, these companies have not yet proved themselves and are based on large number of user, which is not what these companies M&A teams are looking for.

Where the model doesn't work and why

There are situations, most noticeably Facebook, where the trends derived from the model come short and does not resemble or align with the post-IPO performance of the stock. The reason for this is, that the quantitative drivers or financial indicators are overdriven by certain "soft drivers" mentioned later in this part of the thesis, for example the truthfulness of the top management as well as the long term reputation of the company. This indicates that no matter how stellar a company financials can be, if these non-financial requirements are met, it does not affect the future stock performance. The main reason for all of this is that the future of the company is mostly driven by the ability of the company to attract customers and investors amongst regular public, which usually do not look at the financials. Also, quite often do these two, financial and non-financial indicators, go hand in hand. One of these cases is Uber, who's pursuit of rocket growth and customer acquisition at any cost has led to both poor key financials (other than revenue), such as bad profit margins and huge, USD 3b, loss as well as poor working

environment, resulting in the resignation of the CEO and other top management personnel and bad PR reputation.

Also, financial performance of the company can be managed more precisely and accurately that is reputation and can be fixed or adjusted in a shorter time period. There are also a lot of approaches and tools which companies can use to steer their financial performance throughout the year to meet the year plants presented to the investors and therefore secure the continuity of its stock price development, where this is much harder to do for the non-financial indicators, since these are hard to manage in-house (unlike financial performance and books which are entirely managed by the company in-house). These soft performance indicators are also much easier to access by public – regular investors, therefore not meeting the requirements in this part of company's performance affect the stock price in larger extent, for longer period of time and is harder to fight against or adjust.

The table showed below (Table 1), sorts all analyzed start-ups according to their performance in each of the main three categories. First section looks at all time growth of the stock since the IPO of the start-up. Second section addresses stock price development one year from going public and last section looks at volatility of the stock (the lower the volatility the more positively future investors will look on the business).

Table 1 Ranking of companies by growth and volatility

Company	By all time growth				Volatility	Ranking
Company	1 week	1 year	3 years	All time	all time	all time growth
Mule soft	-9%	36%	n/a	81%	131%	1
Netflix	-7%	40%	20%	39%	83%	2
Tesla	-9%	57%	75%	37%	56%	3
Google	-2%	158%	67%	22%	47%	4
Facebook	-17%	-31%	28%	20%	78%	5
Stitch Fix	23%	77%	n/a	9%	227%	6
Twiter	6%	-90%	-24%	-5%	82%	7
Dropbox	10%	n/a	n/a	-25%	135%	8
Snap	-19%	-34%	n/a	-53%	231%	9

Company	By 1 year growth				Volatility	Ranking
Company	1 week	1 year	3 years	All time	all time	1 year growth
Dropbox	10%	n/a	n/a	-25%	135%	1
Google	-2%	158%	67%	22%	47%	2
Stitch Fix	23%	77%	n/a	9%	227%	3
Tesla	-9%	57%	75%	37%	56%	4
Netflix	-7%	40%	20%	39%	83%	5
Mule soft	-9%	36%	n/a	81%	131%	6
Facebook	-17%	-31%	28%	20%	78%	7
Snap	-19%	-34%	n/a	-53%	231%	8
Twiter	6%	-90%	-24%	-5%	82%	9

Company	By volatility				Volatility	Ranking
Company	1 week	1 year	3 years	All time	all time	volatility
Google	-2%	158%	67%	22%	47%	1
Tesla	-9%	57%	75%	37%	56%	2
Facebook	-17%	-31%	28%	20%	78%	3
Twiter	6%	-90%	-24%	-5%	82%	4
Netflix	-7%	40%	20%	39%	83%	5
Mule soft	-9%	36%	n/a	81%	131%	6
Dropbox	10%	n/a	n/a	-25%	135%	7
Stitch Fix	23%	77%	n/a	9%	227%	8
Snap	-19%	-34%	n/a	-53%	231%	9

Source: Own elaboration

3.1.2 Possible future development of recent IPOs

In this section of the thesis, this model developed in the previous section is put in action and set for the validation of its outcomes and conclusions by analyzing 4 more start-ups. This time however these, which have either not yet entered the market (the IPO day is set) or those which have done so just recently and are only available for trading for several weeks, therefore the

performance of their stock cannot yet be assessed. Again, the character of these four start-ups has been selected in alignment with the 9 start-ups from the previous section (technical business, mostly using an online platform) to ensure the consistency of the assumptions and suggestion. Following Table 2 summarizes the assumptions for future possible development of these start-ups and is further described below, addressing every assumptions in more specific detail.

Table 2 Possible future development of stock prices of recent start-up IPOs

	1 week	1 year	3 year
Uber	down	down	down
Pinterest	up	up	up
Lyft	down	down	up
Zoom	up	up	up

Source: Own elaboration

Uber

Uber is probably the most followed IPO of recent years (at least start-up IPO) for many reasons. It is the largest IPO of a venture capital backed company in the history with targeted valuation of 85 billion to 100 billion USD (USD 44 a share). At the same time, there has never been an IPO of a company with larger net loss than Uber with its USD 1.8 billion loss in 2018 and even much larger loss of USD 1 billion only in first quarter on 2019, the year it is supposed to go public. Another reason for the attention and controversy is that Uber has already started preparing for going public in 2016, however was forced to withdraw and postpone the IPO due to several suits against its top management, rumors of bad corporate culture and the forced departure of its CEO. Even pushing the IPO date however does not look to help Uber prepare much better, since its debt has increate together with its net loss. According to the assumptions dawned from the model, the significant net loss suggest negative development of the stock in short term (very likely first week and likely even fist several years) until braking even and making profits. Uber also does not directly plan a break even date in its IPO prospectus, therefore assuming its success in the long term is hardly possible. There might be certain reasons for temporary spikes in the stock price such as excitement of the investors for the long awaited IPO (usual spike in first week of trading) or spikes caused by the large, mostly venture capital, investors "cashing out" by selling their share, including such a large investors as SoftBank, Google (one of the examined start-ups) or even the Saudi Arabian government. These spikes will most likely not affect Uber in the long run.

Both qualitative and quantitative performance indicators are therefore not particularly in Uber's favor regarding its post-IPO stock performance. There is still one aspect that Uber could potentially benefit from – the prior IPO of Lyft (which will be described soon after in this chapter). Lyft went public just recently and not very successfully, which could represent several opportunities to Uber, including adjustments in proposed valuation (even to this date, Uber has already adjusted its IPO valuation, or the valuation of one stock on opening bell, after the IPO of Lyft) or unsatisfied Lyft investors (who could see an opportunity to still ride the wave of these two huge tech IPOs despite making losses on their Lyft investment. Also, Lyft has shown Uber what not to before IPO, and its major rival, world's largest ride hailing company can take many lessons and learn from them when it is still time.

Pinterest

Pinterest went public in mid-April 2019, after almost 10 years in business, which makes it rather an exception amongst the other, much younger tech start-ups that went public after only a couple of years in business. This way, Pinterest was able to gather significant experiences in

operating the business and reacting to challenging situations, which always plays a significant and important role when investors are looking at a particular company, since it assures them that the company is more likely to withstand the pressure which public market will put on it. This is also a reason, why the suggestion regarding future development and business prospect of Pinterest suggest upward trend in all time frames (1 week, 1 year and 3 years), even though simply by analyzing only financial data, net loss of USD 74 million could suggest at least short term negative trend. The strong combined annual growth of both gross profit (loss) and net profit (loss) is another factor suggesting long term positive development.

The non-financial performance of interest such as steep user growth and over all positive reputation and no legal disputes are yet another indicators playing in Pinterest favor. The only facts going against it are a) significant number of stock options (150 million shares) which could later diluted other shares, making it less attractive for investors and quite high post-IPO price, with equals over 17 times sales in 2018.

Lyft

Similar to Uber, Lyft is another ride hailing application enabling customers to share "taxi", significantly reducing the price of the transportation. Also similar to Uber, it has been a long time awaited initial public offering and a lot of investors were focused on Lyft to ring the bell. The third similarity of Lyft and Uber is the significant loss both of these companies are making. In case of this cab sharing provider, net losses for 2018 were close to USD 1 billion (in contrast with USD 1.8 billion in case of Uber). The IPO prospectus also doesn't offer any particular path to achieve profitability. The uncertainty future for Lyft is also supported by the fact that even though in absolute terms, its losses are smaller, in percentage terms, it generates a loss of almost a half (42%) of its revenues for the same year (unlike Uber, where this number is "only" 17%).

Unlike Uber however, Lyft shows much better non-financial performance indicators and more like Pinterest, it has a positive overall public opinion as well as no legal dispute and a competent management. The quantitative model suggests, that given Lyft's significant losses, the performance of its stock would crumble in the first week of trading, which has also been proved by the almost 40% drop in stock price over the first two weeks of trading (IPO price of 78.3 USD per share and 59.9 USD per share 14 days later). The positive non-financial performance is the major think keeping the assumptions for long term development with upward trend.

Zoom

Last one of the four analyzed recent tech start-up IPOs is a video conferencing service Zoom. This is most likely the least known start-up of all of the samples, however presumably the most interesting. This business was founded in 2011, however only recently has it reached a significant success and therefore the attention of Silicon Valley and venture capital investors. Zoom has an excellent financial performance, or at least growth. Its net profits grew by more almost 200% year on year for the past three year prior to the IPO. It went public the same day as Pinterest and similarly to this image sharing platform, it has grown significantly in first trading day as well as in the first trading week (1 week growth of over 80%). The fact that Zoom is not relatively as well known as the likes of Uber or Lyft might play in its favor and increase the excitement of investors into the new tech star-up IPO with triple digit net profit growth rate.

Zoom's non-financial key indicators are as satisfying as the financial, and therefore the model suggests positive future development for all examined time frames. There is one reason why this future growth might not be as starling as in the recent week, which is the valuation of the stock. Most of the time, in case of start-ups, valuations are based on future expectations rather than of current performance and therefore, also being pushed by the venture capital investors in need to cashing out their profits, are higher than other publicly traded companies. In case a technical start-up enjoys significant growth and has satisfying financial indications to back it up, valuation of 25 times sales or sometimes even 30 times sales is not unheard of. This is already significantly more than other non-tech start-ups and even much higher from valuation of private transactions (non-public). After this really, Zoom has however reached a valuation in multiples around 80 times its 2018 sales, which can be the only red light which investors will see when looking at the company an one of the very few reasons why, at least for a temporary period of time, the assumptions of the model regarding the future development of this particular start-up might not be fully accurate.

3.2 Qualitative section – success stories and lessons learned

This first chapter of the analytical part is divided into two sub-chapters, where the first one focuses on past successful start-up IPOs and the second sub-chapter later focuses on looking at the other side of the coin, which are the less successful start-up IPOs, in some cases even failures to enter the public market. Both of these part thrive to understanding what KPIs played a key role in success or failure of these start-ups and how did these KPIs looked like for each of the particular business prior and after the IPO. This chapter and the results of the analyses of each start-up IPO should also serve as a documentation and ground for the second chapter, where all the KPIs will be listed and described and where suggestions of how certain KPIs should look like will be provided.

3.2.1 Success stories

This chapter focuses on presenting and analyzing previous successful start-up IPOs, what made them a success and how they managed to keep their stock growing even as a public and mature corporate. Seven start-ups and third IPO, as well as the performance of its stock from the IPO date to the completion of this thesis were analyzed.

Dropbox

As magazine Inc. stats (2018), one of the most current start-ups' IPO success stories is the cloud-storage giant Dropbox. From IPO to the date of completing this thesis, Dropbox value soared 44% in a little over 5 month. This makes it the most valuable start-up to IPO since Snap which went public nearly a year and a half earlier. Unlike Dropbox, Snap did not see its share grow at all and despite its reasonably successful IPO, its shares dropped to below 50% value in just one year of being a publicly listed company. Since Snap has a similar setup and even larger preparations and bigger marketing campaign that Dropbox, this raises the question, what was different. From studying both financial and operational data of these companies at the time of IPO, several factors seem to add up to such a difference in performance. Firstly, and probably the most importantly, Dropbox was able to demonstrate stable and rapid user base growth as well as revenue generation. It its regulatory filing before the IPO, Dropbox reported a 32% year on year growth of revenues (to USD 1.106b), which is unique for a young technology start-up already with revenues in billions of dollars. Another reason for Dropbox success seems to be their approach to future investors and to disclosing its plans and data. Dropbox has informed its future investors, that despite the significant growth in revenues, it might never turn profitable

or if so, it can take years to do that. Also, it has disclosed all information which could affect the stock price in the future like the possibility of cyber-attacks and the fact that any personal data breach that would occur due to such a cyber-attack would be less ability to attract new customers. This way, investors knew what they were getting into and since the valuation of Dropbox at IPO was reasonable, its stocks kept rising in value ever since ringing the bell.

Netflix

It the case of Netflix, which shares rose almost 60% over last two years, its success all comes to strong and proven ability to create unique value over its competitors – in this case its original content. Netflix put all its bets on original content writing and creation and it has played out ever since its IPO 16 years back. From day one, it has proved its potential investors the ability to attract wide spectrum of audience and more importantly, the ability to keep them. Its subscription base grow from 30 million users in 2002 to 130 million in 2018 In 2002, 90% of the users were US based (domestic) but throughout the years, Netflix grew its user platform to almost 50% domestic and 50% international. This capability of keeping viewers entertained for year while attracting new once in the meanwhile is what kept the shares growing steadily for more than16 years with no signs of slowing down.

Stitch Fix

This IPO success story is a little bit different given Stich Fix's non tech nature. This start-up focuses on cloth subscription, specifically on regular delivery of fashion like cloth, shoes or accessories, picked by a stylist and personalized to your own, pre-set needs and wishes. Despite Stich Fix not being a classic Silicon Valley tech start-up, its shares valuation soared to almost double since its IPO not even a year ago. In fact, its uniqueness and unconventionality seems to be the main driver of its huge success. In case of start-ups scene, the vast majority of IPOs are tech companies mostly on a wave of large customer base or one-of-a-kind patentable and breaking edge technology, whereas Stich Fix proved that also classic retail business models can also succeed on the public market, even though still in the start-up stage. It has also a proven track record of acquiring an retaining large numbers of paying customers, in an era where the above mentioned tech start-ups mostly rely on large customers count, who offer use their product or services for free. Stich Fixed reported an above expected profitable quarter with planned yearly sales of USD 1.2b and EBITDA around USD 50m, something which is also not an everyday case with start-ups' IPOs.

Equity tokens

Equity tokens represent a subcategory of security tokens. Via issuing equity tokens, companies can substitute the both the IPO process and the bond issuing process, since the equity token can represent share of the issuing company debt as well as equity. There have been a lot of controversial about equity shares ICOs and the Security Exchange Commission (SEC) has stated that equity tokens fall under the federal securities regulation and therefore there comply with these regulations, making it more difficult and more costly for start-ups to issue them and therefore taking away a lot of its initial potential. This method is similar to venture capital funding, with the exception of being available to wide audience of retail investors.

Tesla

This controversial start-up and its, maybe even more controversial founder, is another great example how technological start-ups can successfully enter the public market and grow in value

over time. Tesla's share price has grown from USD 193 to USD 371 between 2015 and 2018 despite dividing investors into "love" and "hate" camps. Recently, after its CEO announcing the possibility of using privates funding to take Tesla from the private market at a premium, its stock price soared even further. When analyzing the main factor standing behind the success of this electric car manufacturer, all hints look to point one way – to its founder and CEO, Elon Musk and his one-of-a-time marketing ability. What has been crucial for Tesla on the public market is the never fading vision. Many investors get attracted to this company not necessarily because of its performance, but also because of its unique and bold vision for the future. Tesla has also proved throughout the years its ability to prove doubters wrong and achieve success as a technological frontier and pioneer on the market populated with one of the biggest and strongest companies in the world. Also, investors often hold this stock for its possible upside if all plans worked out and Tesla eventually turned profitable, since its current business model is to suffocate generating profit in order to achieve scale and competitive level with big auto makers.

Google

Google might not be the first company to come to mind when thinking about technological start-ups, however, even Google had to start somewhere. In fact, Google has been a public company only 14 year, two years less than previously mentioned Netflix, which might be more likely to pop up to mind when thinking about a technological start-up. Googles stock value grew enormously over the past 5 years, mostly because of its ability to turn its products and services into everyday necessities. Starting with its notorious search engine, without which most of people would be able to search the web as precisely as they can. Also, Google has created business model where there are able to provide the best services and products (like its search engine) for free, generating revenue from advertisements

Mule Soft

Software as a service integration company Mule Soft has been on the public market while the value of its share has grown by 164%. As if this success of quite an unknown technological start-up base in Silicon Valley was not enough, another tech giant has recently agreed to buy up all MuleSoft's share for USD 6.5b in cash as well as Salesforce stock options, making it a 36% premium valuation over MuleSoft's market capitalization. As MuleSoft's CEO says (2017): "Investors want to know that there's a long-term growth trajectory for the company, they want to know that there's a big market and market opportunity, and if you have those two things and you're showing that you're executing as a company then you usually can go forward" According to CNBCs Anita Balakrishnan and Harriet Taylor (2017) this IPO was even more important for Silicon Valley and its tech start-up scene than Snap going public, since it brings awareness to other mid-market enterprise cloud companies.

3.2.2 Lessons learned

After learning something about start-ups who achieved great success when entering the private market, it is time to also look at the less successful once, who's IPOs did go quite as planned or who struggled to keep the value of its stock growing over time. For this second part, four start-ups where analyzed.

Facebook

It might sound odd to say that one of the biggest tech and start-up IPOs in history was a failure and also, it cannot be said that long term performance of Facebook stock is a failure, however, there has been some indicators of not very well let IPO by investment banks (underwrites) as well as some unnecessary falls in stock value that could have been prevented and since Facebook is a representation of the new era of start-ups, an analysis of these preventable losses in value require explanation and further analysis. To begin with, as mention in previous chapters of this thesis, an IPO is usually led by one, or more likely many, investment banks, who underwrite the stocks, meaning also that they are insuring its minimal value. Their fees, which can amount to a couple percent of the total valuation, depend on the stock reaching being sold for this minimum price. It is also common, that the investment banks which are involved in an IPO buy a certain number of the issuing stock and later sell them themselves, but in the case of Facebook, as mentioned in the post IPO filing, out of the total USD 16b of shares issued, Morgan Stanley, Facebooks lead financial advisor, bought 163m shares worth USD 6.16b, almost one third of all the stock issued. Other investment banks such as JP Morgan or Goldman Sachs ended up with another USD 5.6b, meaning that total of USD 11.7b, over 70% of the total stocks were bought by investment banks and only less than 30% were bought by other investors, which is quite unheard of and definitely not a sin of a successful IPO. Another concern that also other recent tech start-ups face is regulation and private policy of its users, which was the reason for numerous drops in Facebooks stock value and eventually led all the way to its CEO hearing in front of the US Senate. Most of these relatively young companies are mostly focused on growing and not losing its momentum and less focused on corporate governance and compliance.

Twitter

As CNN Tech stats (2017) Twitter's IPO in 2013 was by many predicted to be similar to its biggest competitor, Facebook. However, even though certain mistakes Facebook and its financial advisors made it its IPO, compared to Twitter, the story might look like a success. Twitter also disposed a large customer base with previous significant growth and was widely populized in media. It stock price however loss more that 70% of its value between 2014 and 2016 and stayed flat for another 2 years, only to start slow growth from 2018 onwards. There were mainly 3 reasons, which are too high initial valuation, too ambitious growth plans communicated to the investors and piling losses. Usually, investment banks are trying to undervalue the stock price in the IPO day to see more rapid growth later on, which did not take place in Twitters case. Also, Twitters user base growth slowed down as it approached 300 million, which was not the initial growth plan Twitter management has communicated to the investors.

Snap

Snap, as analyzed by CNN (2018), looks to share all 3 "Twitter problems". Its debt has amounted to more that USD 500m in 2016 while its user base growth is slowing down due to strong competition from Facebook owned Instagram. Its valuation, however, did not reflect these issues and therefore, its share has decreased by more than 60% since its IPO only one year earlier in 2017. In both cases, an influence from public media and it's past rapid growth has made investors think too high of the stocks in the first place and lack of communication of future business plan and growth targets from both Snap and Twitters management has caused the drop in the stock value after investors were caught surprised by unexpectedly slower growth and the lack of ability to generate profit or at least pay down mounting debt obligations.

Uber

This example is a little bit different from the other, previously mentioned scenarios, because despite Uber's big plans for going public, the IPO canceled last minute and pushed back for several years. The main reason however seems similar to all the other start-ups – a young and inexperienced management and lack of corporate governance and communications. Uber has proved its ability to operate at great scales and attract new users, but as was the case with many other tech start-ups with significant growth, all the attention was on maintaining the momentum and the growth rather than making all the internal things right. This does not matter as much while the business stays public, since it mostly relies on investors believing its potential for the future, but grows to be one of the most important, and most frequently overlooked aspect of IPO success. Uber has always battle heavy regulatory environment and significant power of taxi lobbying, which has even more significantly increased as Uber approached its IPO. The legal costs Uber has to pay for defending itself as well as all the revenue losses for the cases where it has to take steps back on expanse of its margin has combined with the fines they were forced to pay after losing some of its legal battles. These all has push Uber even further from turning profitable and successfully entering the public market. To top it all off, the unexperienced management led by the CEO has caused internal, corporate culture problems like leading to race and gender discrimination allegations, which has eventually made Uber to cancel its plans for an IPO, replace its CEO. Latest news suggest Uber might go public in 2020.

3.3 Key KPIs to look at when thinking about IPO

In this chapter, after 11 companies were analyzed in detail, 7 successful and 4 unsuccessfully engaging in IPOs. These 11 companies were selected either because they were represent a typical start-up or because they went public recently or both. They all share some of the typical characteristics with other start-ups companies like technology industry, fairly young management team, inexperienced CEO, only a few years of operations at scale and so on. After studying these 11 start-ups and the process and approach they have taken to an IPO together with the outcome, both short term and long term performance of the stock of the company, the following indicators seems to represent the most important KPIs and how they need to be set up in order to contribute to a successful IPO.

3.3.1 Customer acquisition and retention

Since this KPI is the most used one when venture investors evaluate business and potential investments into start-ups, its importance only increases while planning on monetizing these investment and going public. This KPI is also the main reason for the gigantic, multi-billion dollars valuations we can see today and it is crucial for start-ups to keep accomplishing these plans for customers growth and their retention since failing to do so indicated initial over-valuating and leads to correction in stock price and drop in enterprise value.

3.3.2 Regulations

Especially with the arrival of shared economy, start-ups can sometimes get in clash with rooted business which have been of the market for decades, questioning and challenging their business plan. In such a case, these start-ups need to be aware go the regulatory issues and environment of the market. Not just the one they operate in, but also the global market to eliminate the risk that investors would see in getting the business they are investing in regulated once it broadens its operations in new geographies. In an era of such a globalized markets as we have right now,

this is an issue all start-ups will eventually have to face and it is important to anticipate in in advance to avoid confusion during or after an IPO.

3.3.3 Reputation

Reputation is an aspect not many start-ups founders seem to look at whilst there are busy growing their business and it does not represent much of a threat as long as the company is privately own and backed by venture capital funds or angel investors, but it is a critical factor to look at when thinking about going public and as seen as for example in the case of Uber, can cause a start-up to entirely change all IPO plans and reschedule or even cancel its entry to public market. This corresponds with one of the disadvantages of being a publicly traded company which is mentioned earlier in this thesis which is the spot light a start-up will find itself under while transiting from private to public. All the media coverage has a big influence on public in general and it is not any different when it comes down to investing. Anything bad, questionable or suspicious need to be cleared before, in the execution phase of IPO preparations. This might affect initial valuating but coming clean eliminates any doubts that might come later and that might cause the value of the stocks to tank.

3.3.4 Authenticity and accountability

As the last KPI that somehow connects all the others come the need for the start-ups wanting to succeed while being publicly listed to be authentic and accountable to their promises. The value of a company is based more on how investors think the company will do in the future than it is based on how the company is performing at this moment. Start-ups have the biggest and most aspiring plans and goals amongst all other businesses so it poses yet even more importance of sticking to these plans and hitting the target that were set, whether it is for customer base or revenue growth, date of break even or when the company's operations will turn profitable or any other previously mentioned KPI. Because if one thing matters even more that how these KPIs are set and how the start-ups performs in each of them, it is the ability of the start-ups to stick to these plans or communicate well if an unexpected circumstances force it to change directions.

3.4 What could go wrong and possible pitfalls

The last part of this thesis looks at what could happen is the outlined KPIs and their suggested setups are not met and how it can affect the start-ups future.

3.4.1 IPO pop or its absence

As mentioned previously in this thesis, stocks are usually underpriced in the first day of IPO. It is normal for a stock to raise by 15% - 30% in the day of initial public offering itself – this is called an IPO pop. It is a good sign for an investment bank, since that is what their fees are based upon and overall it created an image of a stock that is sought after by investors and therefore makes it more interesting for retail investors as well. Too big of a pop, or for that matter, underpricing a stock way too much, however poses a challenge for the long term investors, including sometimes formal venture capital funds, since the bigger the pop the more vulnerable the start-up and its stock are to later deflation of such a "bubble", which can even result in a stock price below the initial level. Also, overpricing the stock poses the opposite problem, which is that if an IPO pop does not occur, it can distract future investors and look like there is too little appetite for the company on the public market.

3.4.2 Compliance issues

Given the ever increasing amount of publicity and exposure to both media (general public) and regulators and also taking in account the much higher accounting and regulatory requirements against public companies, it does not happen rarely that start-ups start making little mistakes by mot being compliant with all these institutions and therefore undertaking even more pressure on the stock price. Also, these are issues that should have been taken care of in the planning phase and does not bring any additional value, only distract the management from the core business decision making.

3.4.3 Loss of control

In the case of a public company, it is much easier for former founders to start losing control over the destiny of their start-up, simply because the power is distributed between many parties, including quite a few significant shareholders, mostly in form of a institutional investors like hedge funds, pension funds or insurance companies. This present another problem, which is that founders shares are diluted, their say in terms of steering the company is weaker and the push for new, more experience management increases. This is, however, something that worries the investors, since they cannot be sure whether or not the new management will be able to lead the company good enough for the stock price not to drop.

4 Conclusion

After analyzing numerous start-ups, larger and smaller, some that has started just recently and others that has been on the market for over a decade, initial public offerings seems to represent an ideal ultimate stage of start-ups life cycle. One, that also represents the turn from a small team of enthusiastic founders with a vision, mostly focus on rapid growth and on reaching their goals to a more mature and responsible company, which need to be sustainable on a global market and against big competitors in form of the big brands who are leaders on the particular market.

IPOs themselves are quite a complex process requiring a thorough preparation that can take over a year. Along this preparation, start-ups can hopefully use some of the outcomes of this thesis in terms of guidelines to which factors are the most important once and how to properly set them up to maximize the effect and the results of the IPO. These are outlined in the analytical section and are divided into two major sub-part: quantitative and qualitative. In order to set quantitative guidelines, a model was designed, which is gathering and analyzing the key past financial indicators of each of the examined start-ups (such as revenues and gross and net profit) as well as calculates multiple commonly used performance measurements such as margins or their compounded annual growth over several years. The second part of this model later gathers the most quantifiable measurement to determine success of large companies, which is the price of the stock and its past development. As for the quantitative guidelines drawn from this model, all of the examined start-ups were ranked by the performance of their stock within various metrics, such as growth within multiple time frames as well as their volatility and key financial indicators were matched with the companies ranking. This approach has outlined several guidelines for future start-ups considering going public, which mostly show the importance of making a profit (or at least having a robust and presentable plan to do so in the future). While some of the examined start-ups were able to obtain significant revenues as well as the ability to grow exceptionally fast, not making a profit in any of the years prior to the IPO always negatively impacted the stock price in the short term. In the cases where start-ups were making net losses, the ability to show strong growth potential and set date of braking even with a strong plant to support it helped the stock price to recover faster. The model also showed that the stability of the company's performance (earning and ability to acquire customers) has a more significant positive impact on the performance of the company than the ability to make exceptionally large earnings. The suggestion for start-ups considering an IPO in the future from the quantitative standpoint would be to focus on showing the investors the ability to produce cash flow and to organically break even (make profits) and to do so consistently over a period of year.

Quantitative KPIs however come short and does not help in case the qualitative KPIs are not met. These indicators are harder and meet and even harder to retain (since they depend not only on the company but on the public as well). Qualitative KPIs include making sure that the company can prove a track record of successful growth of customer and user base together with the trustworthiness of top management and the reputation of the company and its work culture. Also, start-ups need to make sure to act like publicly traded companies before becoming one in order to give the future investors the confidence to put their money into the future stocks and continue the growth of its price.

This set of quantitative and qualitative KPIs has been proved to help companies, especially start-ups in have more stable and growing success after entering the public market. Generally all of these finding are aligned with the opinion of other authors on this matter, including the importance of rapid growth and ability to continuously outperform competition mentioned by Thiel (2014) or the impact of good reputation on stock performance outlined by

Knight and Pretty (2001). Also, Caselli (2010) mentions the importance of the quantitative metrics mentioned previously on a company's performance on the markets, which, as the models shows, applies to star-ups in the same extent.

However, not all stories of start-ups going public are successful once. If these guidelines are not followed properly and the success factors are not met by the business, IPOs can cause more problems that how many benefits it provides. For one, the preparation itself is expensive and takes the focus of the stakeholders at least partly away from the main operations of growing and steering the business. Also, unsuccessful initial public offerings can cause other issues like legal problems with compliance or even loss of control over the company if the investors assume that it is not in the business's best interest for the founders to keep the company running.

All in all, IPOs is a great tool for the companies and start-ups, which have successfully went through all the start-up life phases and represents the ultimate success of a company. It increases the public awareness of the start-ups, its products and services as well as provides a significant financial injection to the business and helps the founders and investors monetize their efforts with building the company and growing it into such an impressive size. This shows that just that fact that a start-up can even think of going public itself represent some certain success in some form or the other. The outcomes of this thesis can however be used to amplify this success and use IPOs to propel the start-up, or now a mature company, to another level of success.

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Appendices

Appendix 1 Past financial development of examined companies

Trading companies

Company	Revenues		Gross profit		Net profit/loss	
	IPO-3 years	IPO-1 year	IPO-3 years	IPO-1 year	IPO-3 years	IPO-1 year
Dropbox	604	1107	196	738	-326	-118
Facebook	777	3711	554	2851	229	1000
Google	86	962	72	840	7	106
Mule soft	58	188	41	139	-48	-50
Netflix	5	76	1	26	-30	-39
Snap	59	405	-124	-47	-373	-515
Stitch Fix	73	730	26	323	1	33
Tesla	15	117	1	31	-83	-154
Twiter	28	317	3	188	-67	-79

Company	Gross profit margin		Gross profit CAGR	Net profit margin		Net profit CAGR
	IPO-3 years	IPO-1 year		IPO-3 years	IPO-1 year	
Dropbox	33%	67%	94%	-54%	-11%	40%
Facebook	71%	77%	127%	29%	27%	109%
Google	84%	87%	241%	8%	11%	288%
Mule soft	71%	74%	84%	-83%	-26%	-2%
Netflix	12%	34%	558%	-596%	-51%	-14%
Snap	-211%	-12%	38%	-635%	-127%	-17%
Stitch Fix	35%	44%	254%	1%	5%	476%
Tesla	7%	26%	454%	-563%	-132%	-37%
Twiter	11%	59%	692%	-238%	-25%	-9%

New entrants

Company	Revenues		Gross profit		Net profit/loss	
	IPO-3 years	IPO-1 year	IPO-3 years	IPO-1 year	IPO-3 years	IPO-1 year
Uber	7932	10943	3772	5320	-1131	-1820
Pinterest	299	756	139	514	-188	-74
Lyft	343	2157	64	913	-683	-911
Zoom	61	331	48	270	1	8

Company	Gross profit margin		Gross profit CAGR	Net profit margin		Net profit CAGR
	IPO-3 years	IPO-1 year		IPO-3 years	IPO-1 year	
Uber	48%	49%	19%	-14%	-17%	-27%
Pinterest	46%	68%	92%	-63%	-10%	37%
Lyft	19%	42%	277%	-199%	-42%	-16%
Zoom	79%	82%	137%	2%	2%	183%

Source: Own elaboration

Appendix 2 Post-IPO stock price development of examined companies

Company	Share price								
	IPO	IPO + 1 week	1 week growth	IPO + 1 year	1 year growth	IPO + 3 years	3 year CAGR	4.1.2019 (Friday)	All time CAGR
Dropbox	28.48	31.25	10%	n/a	n/a	n/a	n/a	21.28	-25%
Facebook	38.23	31.91	-17%	26.25	-31%	80.42	28%	137.95	20%
Google	54.16	53.08	-2%	140.00	158%	250.02	67%	1046.68	22%
Lyft	78.29	74.45	-5%	n/a	n/a	n/a	n/a	n/a	n/a
Mule soft	24.75	22.53	-9%	33.66	36%	n/a	n/a	44.89	81%
Netflix	1.21	1.12	-7%	1.70	40%	2.08	20%	337.59	39%
Snap	27.09	22.07	-19%	18.01	-34%	n/a	n/a	5.95	-53%
Stitch Fix	15.15	18.62	23%	26.79	77%	n/a	n/a	17.98	9%
Tesla	19.20	17.40	-9%	30.13	57%	102.04	75%	317.39	37%
Twiter	41.65	43.98	6%	4.31	-90%	18.55	-24%	29.95	-5%

Company	Age		52 week (volatility)		
	IPO	Years on market	Low	High	Dif
Dropbox	2018	1	18.50	43.50	135%
Facebook	2012	7	123.02	218.60	78%
Google	2004	15	877.66	1291.44	47%
Lyft	2019	0	n/a	n/a	n/a
Mule soft	2017	1	19.40	44.75	131%
Netflix	2002	17	231.23	423.21	83%
Snap	2017	2	4.82	15.96	231%
Stitch Fix	2017	2	16.05	52.44	227%
Tesla	2010	9	247.77	387.46	56%
Twiter	2013	6	26.19	47.79	82%

Source: Own elaboration

Appendix 3 Ranking of examined start-ups by growth and volatility of stock price

Company	By all time growth				Volatility	Ranking
Company	1 week	1 year	3 years	All time	all time	all time growth
Mule soft	-9%	36%	n/a	81%	131%	1
Netflix	-7%	40%	20%	39%	83%	2
Tesla	-9%	57%	75%	37%	56%	3
Google	-2%	158%	67%	22%	47%	4
Facebook	-17%	-31%	28%	20%	78%	5
Stitch Fix	23%	77%	n/a	9%	227%	6
Twiter	6%	-90%	-24%	-5%	82%	7
Dropbox	10%	n/a	n/a	-25%	135%	8
Snap	-19%	-34%	n/a	-53%	231%	9

Company	By 1 year growth				Volatility	Ranking
Company	1 week	1 year	3 years	All time	all time	1 year growth
Dropbox	10%	n/a	n/a	-25%	135%	1
Google	-2%	158%	67%	22%	47%	2
Stitch Fix	23%	77%	n/a	9%	227%	3
Tesla	-9%	57%	75%	37%	56%	4
Netflix	-7%	40%	20%	39%	83%	5
Mule soft	-9%	36%	n/a	81%	131%	6
Facebook	-17%	-31%	28%	20%	78%	7
Snap	-19%	-34%	n/a	-53%	231%	8
Twiter	6%	-90%	-24%	-5%	82%	9

Company	By volatility				Volatility	Ranking
Company	1 week	1 year	3 years	All time	all time	volatility
Google	-2%	158%	67%	22%	47%	1
Tesla	-9%	57%	75%	37%	56%	2
Facebook	-17%	-31%	28%	20%	78%	3
Twiter	6%	-90%	-24%	-5%	82%	4
Netflix	-7%	40%	20%	39%	83%	5
Mule soft	-9%	36%	n/a	81%	131%	6
Dropbox	10%	n/a	n/a	-25%	135%	7
Stitch Fix	23%	77%	n/a	9%	227%	8
Snap	-19%	-34%	n/a	-53%	231%	9

Source: Own elaboration